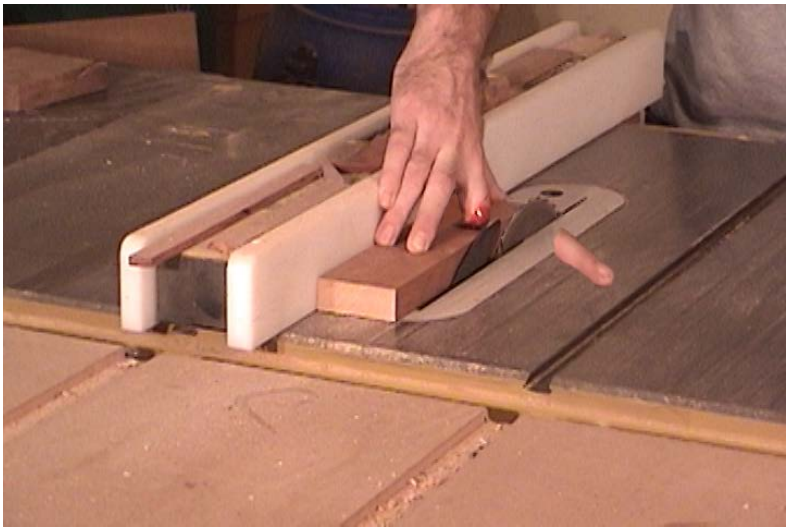
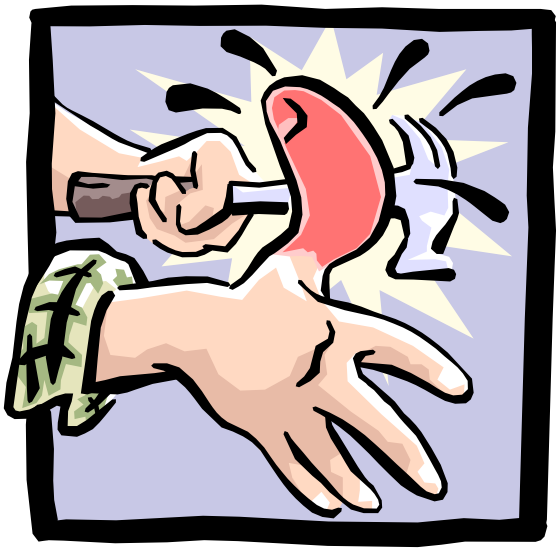
Safety Guideline

For

Wood & Construction Technology





Contents

STUDENT RESPONSIBILITY

Student responsibility in the Shop

- Dress should be safe and proper. Students should also wear aprons, coveralls, shop coats, etc. and safety gloves at appropriate times.
- Adjustments on power equipment should be made only when the power is switched off.
- All students should be familiar with fire drill regulations and exit routes.
- Safety practices should be exercised at all times while working in the shop.
- Know location and purpose of emergency power shut-off switches.

Student responsibility in the Workplace

Many students are unaware of the potentially life-threatening hazards present in the workplace.

Statistics show that one in seven young workers is injured on the job. After car accidents, the leading causes of death among young people are machine injuries and electrocutions. Across Canada, there were 121,452 serious workplace injuries involving 15 to 29 year olds in 1995.

Many of these tragedies could easily have been avoided if a few basic safety rules had been followed, and if the employer had adequately trained the new student to recognize potentially dangerous situations.

Unfortunately, young workers are often so intent on impressing a potential employer at a job interview that they often neglect to ask about workplace safety or job training. Many young workers are unaware of the inherent risks associated with their new job. Some may claim to understand the safety instructions they are given in order to please the trainer when in reality they do not.

You can help ensure your own workplace safety by knowing what to look for when entering a new or different work situation, and by knowing what questions to ask your potential or present employer. Young workers are encouraged to take the initiative and protect themselves by asking their employer the following questions:

1. What are the dangers of my job?

2. Are there any hazards (noise, chemicals, radiation) that I should know about?
3. Will I receive job safety training? When?
4. Is there any safety gear that I'll be expected to wear? Will I receive training in how to use it?
5. Will I be trained in emergency procedures (fire, chemical spill?) When?
6. Where are fire extinguishers, first aid kits, and other emergency equipment located?
7. What are my health and safety responsibilities?
8. Who do I ask if I have a safety question?
9. Do you have safety meetings?
10. What do I do if I get hurt? Who is the first aid person?

To achieve the highest levels of safety, you must possess KNOWLEDGE about the hazards you encounter, PRACTICAL SKILLS to avoid them and the MOTIVATION to apply your safety skills and knowledge.

