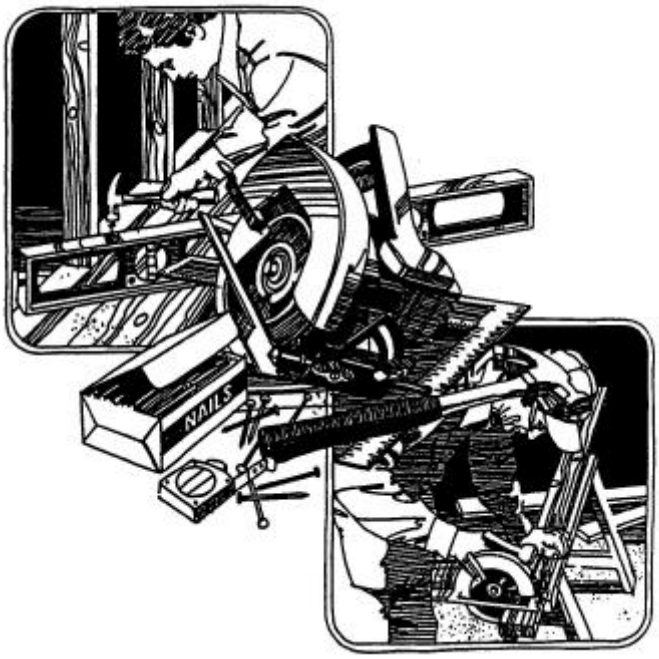
CONSTRUCTION SAFETY ASSOCIATION OF MANITOBA

CONSTRUCTION SAFETY EDUCATION PROGRAM

#3

WORKING SAFELY WITH POWER SAWS



This education program provides a guideline for proper use of power saws. It is intended to give contractors and workers practical information relating to safe use of power saws and personal protective equipment.

This education program contains general information. For specific regulatory requirements, please consult the appropriate regulation(s) adopted under the Workplace Safety and Health Act, the Canadian Standards Association (CSA) Standards, and any applicable Manitoba Guidelines.

SAFETY PROGRAM

www.constructionsafety.ca

POWER SAW SAFETY

- Modern power saws have drastically changed the way in which many construction jobs are done. They enable a skilled workman to perform more work than was previously possible using hand tools with much less effort and exertion.

- In many cases the quality of the finished work is also an improvement over that which was possible with hand tools. Power saws have enabled us to make our lives more productive and rewarding.

- However, power saws can be very dangerous and serious injury or death may result if they are not given the respect that they deserve. Although most people know this, accident statistics reveal that not everyone takes the time to learn or follow recommended safe operating procedures.

- Approximately 8% of all industrial accidents involve the unsafe use of hand tools. In Manitoba alone more than 500 construction workers suffer a disabling injury to their hands or fingers each year. This represents more than the total of eye and foot injuries combined.

SAFETY FEATURES

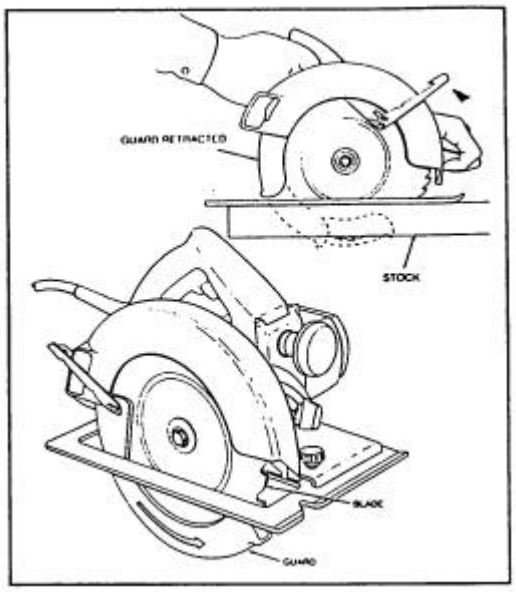
– Modern power saws have many important safety features built in by the manufacturers. It is very important for users to understand the purpose and limitations of these devices and to ensure that they are all functioning as intended before operating the tool.

