

To The Point About Power Tool Safety

FACT SHEET

LENGTH: 10 MINUTES

PRODUCTION YEAR: 2026

PROGRAM SYNOPSIS:

Our workplace is full of hazards, hazards that can hurt us or kill us. Controlling these hazards and preventing injuries is the point of our safety and health program. One such hazard is the one presented by the unsafe use of power tools. Ensuring that workers use power tools in a safe manner can prevent injuries and save lives. This program examines the potential causes of injuries related to the use of drills, saws, grinders, sanders, and other power tools. When safe work practices are followed, injuries are prevented.

PROGRAM OBJECTIVES:

After watching the program, the participant will be able to explain the following:

- Steps to take before using a power tool;
- The types of PPE needed;
- The importance of inspecting the tools;
- Being aware of the cutting path and kickback;
- The safe operation of drills and battery-operated tools.

INSTRUCTIONAL CONTENT:

INTRODUCTION

- Our workplace is full of hazards, hazards that can hurt us or kill us. Controlling these hazards and preventing injuries is the point of our safety and health program. One such hazard is the one presented by the unsafe use of power tools.
- Ensuring that workers use power tools in a safe manner can prevent injuries and save lives. That is the point of our facility's safety policies regarding the use of power tools and that is the point of this program. So, pay close attention as we get to the point about power tool safety.
- Dull blades and drill bits, unguarded saw blades, defective power cords or tools, and operator inattention are all potential causes of injury related to the use of drills, saws, grinders, sanders, and other power tools.
- These powerful instruments have the potential to be very dangerous, so it is critical that workers remain focused on the task at hand and take all necessary precautions to avoid injuries during use.

PREPARING TO USE A POWER TOOL

- Safe power tool use begins with you, the tool operator. When preparing to use any power tool, make it a point to understand its potential hazards and the precautions that must be taken to control them.
- Many hazards can be eliminated by simply following good housekeeping practices. Keeping your tools and work materials well organized and stored properly reduces the potential for injury while ensuring you can find the proper tool when needed.
- Avoiding injury while using power tools requires an ability to stay focused on the task at hand.

PERSONAL PROTECTIVE EQUIPMENT

- When preparing to use a power tool, you must also consider what personal protective equipment, or "PPE," may be required.
- At a minimum, power tool operators should wear safety glasses with side shields to protect their eyes from airborne particles generated by the tool.
- When using grinders and other tools that disperse large amounts of flying debris, a face shield should also be worn in conjunction with safety eyewear.
- A hard hat and safety footwear may also be required depending on the work environment where the power tool will be used.
- Power tools can produce a harmful level of noise. For this reason, earplugs or earmuffs should be worn when using power tools.
- Be aware that some cutting, sanding, and grinding operations require respiratory protection in the form of a dust mask or respirator.
- The point of wearing PPE is to prevent injury. Be sure to ask your supervisor if you are unsure about the appropriate PPE for the task you intend to perform.

INSPECTING YOUR EQUIPMENT/TOOLS

- After selecting and donning the appropriate personal protective equipment, make it a point to inspect the power tool you intend to use.
- Verify that the tool's housing doesn't have cracks and make sure the switches aren't loose or damaged.
- The cords on power tools should be inspected for defects as well as any extension cords to be used.
- If the cord is designed to have a ground pin, make sure it is in place and is not loose, bent, or broken.

- A ground fault circuit interrupter (GFCI) should be used when using power tools and extension cords, especially when working in damp or wet areas.
- If you are using a pneumatic tool, inspect the hose for cracks or other damage. Also, check the air fittings and couplings. They should fit snugly in the hose and be clamped securely with an approved clamp.
- Be aware that if your pneumatic equipment has damaged, loose, or improper fittings, the air hose can begin whipping suddenly and violently if a connection blows out.
- Never assume any power tool is safe to use until you have performed a pre-use inspection.
- When a defective or damaged tool is discovered, follow your organization's protocols for removing it from service so it can be repaired or replaced.