A Few More Practical Tips for Young Workers

1. At your interview, keep an eye out for signs that the employer takes safety seriously (e.g. warning signs in hazardous areas, employees wearing protective equipment, safety posters).
2. If you aren't given one, ask for a copy of the safety rules.
3. Ask experienced employees, during training, about safety hazards.
4. To find out more information about a chemical, write down the product name from the label along with the name of the manufacturer or supplier, and then look up the MSDS (Material Safety Data Sheets).
5. Learn how to recognize the WHMIS hazards symbols and know what they mean.
6. Know how to wear your personal protective equipment properly.
7. Follow all safety precautions.
8. Notify your supervisor if you experience any symptoms, such as headache, dizziness, irritation in your throat or eyes, or skin rashes, that might indicate that you are being overexposed to a chemical.

The ability to recognize potential hazards in the workplace requires not only common sense but also observation, learning and experience. REMEMBER: If there is any doubt in your mind as to the safety of the materials you are handling or the duties of your employment, you have the right and the responsibility to bring your concerns to your supervisor's attention. Ultimately, all employees, including students, have the right to refuse to do work that is unsafe, and employers cannot fire anyone for exercising this right.

Behaviour-Based Safety

Interest continues to grow in health and safety programs that are "behaviour-based." What exactly does this mean?

Definitions

Behaviours are actions we can see and measure. Whether behaviours are repeated or not depends on their consequences. Actions with positive results tend to be repeated. Actions with negative results tend to be avoided.

Safe behaviour must therefore be shown to yield benefits. These benefits will in turn reinforce the actions that produced them. In this way, safety becomes a *habit*.

In shops, or on a construction jobsite, positive results can include recognition from teachers, respect from peers, safety awards, and, in some cases, incentive programs.

These are the responses that encourage, reward, and reinforce safe behaviour.

Observation

Changes in behaviour begin with observation. By observing students performing a certain job or using a certain tool, it's possible to identify which steps in the process are safe and which involve unwarranted risk.

Observations can then be used to develop checklists for assessing health and safety performance. Are students operating a planer wearing eye and hearing protection? Do students adjust tool rests on lathes as they remove stock?

Reinforcement

Whether by their peers or teachers, it's important that students be recognized for doing the safe thing. This helps to reinforce the desired behaviour.

Reinforcement must be consistent and personal. In some way, the safe behaviour must be made worthwhile to people, not in general but in immediate terms. In most cases this amounts to recognition and encouragement from fellow students and teachers.

Mixed Signals

To make health and safety a habit, the message from the teacher must be clear and consistent. The objective in reinforcing correct behaviour is to change actions. That can't happen when students receive mixed signals.

Teachers may claim to have a strong commitment to health and safety, for instance, but provide defective equipment or enforce deadlines that can't be met without taking risks and cutting corners.

Full teacher commitment to health and safety means *support* as well as control.

Student Involvement

The means of identifying correct behaviour, determining appropriate procedures, and reinforcing health and safety on the job should involve the students. People familiar with the work can help to determine how it needs to be done safely and efficiently.

By conducting observations or reviewing videotapes taken on the job, students can help to evaluate what's right and wrong, then develop guidelines and checklists accordingly.

Development should

- identify tasks that involve frequent injuries or the potential for severe injuries
- determine potential hazards
- analyze how the task is currently done and what equipment is used
- break the task down into a sequence of steps
- create a checklist covering the steps
- Ensure that procedures are realistic and workable.

Involving students from the start helps to ensure compliance later. It also creates a sense of "ownership," strengthening personal responsibility and commitment to the program.

Knowing versus Doing

Just because we know how to do a job safely doesn't mean that we do it safely.

The difference can depend on whether compliance is imposed from above or generated from below. When students provide each other with feedback on health and safety performance, reinforcing positive actions and correcting negative, changes in behaviour can be more long-lasting and effective than those resulting from training or enforcement alone.

Instruction and supervision are often cited as methods of improving safety. But safe behaviour may not outlast the training program or may disappear when the teacher isn't watching.

Some of the most effective behaviour-based programs depend on peers. Students who share the same workplace and perform the same work can be a powerful influence in

fostering and reinforcing safe behaviours. These are the people who can encourage and coach one another.

Construction

Certain features of behaviour-based programs have been developed and implemented with school shops and workplaces in mind.

But teachers reviewing health and safety programs should consider a couple of behaviour-based points.

Objectives. Set realistic objectives. Initial goals might include the percentage of safe behaviours observed using checklists or the number of changes implemented to improve health and safety in certain well-defined tasks.