- Some of the safety features found on circular saws are:

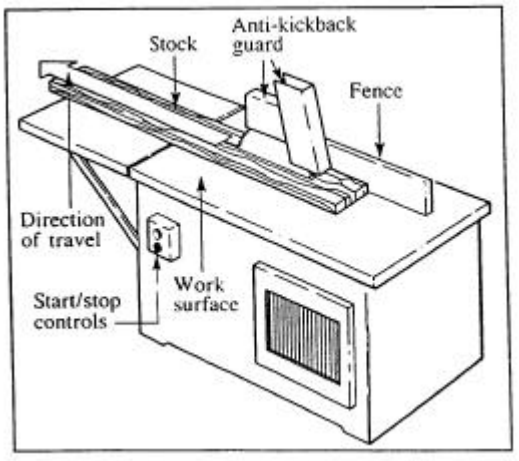
– A nearly totally enclosed blade cover guard consisting of a **fixed** upper section and a **self-adjusting** lower section.

– A **grounded** three wire electrical system and/or **double insulation** on the motor to help prevent electrical shock.

– A spring loaded trigger switch which cuts off power to the motor when released. It is important to remember that releasing the trigger switch does **not** stop the blade – it continues to rotate and will cut whatever it comes in contact with until rotation stops.

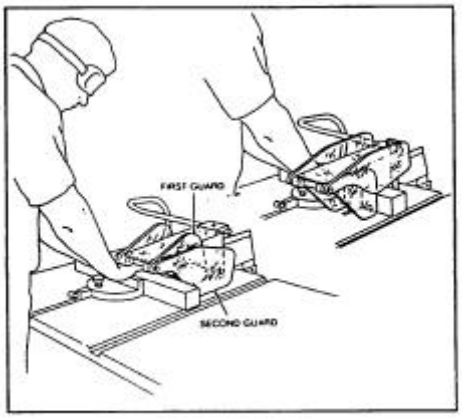


- Table saws are another piece of machinery named on many injury reports involving hands and fingers. As with circular saws the manufacturers of the equipment have built in the required safety features and guards. The diagram on the right shows one type of guard arrangement which can be used when ripping stock.

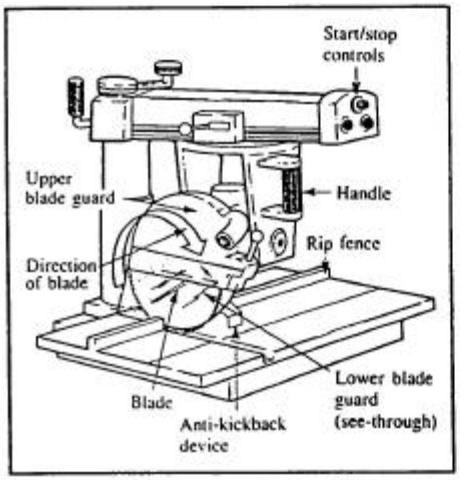


- Another type of guard is the twin action, transparent, self-adjusting type. The first guard rises as the stock enters, then returns to its rest position as the stock moves ahead and raises the second guard.

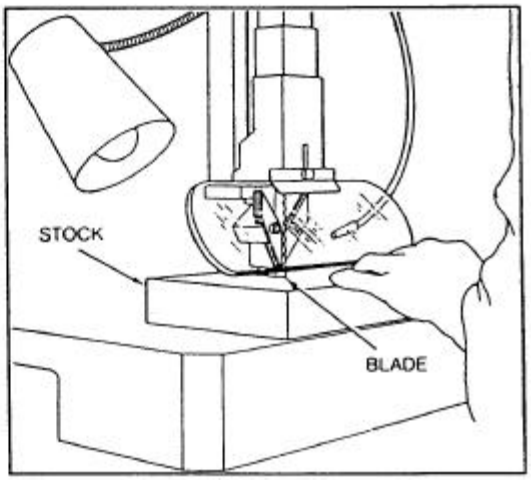
- Radial and band saw blades can also be adequately guarded to prevent hand/finger contact with the saw blade as shown below.



