

Woodworking Machine Safety Fact Sheet

HS24-001A (01-24)

Woodworking machines offer skilled craftsmen power and precision when transforming raw materials into unique wood projects. However, these tools also come with potential hazards that require workers to prioritize safety in every step of the woodworking process. These guidelines can help ensure that woodworkers and those nearby are protected and remain injury-free.



Hazards

Woodworking machines include a wide range of tools, from table saws and routers, to drill presses and sanders. Each of these tools poses risks if not used properly or if safety precautions are not followed. It is important to be aware of the following hazards so that proper safety measures can be taken to reduce the risks.

- **Cuts and amputations.** Woodworking tools have sharp blades or cutting edges that can cause severe cuts or amputations if they come into contact with body parts. Improper handling, lack of focus, or using tools without proper guards can increase the risk of these injuries.
- **Flying debris.** When using power tools, wood chips, splinters, or other debris can be ejected at high speeds. These flying objects can cause eye injuries or cuts if they come

into contact with unprotected eyes or skin.

- **Strains and sprains.** Woodworking often involves heavy lifting, repetitive motions, and awkward postures. These activities can lead to strains, sprains, or [musculoskeletal disorders if proper ergonomics and lifting techniques](#) are not followed.
- **Electrical hazards.** Power tools can pose electrical hazards if not handled correctly. Faulty wiring, improper grounding, or using tools in wet conditions can increase the risk of electric shock or electrocution.
- **Noise exposure.** Woodworking machines can generate loud noise levels, which can lead to hearing loss or other hearing-related issues if [proper hearing protection](#) is not worn.
- **Dust and fume exposure.** Woodworking generates a large amount

of sawdust, which can pose respiratory hazards if inhaled. Also, certain types of wood, finishes, or adhesives used in woodworking can release harmful fumes or chemicals that can cause lung irritation or other health issues if proper ventilation or respiratory protection is not used.

- **Fire and explosion risks.** Woodworking involves flammable materials, such as wood dust, solvents, or finishes. If not handled or stored properly, these materials can pose fire or explosion risks.

Safety standards

The Occupational Safety and Health Administration (OSHA) provides standards and regulations for the safe use of woodworking tools on the job. These standards are outlined in OSHA's general industry standards, specifically in [29 Code of Federal Regulations \(CFR\) 1910 Subpart P - Hand and Portable Powered Tools and Other Hand-Held Equipment](#). This subpart covers a wide range of hand and power tools, including woodworking tools, and sets forth requirements for their safe use, maintenance, and guarding.

Compliance with these standards helps ensure a safe and healthy workplace and reduces the risk of accidents and injuries. Some key OSHA standards related to woodworking tools include:

- **Guarding.** OSHA requires that all woodworking machines be equipped with appropriate guards to protect operators from contact with moving parts. These

guards must be in place and functioning correctly to prevent accidental injuries.

- **Personal protective equipment (PPE).** OSHA requires the use of PPE, such as safety glasses or goggles, hearing protection, and dust masks to protect workers from potential woodworking hazards.
- **Machine maintenance.** OSHA requires regular inspections, maintenance, and repair of woodworking machines to ensure their safe operation. This includes checking and adjusting machine guards, grounding equipment, removing keys, and adjusting wrenches before starting machines.
- **Training.** OSHA stresses the importance of proper training and education for workers who use woodworking tools. Employers are responsible for providing training on safe work practices, machine operation, and hazards to ensure workers are competent and knowledgeable in using these tools.



Pre-operational steps

Woodworking can be dangerous without the knowledge and precautions needed to ensure a safe experience. Before beginning a woodworking project:

- Only use woodworking machines you have been trained to use properly and safely.
- Read the owner's manual carefully. Make sure you understand the instructions before attempting to use any woodworking equipment.
- Ask questions from a trained supervisor if you have any doubts about doing the work safely.



Safety practices

Make a daily commitment to safety by following these best practices and precautions when using woodworking tools:

- **Protect your vision.**
Always wear safety glasses or goggles to shield your eyes from dust, particles, or flying debris.
- **Wear a dust mask.**
Safeguard your health by wearing dust masks or respirators during wood sanding or cutting operations that create large quantities of particulates.