Expectations. By demonstrating a consistent commitment to health and safety, teachers generate expectations in the facility, especially when students are involved in development from the start. These expectations include not only what teachers expect but also what students expect of each other. Our basic tendency to conform, to seek approval from the group, can be a powerful force in accident prevention, encouraging and reinforcing positive acts. As a result, students come to regard safety as both the end *and* the means of their workplace behaviour.

WHMIS - General Information

What is WHMIS?

WHMIS is a short form for Workplace Hazardous Materials Information System. It is a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, material safety data sheets (MSDS) and worker education programs.

What are the main parts of WHMIS?

The main components of WHMIS are hazard identification and product classification, labelling, material safety data sheets, and worker training and education.

Why was WHMIS created?

It was created in response to the Canadian workers' right to know about the safety and health hazards that may be associated with the materials or chemicals they use at work. Exposure to hazardous materials can cause or contribute to many serious health effects such as effects on the nervous system, kidney or lung damage, sterility, cancer, burns and rashes. Some hazardous materials are safety hazards and can cause fires or explosions. WHMIS was created to help stop the injuries, illnesses, deaths, medical costs, and fires caused by hazardous materials.

How was WHMIS developed?

WHMIS was developed by a tripartite steering committee with representatives from government, industry and labour to ensure that the best interests of everyone were considered.

Is WHMIS a law?

Yes. WHMIS became law through a series of complementary federal, provincial and territorial legislation that became effective October 31, 1988.

The majority of the "information" requirements (and exemptions) of WHMIS legislation were incorporated into the HAZARDOUS PRODUCTS ACT and the HAZARDOUS MATERIALS INFORMATION REVIEW ACT. These apply to all of Canada. Regulations made under these acts include:

- Controlled Products Regulations,
- Ingredient Disclosure List,
- Hazardous Materials Information Review Act Appeal Board Procedures Regulations,
- Hazardous Materials Information Review Regulations.

The occupational health and safety components of WHMIS that apply to federal employees and others covered by the Canada Labour Code (CLC) are specified in the CLC and the Canadian Occupational Safety and Health Regulations.

The following acts and regulations apply to workers in Ontario:

Occupational Health and Safety Act Workplace Hazardous Materials Information System (WHMIS) Regulation

What are the duties under WHMIS?

Suppliers, employers and workers all have specified responsibilities in the Hazardous Products Act.

Suppliers: Canadian suppliers are those who sell or import products. When this product is considered a "controlled product" according to the WHMIS legislation, a supplier must label the product or container, and they must provide a material safety data sheet (MSDS) to their customers. The purpose of the labels is to clearly identify the contents of the hazardous material, and the MSDS is to explain what those hazards are.

Employers: Employers are required to establish education and training programs for workers exposed to hazardous products in the workplace. Employers must also make sure that the products are labelled and that an MSDS is present for each product and that they are readily available to workers.

Workers: Workers are required to participate in the training programs and to use this information to help them work safely with hazardous materials. They may also inform employers when labels on containers have been accidentally removed or if the label is no longer readable.

What are controlled products?

Controlled products is the name given to products, materials, and substances that are regulated by WHMIS legislation. All controlled products fall into one or more of six WHMIS classes.

What is WHMIS II?

WHMIS II or WHMIS Phase II is the term used to proposed modifications and changes to the current WHMIS laws. However, no official change to the WHMIS laws has occurred. If changes do occur, several of the exempt categories may be required to follow WHMIS labelling and MSDS regulations. These categories include:

1. consumer restricted products (those products sold to people in regular stores that are already labelled following the rules of the Hazardous Products Act)
2. explosives (as defined by the Explosives Act)
3. cosmetics, drugs, food or devices (as defined by the Food and Drug Act)
4. pest control products (pesticides, herbicides, insecticides, etc) (as defined by the Pest Control Products Act)
5. radioactive materials (as defined by the Atomic Energy Control Act)

Who enforces WHMIS?

WHMIS is enforced by the Labour Branch of Human Resources Development Canada for federal workplaces and by the provincial or territorial agencies responsible for occupational health and safety for most other workplaces.

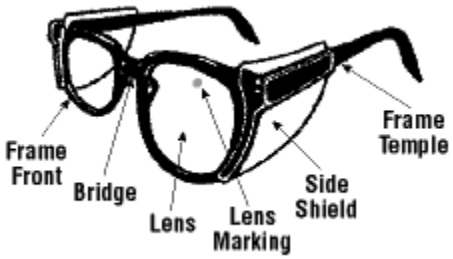
Safety Glasses

How do I recognize safety glasses?