Twin Action Guard



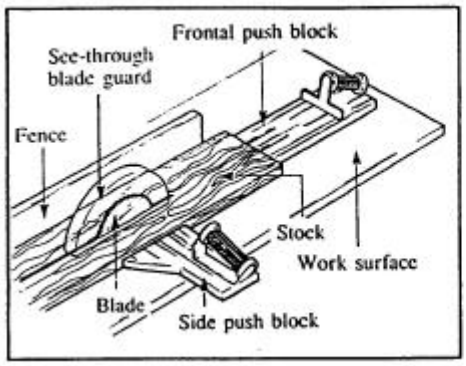
Well Guarded Radial Saw

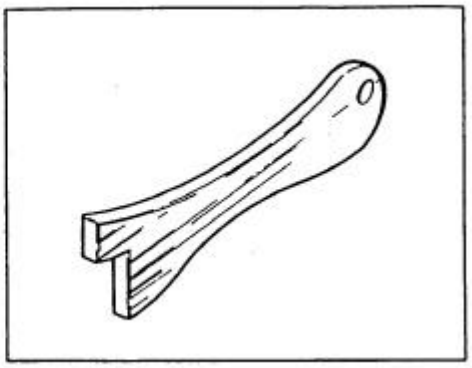


Well Guarded Band Saw

CUTTING AIDS

- **Push sticks, push blocks or hold down blocks** are recommended when ripping narrow stock or operating with your hands or fingers in close proximity to the cutting blades of standard woodcutting machinery.





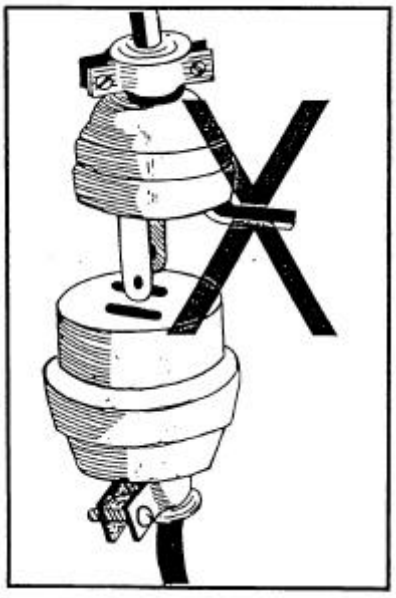
- These sticks and blocks keep your hands out of the danger zone and allow good control of the stock as it is being pushed through the cutting head or blade.

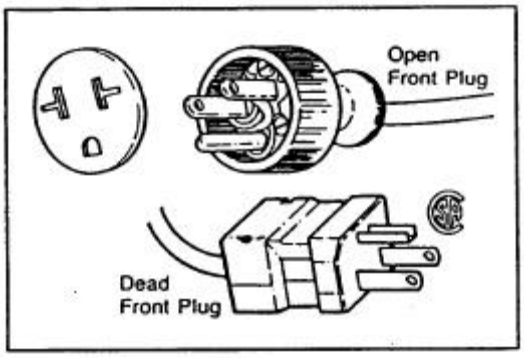
POWER CORDS

- Extension cords are necessary in order to carry the electrical power required to operate the tool to the location which the particular work is being performed.

- Manitoba construction safety regulations require all cords to be of an approved type with proper grounding connections. In addition, a **daily** pre-operating check must be done and damaged cords must be **repaired** or **replaced** prior to use.

- It is **unlawful** to use a cord which has the grounding post removed or been made inoperative. The only exception to the above is for double-insulated tools or equipment bearing the C.S.A. double insulated label.

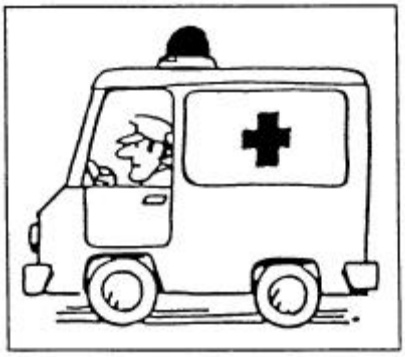




- Although not required by the regulations at this time it is recommended that dead front plugs be used in place of open front plugs as they present less risk of shocks and short circuits.