- **Use hearing protection.**
Woodworking areas can be noisy. Understand [the importance of hearing protection](#) and choose appropriate [hearing protection based on the level and frequency of noise exposure](#).
- **Use gloves.**
Protect your hands from splinters, cuts, and scrapes when handling wood, but avoid wearing gloves near rotating blades or machinery parts that could catch them.
- **Wear protective shoes.**
Wear sturdy footwear designed to protect against falling objects.
- **Dress for safety.**
Wear snug-fitting clothes to reduce the chances of becoming entangled in moving parts. Avoid neckties, rings, bracelets, or any jewelry that could get trapped in moving machinery.
- **Check the machine guarding.**
Make sure all guards are in position, functioning correctly, and are adequately protecting you. Regularly check and adjust all other safety devices.
- **Ground equipment.**
Make sure all machines are properly grounded before use to prevent electrical hazards.
- **Remove keys and wrenches.**
Before powering on any machine, check that all keys and adjusting wrenches are removed.

- **Inspect the wood for hidden materials.**

Before cutting, planing, routing, or carrying out similar activities, carefully inspect your stock for hidden metal objects like screws or nails. These materials can ruin your cutting tools and injure you if they fly off during the cutting or sanding process.

- **Keep the start and stop buttons nearby.**

Make sure all machines have start and stop buttons within easy and convenient reach of an operator. Start buttons should be protected so that accidental contact will not start the machine. A collar around the button one-eighth to one-fourth inch above the button is recommended.

- **Keep tools sharp.**

Ensure that all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely and will not have to be forced.

- **Power off and on safely.**

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 “push sticks” and jigs.**

Use a “push stick” to push material into the cutting area. Jigs, such as templates used for repetitive tasks in measuring, cutting, and drilling, are also useful in keeping hands safe during woodworking procedures. Keep your hands out of the line of the cutting blade.

- **Secure your work.**

Clamp down and secure your workpieces when drilling or milling.



- **Use good lighting.**

Ensure clear visibility of your workpiece, cutting blades, and machine controls. Position lighting sources to avoid glare or reflections that could hinder visibility or cause distractions.

- **Give yourself space.**

Ensure there is enough floor space around the equipment to allow for safe machining of your workpieces without colliding with other workers or machinery.

- **Use and maintain ventilation systems.**

Woodworking machines should be fitted with efficient and well-maintained local exhaust ventilation systems to remove the sawdust or wood chips that are produced.

- **Control electrical cords.**

Position electric power cords above head level or secure them on the floor to prevent tripping and other accidents.

- **Maintain a clean work area.**

A clean, clutter-free work area provides a safer work environment. Clean up spills immediately. Ensure your floor is level and non-slip. Good housekeeping practices and workplace design can reduce injuries and accidents from slips, trips, and falls.

- **Avoid awkward hand positions.**
A sudden slip could cause your hand to move into the cutting tool or blade.
- **Use care when cleaning blades.**
Never attempt to remove sawdust or cuttings from the cutting head while the machine is running. Wait until the machine has come to a complete stop, then use a stick or brush to clear away debris. Never try to free a stalled blade before turning off the power.
- **Avoid using compressed air.**
Using compressed air to remove sawdust or turnings from machines or clothing can add a cloud of fine particles to the air, which can cause health problems and fire hazards. Also, compressed air can push sawdust deeper into the machine's components causing equipment damage.
- **Never leave machines running unattended.**
Unless machines are specifically designed to be left running at all times, never leave machines running unattended. Always turn off the power switch and wait for the machine to come to a complete stop before leaving.
- **Avoid distractions.**
Focus on the task at hand and avoid distractions such as talking on the phone, listening to loud music, or engaging in conversations that take your attention away from the woodworking process.
- **Report any hazards or malfunctions.**
If you notice any safety hazards or malfunctions with woodworking machines, report them immediately to your supervisor or the appropriate authority. Do not attempt to use or repair faulty equipment.

Emergency procedures

In the event of an emergency or accident while using woodworking machines, follow these procedures:

- **Stop the machine.**
If an accident occurs, immediately turn off the machine and unplug it from the power source.
- **Assess the situation.**
Determine the severity of the injury or emergency and provide first aid or call for medical assistance as needed.
- **Report the incident.**
Notify your supervisor or the appropriate authority about the accident or injury.
- **Secure the area.**
If necessary, secure the area to prevent further accidents or injuries.
- **Review and learn from the incident.**
Conduct a thorough investigation of the incident to identify the root cause and implement corrective actions to prevent similar incidents in the future.



Woodworking machines are powerful and efficient tools for craftsmen. However, it is crucial to prioritize safety when using these machines to prevent accidents, injuries, and long-term health issues. By following proper safety practices, adhering to OSHA standards, and staying vigilant, woodworkers can enjoy their craft while minimizing risks and ensuring a safe working environment.

For more information on workplace safety training or free, confidential onsite or virtual OSHA consultation, contact 800-242-7031, option 2, or SafetyTraining@tdi.texas.gov.



www.txafetyatwork.com

1-800-252-7031, Option 2

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