Lenses: The Canadian Standards Association (CSA)-certified safety glasses have plastic polycarbonate lenses. They are stronger than regular lenses, are impact-resistant, and come in prescription and non-prescription (plano) forms.

Markings on safety glasses: The manufacturer or supplier logo is marked (or etched) on all approved safety lenses, frames (front and temple), removable side shields, and other parts of the glasses, goggles, or helmets.

Frames: Safety frames are stronger than street-wear frames and are often heat resistant. They are also designed to prevent lenses from being pushed into the eyes.



What are the pros and cons of the different lenses?

Comparison of Lens Materials

Material	Advantages	Disadvantages
Polycarbonate	-strongest material for impact resistance -lightweight -flexible; lenses easier to change -high visual transmission (91%)	-scratches easily -limited choice of tints
Plastic	-stronger -more choice of tints than polycarbonate -lightweight (is only 3% heavier than polycarbonate) -sheds metal splash and spatter the best	-scratches easily -limited choice in tints

What should I know about the fit and care of safety glasses?

Fit

- Ensure your safety glasses fit properly. Eye size, bridge size and temple length all vary.

- Wear safety glasses so that the temples fit comfortably over the ears. The frame should be as close to the face as possible and adequately supported by the bridge of the nose.

Care

Safety glasses need maintenance.

- Clean your safety glasses daily. Follow the manufacturer's instructions. Avoid rough handling that can scratch lenses.
- Scratches impair vision and can weaken lenses.
- Store your safety glasses in a clean, dry place where they cannot fall or be stepped on. Keep them in a case when they are not being worn.
- Replace scratched, pitted, broken, bent or ill-fitting glasses. Damaged glasses interfere with vision and do not provide protection.
- Replace damaged parts only with identical parts from the original manufacturer to ensure the same safety rating.

Workplace Housekeeping - Basic Guide

Why should we pay attention to housekeeping at work?

Effective housekeeping can eliminate some workplace hazards and help get a job done safely and properly. Poor housekeeping can frequently contribute to accidents by hiding hazards that cause injuries. If the sight of paper, debris, clutter and spills is accepted as normal, then other more serious health and safety hazards may be taken for granted.

Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly; maintaining halls and floors free of slip and trip hazards; and removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas. It also requires paying attention to important details such as the layout of the whole workplace, aisle marking, the adequacy of storage facilities, and maintenance. Good housekeeping is also a basic part of accident and fire prevention.

Effective housekeeping is an ongoing operation: it is not a hit-and-miss cleanup done occasionally. Periodic "panic" cleanups are costly and ineffective in reducing accidents.

What is the purpose of workplace housekeeping?

Poor housekeeping can be a cause of accidents, such as:

- tripping over loose objects on floors, stairs and platforms
- being hit by falling objects
- slipping on greasy, wet or dirty surfaces
- striking against projecting, poorly stacked items or misplaced material
- cutting, puncturing, or tearing the skin of hands or other parts of the body on projecting nails, wire or steel strapping

To avoid these hazards, a workplace must "maintain" order throughout a workday. Although this effort requires a great deal of management and planning, the benefits are many.

What are some benefits of good housekeeping practices?

Effective housekeeping results in:

- reduced handling to ease the flow of materials
- fewer tripping and slipping accidents in clutter-free and spill-free work areas
- decreased fire hazards

- lower student exposure to hazardous substances
- better control of tools and materials
- more efficient equipment cleanup and maintenance
- better hygienic conditions leading to improved health
- more effective use of space
- reduced property damage by improving preventive maintenance

Hand Tools – General Safety Tips

What should you do before using hand tools?

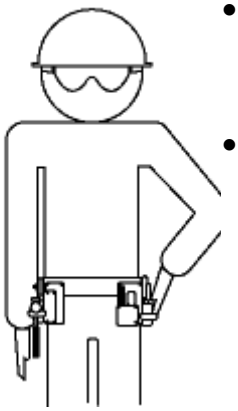
Hand tools can be dangerous if not used properly.

- Read the specific tool safety sheet carefully.
- Before operating any tool or machine, competency must be displayed to the teacher and be signed off by the teacher in the equipment passport.
- Make sure you understand instructions before attempting to use any tool or machine. Ask questions of your teacher if you have any doubts about doing the work safely.

What are some basic tips when using hand tools?