FIRST AID

- A serious laceration or the loss of a limb is a serious medical emergency in which every second counts. By acting quickly and following established emergency first aid procedures, you may be able to save a life or enable doctors to re-attach the severed limb.



1. Call for help **immediately**, ensure emergency telephone numbers are posted near all telephones at your work place or project site.

2. Apply **direct pressure** to the wound and **raise** the wound above the victim's heart. (*Figure 2 on next page)*

3. Maintain pressure on the wound and press on the **artery** that **supplies** blood to that part of the body. This artery is located on either the **inside** of the **arm** or inside of the **groin** on the **same** side of the body as the injury.

(*Figure 3 on next page)*

4. Be alert for symptoms of shock such as cold, clammy, pale skin; irregular pulse, shallow or rapid breathing or nausea and vomiting. If you think the victim is in shock have him/her lie down, raise the feet and cover to keep warm. Keep talking to the victim and reassure him or her that everything is being done to help.

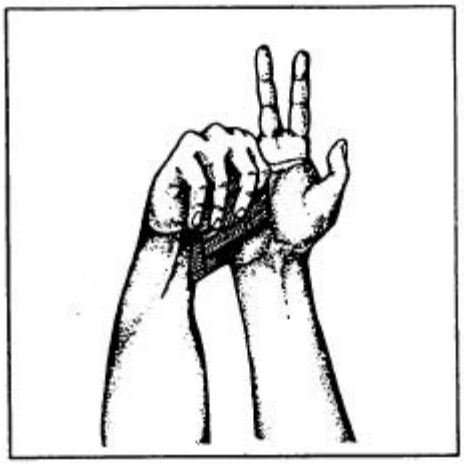


Figure 2

Figure 3

5. Find the severed body part. Keep it clean and put it into a dry, covered container. Then, put this container into another one filled with ice or cold water. **DO NOT** put the severed part directly into the water or ice. Take the part to the emergency room with the victim.

A SPECIAL NOTE…

Manitoba Construction Safety Regulations require all saw blades to be acceptably guarded. This regulation is in place for your protection to help prevent incidents such as the one referred to in the section above. Help prevent accidental injury by ensuring that the guards for the tools you work with are in place and in good working order.

Choosing the Proper Blade

To prevent injuries to workers and damage to equipment, saw operators must understand the different designs and uses of blades. Blades not suited for the job can be as hazardous as dull blades. For instance, a saw fitted with the wrong blade for the job can run hot so quickly that blade tension changes create a wobbly motion. The saw may **kick back** dangerously before the operator can switch it off.

Know how to choose the right blade for the job. The types of blade commonly used in the construction industry are illustrated on the following page…

Crosscut Blade

The bevelled sharp-pointed teeth are designed to cut the cross grain in wood. Size and bevel of the teeth are important factors in cutting different woods. Softwood requires bigger teeth to carry off the sawdust. Hardwood requires fine teeth with many cutting edges.

Ripsaw Blade

The flat sharp teeth are designed to cut the long grain in wood. They are neither beveled nor needle-pointed. Needle-pointed teeth would get clogged and the blade would become overheated. Never use a ripsaw for crosscutting or for cutting plywood. The material could jam and overheat the blade or splinter in long slivers that could seriously injure the operator.

