
Chapter 14 : HAND & PORTABLE POWER TOOLS

INTRODUCTION/OVERVIEW

Tools are such a common part of our lives that it is all too easy to forget that they may pose serious hazards. All tools are manufactured with safety in mind, but tragically a serious accident often occurs before steps are taken to search out and avoid or eliminate tool-related hazards.

In the process of removing or avoiding the hazards, we all must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards from occurring. As employer, **CUNNINGHAM PAVING** is responsible for the safe condition of tools and equipment used by employees. Our employees have the responsibility of properly using and maintaining tools.

This chapter summarizes the basic safety rules we must practice when operating different types of tools so as to avoid the potential hazards hand and portable power tools present. See OSHA 1926.300 for more specific requirements.

BASIC SAFETY PRECAUTIONS

1. Our employees will be trained in the use of all tools. They should understand the potential hazards as well as the safety precautions required to prevent those hazards from occurring.
2. Appropriate personal protective equipment, e.g., safety goggles, gloves, etc., should be worn due to hazards that may be encountered while using portable power tools and hand tools.
3. Safety requires that floors be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand and portable power tools.
4. Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum, or wood will provide for safety.

HAND TOOLS

DEFINITION

Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.



POTENTIAL HAZARDS (EXAMPLES)

1. Using a chisel as a screwdriver may cause the tip of the chisel to break and fly, hitting the user or other employees.
2. If a wooden handle on a tool such as a hammer or an ax is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker.
3. A wrench might slip if its jaws are sprung.
4. Impact tools such as chisels, wedges, or drift pins are unsafe if they have mushroomed heads. The heads might shatter on impact, sending sharp fragments flying.

POWER TOOLS

GENERAL PRECAUTIONS

Power tools can be hazardous when improperly used. Power tool users should observe the following general precautions.

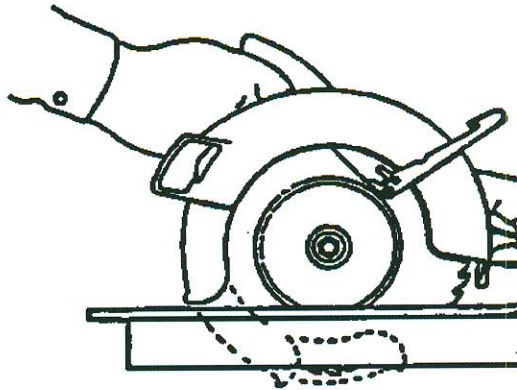
1. Never carry a tool by the cord or hose.
2. Never yank the cord or the hose to disconnect it from the receptacle.
3. Keep cords and hoses away from heat, oil, and sharp edges.
4. Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
5. Keep all observers at a safe distance away from the work area.
6. Secure work with clamps or a vise, freeing both hands to operate the tool.
7. Avoid accidental starting. The worker should not hold a finger on the switch button while carrying a plugged-in tool.

-
8. Maintain tools with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories.
 9. Be sure to keep good footing and maintain good balance.
 10. Wear the proper apparel. Loose clothing, ties, or jewelry can become caught in moving parts.
 11. Remove all damaged portable electric tools from use. Tag them "DEFECTIVE TOOL" and return them to tool crib.

SPECIFIC PRECAUTIONS

Guards

Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees.



Guards, such as the one pictured above, should be provided to protect the operator from the hazards presented by the following components.

1. Point of operation
2. In-running nip points
3. Rotating parts
4. Flying chips and sparks

Safety guards must never be removed when a tool is being used. For example, portable circular saws must be equipped with guards. An upper guard must cover the entire blade of the saw. A retractable lower guard must cover the teeth of the saw, except when it makes

contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work.

Safety Switches

The following hand-held power tools must be equipped with a momentary contact on-off control switch: drills, tappers, fastener drivers, horizontal, vertical and angle grinders with wheels larger than 2 inches in diameter, disc and belt sanders, reciprocating saws, saber saws, and other similar tools. These tools also may be equipped with a lock-on control, provided that a single motion of the same finger or fingers that turn it on can accomplish turnoff.

The following hand-held power tools may be equipped with only a positive on-off control switch: platen sanders, disc sanders with discs 2 inches or less in diameter; grinders with wheels 2 inches or less in diameter; routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks 1/4 inch wide or less.

Other hand-held power tools such as circular saws having a blade diameter greater than 2 inches, chain saws, and percussion tools without positive accessory holding means must be equipped with a constant pressure switch that will shut off the power when the pressure is released.