- Select the right tool for the job. Substitutes increase the chance of having an accident.
- Use tools designed to allow wrist to stay straight. Avoid using hand tools with your wrist bent.
- Use good quality tools.
- Keep tools in good condition at all times.
- Inspect tools for defects before use.
- Keep cutting tools sharp and cover sharp edges with suitable covering to protect the tool and to prevent injuries from unintended contact.
- Do not use cracked, splintered, or broken handles on files, hammers, screwdrivers, or sledges.
- Ensure that the handles of tools like hammers fit tightly into the head of the tool.
- Pull on a wrench or pliers. Never push unless you hold the tool with your palm open.

- Tools placed on benches should have sharp ends pointed away from bench edges. Handles should not extend over the edge of the bench top.
- Maintain tools carefully. Keep them clean and dry, and store them properly after each use.
- Carry tools in a sturdy toolbox.
- Wear safety glasses and well-fitting gloves appropriate for the hazards to which you may be exposed when doing various tasks.



- Keep the work environment clean and tidy to avoid clutter which may cause accidents
- Use a heavy belt or apron and hang tools at your sides, not behind your back

What should I avoid when using hand tools?

- Do not use tools for jobs they are not intended to do. For example, do not use a slot screwdriver as a chisel; pry bar, wedge or punch or wrenches as hammers.
- Do not apply excessive force or pressure on tools.
- Do not cut towards yourself when using cutting tools.
- Do not hold the stock in the palm of your hand when using a cutting tool or a screwdriver.
- Do not wear bulky gloves to operate hand tools.
- Do not throw tools. Hand them, handle first, directly to other workers.
- Do not carry tools in a way that interferes with using both hands on a ladder, while climbing on a structure, or when doing any hazardous work. If working on a ladder or scaffold, tools should be raised and lowered using a bucket and hand line.
- Do not carry a sharp tool in your pocket.

Woodworking Machines - General Safety Tips

What should you do before using woodworking machines?

Woodworking machines and tools can be dangerous if not used properly.

- Read the specific machine safety sheet carefully.
- Before operating any tool or machine, competency must be displayed to the teacher and be signed off by the teacher in the equipment passport.
- Make sure you understand instructions before attempting to use any tool or machine. Ask questions of your teacher if you have any doubts about doing the work safely.

What safety procedures should you follow when using woodworking machines?

- Always wear safety glasses
- Wear dust masks when required.
- Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the woodworking area. If you have trouble hearing someone speak from three feet away, the noise level from the machine is too high. Damage to hearing may occur.
- Use gloves to protect hands from splinters when handling wood but do not wear them near rotating blades and other machinery parts where the gloves can catch.
- Make sure the guard is in position, is in good working condition, and guards the machine adequately before operating any equipment or machine. Check and adjust all other safety devices.
- Check that keys and adjusting wrenches are removed from the machine before turning on the power.
- Inspect stock for nails or other materials before cutting, planing, routing or carrying out similar activities.
- Make sure that all machines have start and stop buttons within easy and convenient reach of an operator.
- Ensure that all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely, not forced.
- Turn the power off and unplug the power cord (or lock out the power source) before inspecting, changing, cleaning, adjusting or repairing a blade or a machine. Also turn the power off when discussing the work.
- Use a "push stick" to push material into the cutting area. Jigs are also useful in keeping hands safe during cutting procedures. Keep hands out of the line of the cutting blade.
- Clamp down and secure all work pieces when drilling or milling.
- Ensure that the floor space around the equipment is sufficient to enable you to machine the size of work piece being processed safely without bumping into other students or equipment.

- Woodworking machines should be fitted with efficient and well-maintained exhaust ventilation systems to remove sawdust or chips that are produced.
- Electric power cords should be above head level or in the floor in such a way that they are not tripping hazards.
- Keep work area free of clutter, clean, well swept, and well lit. Spills should be cleaned up immediately. Floor areas should be level and non-slip. Good housekeeping practices and workplace design will reduce the number of injuries and accidents from slips, trips, and falls.

What should you avoid when working with woodworking machines?

- Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewelry that can become entangled with moving parts.
- Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the cutting tool or blade.
- Do not remove sawdust or cuttings from the cutting head by hand while a machine is running. Use a stick or brush when the machine has stopped moving.
- Do not use compressed air to remove sawdust, turnings, etc. from machines or clothing.
- Do not leave machines running unattended (unless they are designed and intended to be operated while unattended). Do not leave a machine until the power off is turned off and the machine comes to a complete stop.
- Do not try to free a stalled blade before turning the power off.
- Do not distract or startle an operator while he or she is using woodworking equipment.
- Horse play should be prohibited. It can lead to injuries.

Push Sticks

When should you use push sticks?