Combination Blade

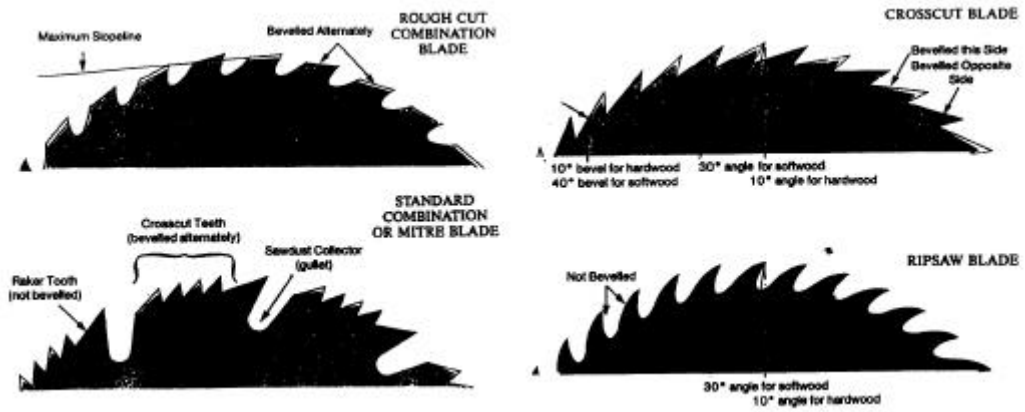
The combination blade combines crosscut and ripsaw features. It can be used for crosscutting and ripping, or for cutting plywood. Carpenters on construction sites prefer the combination blade for rough woodwork such as stud walls and formwork because they don't have to change blades. The teeth are alternately beveled and have a straight front. The heel of each tooth is not lower than the heel of the tooth on either side of it.

Standard Combination or Mitre Blade

This type of blade is mainly used by trim carpenters. It includes teeth for crosscutting, raker teeth for ripping and deep gullets for carrying off sawdust. The blade can be used for cutting both hardwood and softwood and for mitring.

Carbide-Tipped Blades

Some of the blades described above are also available with carbide tipped teeth. The blades stay sharp longer but are more expensive to purchase and to sharpen than ordinary blades. Special care must be taken not to strike metal when using these blades. The carbide tips can come loose and fly off, ruining the blade and injuring the operator. Inspect the blades regularly for cracked or missing tips.



SAW SAFETY CHECKLIST

- Ensure all required personal protective equipment is in place before operating the equipment.

- Check extension cords daily and repair or replace as necessary prior to use.
- Keep all cords clear of the cutting area and suspend them over aisles, doorways or other heavy traffic areas to help prevent injury to others.
- Do not tie power cords in knots as short circuits and shocks can result. Use twist lock plugs instead.
- Check saw blades prior to use to ensure they are the correct type for the stock being cut and for sharpness.
- Allow saws to attain full power before starting any cut, once cutting commences allow the saw to cut steadily – do not force or otherwise attempt to rush a cut.
- Use two hands to operate a circular saw whenever possible; one on the trigger switch and the other on the front knob handle.
- When cutting with a table saw keep your body and face to one side of the saw lade out of the line of a possible **kickback, cutting debris or blade fragment** which may come off. Use proper eye and face protection.
- Provide adequate support to the read and sides of a table saw when cutting wide or long stock. Have another worker assist you if possible.
- Do not attempt to dislodge small cuts or other debris from the vicinity of the blade with your fingers while the saw is running. Use a stick.
- Never leave a saw running or unattended.

POWER SAW SAFETY
REVIEW QUESTIONS

NAME _____
DATE _____

PART 1 FILL IN THE BLANKS WITH THE CORRECT ANSWER

1) Circular saws come from the manufacturer with a _____ upper section and a _____ _____ lower section.

2) The spring loaded trigger switch on a circular saw does _____ stop the blade when released.

3) Electric shock can be prevented through the use of _____three wire electrical systems and/or _____ _____ tools.

4) Manitoba construction safety regulations require that all saw blades be _____ guarded and that a _____ pre-operating check be performed on all cords. Damaged cords must be _____ or _____ prior to use.

5) When ripping narrow stock it is safer to use a _____ _____ than to risk a serious hand or finger injury.

6) When cutting on a table saw you should keep your body and face to one side of the saw blade out of the line of a possible _____, _____, or _____ _____ which may fly back at the operator.

PART 2 ANSWER TRUE OR FALSE TO EACH OF THE FOLLOWING

T / F 1) All items of personal protective equipment such as safety glasses or goggles should be in place before operating any power saw.

T / F 2) It is safe to bend or snip off the ground connector from a power cord in order to use it in conjunction with an old two wire extension cord in good condition.

T / F 3) It is acceptable to use your fingers to dislodge small scraps or other debris from the vicinity of a saw blade which is rotating as long as you are careful.

T / F 4) Power cords should be kept clear of cutting areas and suspended over aisles, doorways, or other heavy traffic areas to help prevent injury.