BE AWARE OF CUTTING PATH

- Most serious power tool injuries involve some type of cutting tool. To prevent these types of injuries, power tool operators must make a point of being constantly aware of the placement of their hands and other body parts relative to the power tool's action and the blade's path of travel.
- Many saws and other cutting tools are equipped with guards that protect your hands from contacting the blade. Make sure the guard is in place and functioning properly. Never tie back, remove or otherwise defeat these types of guards.
- To keep guards functioning properly, you should clean wood shavings, sawdust, and other debris from the tool and guard regularly. Be sure to unplug the tool before performing this or other maintenance.
- It is impossible to completely guard the blade of any saw, especially the portion of the blade that protrudes from the underside of the material.
- This is why it is so important to always be aware of where your hands and other body parts are placed and to think ahead to consider the tool's path of travel.

KICKBACK

- One hazard that you must consider when using a circular saw is the potential for "kickback."
- Kickback can occur when the blade binds up in the material being cut and the power of the tool thrusts the saw toward your body.
- Precautions to take to prevent the risk of a kickback include making sure to use the proper blade for the material being cut, sharpening or replacing the blade if the saw becomes increasingly difficult to control, allowing the blade to get up to full speed before making a cut, and changing cutting directions gradually, so the blade doesn't get caught in the material.

SAFE OPERATION OF DRILLS

- When using a drill, a common mistake is holding onto the backside of the material being drilled. This places your free hand at risk of a serious injury when the drill bit exits the material being drilled.
- When drilling, avoid applying excessive pressure on the bit, which can cause it to break. The bit can become airborne with great velocity, causing injury, and the sudden release of force can cause impact injuries to the hands and face.
- Making sure your drill bits are sharp by sharpening or replacing them regularly will alleviate the need to press down too hard on them.
- Also, applying too much force to start the bit into the material can cause the drill to slip. Use a punch to make a small hole or indentation in the material to hold the bit in place as it begins its bore.
- Always be prepared for the bit to bind into the material. Hold onto the drill firmly to reduce the risk of it torquing out of your hands, and position your body so that the drill won't strike you should this occur.

BATTERY-OPERATED TOOLS

- Many tools in the workplace today are powered by batteries. Always remember that these convenient and portable tools are just as powerful and just as dangerous as their corded counterparts.
- The same safety precautions used for corded power tools should also be applied to battery-powered power tools.
- In addition, make sure to only use the battery specified by the manufacturer when using battery-powered tools, and only use a charger designed for that specific battery to recharge it.
- Remove the battery when storing the tool for extended periods of time. Also, remove the battery before making adjustments, adding accessories, or performing maintenance.
- Store battery packs away from screws, tools, or other metal objects that could contact the battery terminals and ignite a fire.

PROPER CARE & MAINTENANCE

- No matter what type of power tool you use, proper care and maintenance is critical to make them last longer and help prevent injuries by keeping the tool in good working order.
- When unplugging a tool from an outlet, remove the plug by hand. Don't yank the cord. Also, never carry a power tool by its cord. This can damage the cord and connections.

- When you have completed your task with a tool, clean it and put it in its proper storage location so it will be ready the next time you need it.

CONCLUSION

- In this program, we have provided an overview of safe work practices that should be followed when using drills, saws, and other power tools. Operating power tools safely can prevent serious injuries such as lacerations and amputations.
- After all, preventing injuries is the point of our safety and health program, which is why you must make it a point to be safe.

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ANSWERS TO THE REVIEW QUIZ

1. a

2. b

3. b

4. a

5. a

6. a

7. a

8. b

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REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name _____ Date _____

1. When preparing to use any power tool, make it a point to understand its potential hazards and the precautions that must be taken to control them.
 - a. True
 - b. False
2. When using grinders and other tools that disperse large amounts of flying debris, you only need to wear safety glasses.
 - a. True
 - b. False
3. When a defective or damaged tool is discovered, do the best you can to repair it yourself.
 - a. True
 - b. False
4. To keep guards functioning properly, you should clean wood shavings, sawdust, and other debris from the tool and guard regularly.
 - a. True
 - b. False
5. Kickback can occur when the blade binds up in the material being cut and the power of the tool thrusts the saw toward your body.
 - a. True
 - b. False
6. Use a punch to make a small hole or indentation in the material to hold the bit in place as it begins its bore.
 - a. True
 - b. False
7. Make sure to only use the battery specified by the manufacturer when using battery-powered tools, and only use a charger designed for that specific battery to recharge it.
 - a. True
 - b. False
8. When unplugging a tool from an outlet, yank the plug out of the socket quickly by hand.
 - a. True
 - b. False