Push sticks or push blocks should be used when operating standard woodworking machinery, including table saws, band saws, radial arm saws, jointers and shapers. These sticks protect the hand while allowing good hand control of the stock as it is pushed through the cutting head or blade. Push blocks for Jointers should be constructed for two-handed positioning.

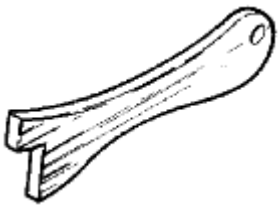
What are some features of a push block?

Hold-down push blocks should:

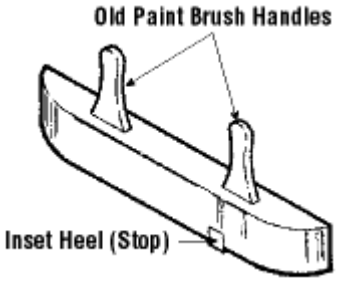
- be rigid
- enable the operator to protect both hands
- allow the operator to exert a firm and steady pressure on the work piece.

The following are samples of push blocks.

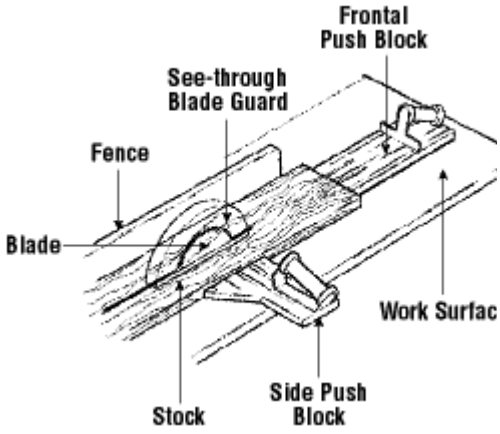
1. Simple push sticks are useful on a table saw when distance between the blade and fence is narrow.



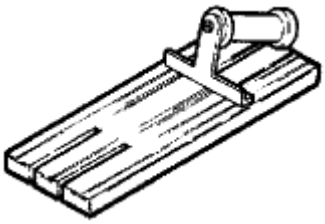
Simple push stick useful on table saw when distance between the blade and fence is narrow.



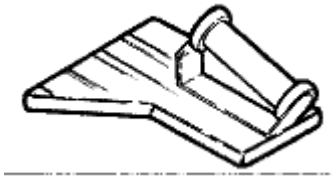
Double-handled hold-down push block



Use of two push blocks on single application



Frontal Push Block



Side Push Block

Band Saws

What should you do before using a band saw?

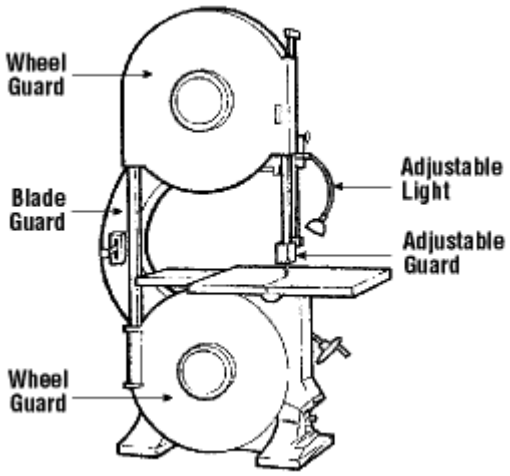
Band saws can be dangerous if not used properly.

- Read “General Safety Tips” carefully.
- Before operating any tool or machine, competency must be displayed to the teacher and be signed off by the teacher in the equipment passport.
- Make sure you understand instructions before attempting to use any tool or machine. Ask questions of your teacher if you have any doubts about doing the work safely.

What safety procedures should you follow when using band saws?

- Wear safety glasses.
- Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the woodworking area.
- Make sure all guards are in place and properly adjusted. Ensure all band wheels are enclosed.
- Adjust blade guard height to about 3 mm or 1/8 inch above the top of the material being cut.
- Ensure the blade is tracking correctly and runs freely in and against the upper and lower guide rollers.
- Ensure the blade is under proper tension. A band saw equipped with automatic tension control is desirable.
- Use band saw blades that are sharp, properly set and otherwise suitable for the job (e.g., the right tooth pitch; tooth form; blade width).
- Hold stock firmly and flat on the table to prevent the stock from turning and drawing your fingers against the blade. Keep hands braced against the table.
- Use a push stick when you remove cut pieces from between the fence and saw blade or when your hands are close to the blade. Keep your hands on either side of the blade - not in line with the cutting line and the blade.

- Make release (relief) cuts before tight curves when doing intricate scroll-type work.
- Keep the floor around a band saw clean and free of obstructions or clutter.



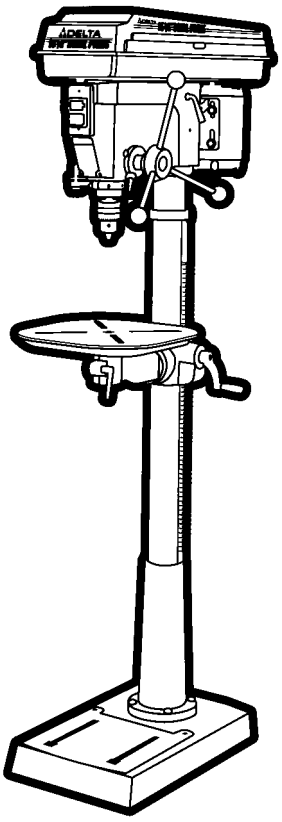
What should you avoid when working with band saws?

- Do not use excessive force when pushing the wood past the blade.
- Do not back the stock away from the blade while the saw is in motion if the work piece binds or pinches on the blade.
- Do not stop a band saw by thrusting stock against the cutting edge or the side of a blade immediately after the power has been shut off.
- Do not remove sawdust or cuttings from the table by hand or with compressed air. Use a stick or brush only after blade has stopped.
- Do not leave a saw running unattended. Turn off the power and make sure the machine has stopped running before leaving the area.

Drill Presses

What should you do before using Drill Presses?

Drill Presses can be dangerous if not used properly.



- Read “General Safety Tips” carefully.
- Before operating any tool or machine, competency must be displayed to the teacher and be signed off by the teacher in the equipment passport.
- Make sure you understand instructions before attempting to use any tool or machine. Ask questions of your instructor if you have any doubts about doing the work safely.
- Clamp stock before drilling.

What safety procedures should you follow when using Drill Presses?

- Wear safety glasses.
- Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the metal manufacturing area.
- Remove all wrenches and tools used in the set-up from the table.

What should you avoid when using Drill Presses?

- Do not leave machine running unattended. Shut off the power and make sure that the spindle has stopped revolving.

Sanders

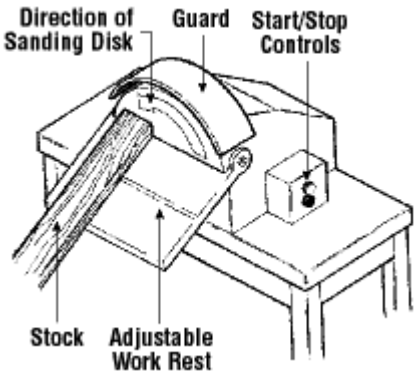
What should you do before using sanders?

Sanders can be dangerous if not used properly.

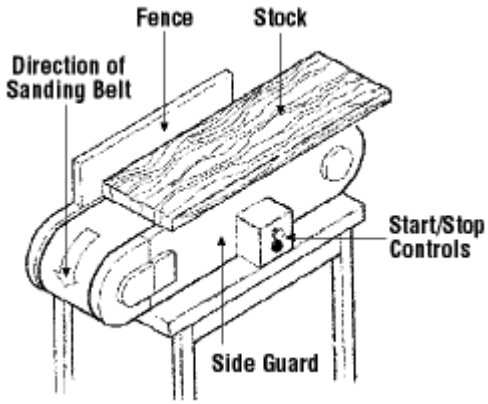
- Read “General Safety Tips” carefully.
- Before operating any tool or machine, competency must be displayed to the teacher and be signed off by the teacher in the equipment passport.
- Make sure you understand instructions before attempting to use any tool or machine. Ask questions of your instructor if you have any doubts about doing the work safely.

What safety procedures should you follow when using sanders?

- Wear safety glasses.
- Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the wood manufacturing area.
- Use sanders with the ventilation turned on.
- Wear respiratory protection (e.g., dust masks) where required, during sanding operations and clean up.
- Keep hands away from the abrasive surface.
- Hold small or thin pieces of stock in a jig or holding device to prevent injuries to the fingers or hands.
- Inspect abrasive belts before using them. Report to teacher if belts are worn, frayed, or excessively worn in spots.
- Sand on the downward side of a disc sander so that the wood is driven onto the table by the machine's rotation.



- Adjust work rests on sanders to provide minimum clearance between the belt and the rest. The work rest should be secured properly.



What should you avoid when using sanders?

- Do not sand small or thin hand-held work pieces.
- Do not wear loose clothing or jewelry while using revolving power tools. Tie back long hair or wear appropriate hair protection. These measures will prevent hair, clothing, or jewelry (like dangling neck chains) from being caught and pulled by sander belts and pulleys that are in motion.
- Do not operate sanders without the exhaust system operating.
- Do not operate sanders unless adequately guarded.
- Do not operate sanders unless the work rest is properly adjusted.

Table Saws

What should you do before using table saws?

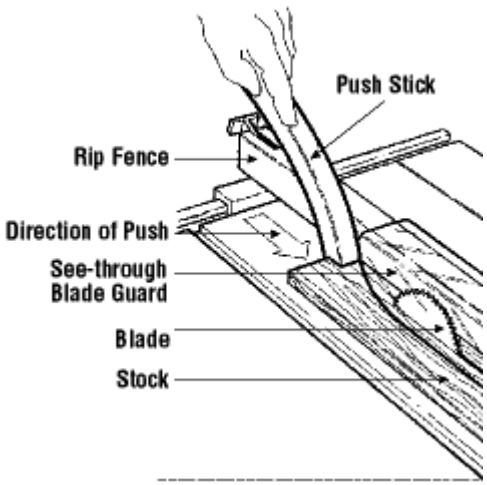
Table saws can be dangerous if not used properly.

- Read “General Safety Tips” carefully.
- Before operating any tool or machine, competency must be displayed to the teacher and be signed off by the teacher in the equipment passport.
- Make sure you understand instructions before attempting to use any tool or machine. Ask questions of your teacher if you have any doubts about doing the work safely.

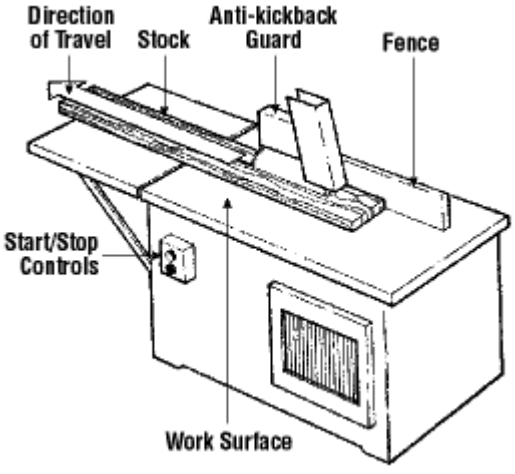
What safety procedures should you follow when using table saws?

- Wear safety glasses.
- Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the wood manufacturing area.
- Choose proper blades for the type of work being done.
- Keep blades clean, sharp, and properly set so that they will cut freely without having to force the work piece against the blade.
- Use the guards provided with the saw or ones designed for use with the saw that you are using. Keep them in place and in good working condition.
- Use a guard high enough to cover the part of the blade rising above the stock and wide enough to cover the blade when it is tilted.

- Ensure that the fence is locked in position after the desired width has been set.
- Hold the work piece firmly down on the table and against the fence when pushing the wood through.
- Ensure that there is adequate support to hold a work piece; use extension tables or roller supports at the side or back for larger pieces. If an assistant is at the back (outfeed) end of the saw, an extension table should be in place so the back edge is about 1.2 m (4 ft) from the saw blade. The assistant should wait for the work piece to reach the edge of the extension table and should not reach toward the saw blade.



- Feed stock into the blade against the direction of its rotation.
- Move the rip fence out of the way when cross cutting. Never use it as a cut off gauge.
- Use a push stick when ripping narrow or short stock (e.g., when the fence is set less than about 15 cm (6 in) from the blade; when the piece is less than 30 cm (12 in) long or when the last 30 cm (12 in) of a longer piece is being cut).
- Keep hands out of the line of a saw blade.
- Use guard with a spreader (riving knife) and anti-kickback fingers for all ripping or cross cutting operations.
- Keep the body and face to one side of the saw blade out of the line of a possible kickback.
- Provide adequate support to the rear and sides of a saw table for wide or long stock.
- Be careful when waxing, cleaning, or servicing the table. Shut off and unplug (or lock out) a saw before doing any work on the saw.
- Keep area clean and clutter-free. Operate machines in a non-congested, well-lit area.
- Use the proper sawdust exhaust systems as required by operation.



What should you avoid when working with table saws?

Do not saw freehand. Always hold the stock firmly against the mitre gauge or a rip fence to position and guide the cut.

- Do not reach around and over moving blades.
- Do not feed the work piece faster than the saw can accept.
- Do not leave a saw running unattended. Turn off the power and make sure the machine has stopped running before leaving the area.