

K. Safe Use of Hand Tools and Portable Power Tools

1. Screwdrivers

- a. A screwdriver is the most commonly used and abused tool. The practice of using screwdrivers as punches, wedges, pinch bars, or pry bars shall be discouraged as this practice dulls blades and causes employee injury.
- b. Screwdriver tips shall be selected to fit the screw. Sharp- edged bits will not slip as easily as ones that are dull. Redress tips to original shape and keep them clean.
- c. Always hold work in a vise or lay it on a flat surface to lessen the chance of injury if the screwdriver should slip.
- d. When working near electrical equipment, screwdrivers shall be equipped with insulated handles (some also come with insulated blades).

2. Hammers

Wooden handles shall be straight grained and free of slivers or splinters. Once split, handles shall be replaced. Make sure handles are tightly wedged.

- a. Never strike a hammer with another hammer.
- b. Discard any hammer that shows chips, dents, etc. Redressing is not recommended.
- c. Safety glasses shall be worn while using a hammer or any other striking tool.
- d. Never use a common nail hammer to strike other metal objects such as cold chisels.

3. Punches

Never use a punch with a mushroomed struck face or with a dull, chipped, or deformed point. Punches that are bent, cracked, or chipped shall be discarded. Safety glasses shall be worn while using a punch.

4. Chisels

Choose a chisel only large enough for the job so the blade is used, rather than only the point or corner. Never use chisels with dull blades—the sharper the tool, the better the performance. Chisels that are bent, cracked, or chipped shall be discarded. Re-dress cutting edge or struck end to original contour as needed. When chipping or shearing with a cold chisel, the tool shall be held at an angle that permits one level of the cutting edge to be flat against the shearing plane.

5. Hacksaws

- a. Hacksaws shall be adjusted and tightened in the frame to prevent buckling and breaking, but shall not be tight enough to break off the pins that support the blade. Install blade with teeth pointing forward.
- b. Pressure shall be applied on the forward stroke only. Lift the saw slightly, pulling back lightly in the cut to protect the teeth. Do not bend and twist the blade. Never continue an old cut with a new blade.

6. Files

- a. Select the right file for the job, making sure that it has a secure handle.
- b. Files shall be cleaned only with file-cleaning cards; never by striking. Never use a file as a pry or hammer, as chipping and breaking could result in user injury.
- c. Grasp the file firmly in one hand and use the thumb and forefinger of the other to guide the point.

7. Axes and Hatchets

- a. The cutting edges are designed for cutting wood and equally soft metal. Never strike against metal, stone, or concrete.
- b. Never use an axe or hatchet as a wedge or maul, never strike with the sides, and never use them with loose or damaged handles.
- c. Proper axe grip for a right-handed person is to have the left hand about 3" from the end of the handle and the right hand about $\frac{3}{4}$ of the way up. Reverse hands if left handed.
- d. Sharp, well-honed axes and hatchets are much safer to use because "glancing" is minimized.
- e. Safety glasses and safety shoes shall be worn and clear swinging checked before using axes and hatchets. Axes and hatchets shall be carried with the covers on.

8. Knives

- a. Knives cause more disabling injuries than any other hand tool. The hazards are that the hands may slip from the handle onto the blade or that the knife may strike the body or the free hand. Use knives with handle guards if possible. Knives shall be kept sharp and in their holders, cabinets, or sheaths when not in use; the cutting stroke shall be away from the body.
- b. Do not wipe dirty or oily knives on clothing. To clean, the blade shall be wiped with a towel or cloth with the sharp edge turned away from the wiping hand. Horseplay of any kind (throwing, "fencing," etc.) shall be prohibited.

9. Crowbars

Use the proper kind and size for the job. Never use makeshifts such as pieces of pipe, as they may slip and cause injury. Crowbars shall have a point or toe of such shape that it will grip the object to be moved and a heel to act as a pivot or fulcrum. A block of wood under the heel may prevent slippage and help reduce injuries.

10. Shovels

- a. Shovel edges shall be kept trimmed and handles checked for splinters and cracks. Workers shall wear safety shoes with sturdy soles. They shall have feet well separated to get good balance and spring in the knees. The leg muscle will take much of the load. To reduce the chance of injury, the ball of the foot (not the arch) shall be used to press the shovel into the ground or other material.
- b. Dipping the shovel in water or greasing or waxing the shovel will prevent some materials from sticking.
- c. Gloves shall be worn while using shovels.
- d. When not in use, hang up shovels, stand them against the wall, or keep them in racks or boxes.

11. Box and Socket Wrenches

- a. The use of box and socket wrenches is indicated where a heavy pull is necessary and safety is a consideration. Box and socket wrenches completely encircle the nut, bolt or fitting and grip it at all corners as opposed to two corners gripped by an open end wrench. They will not slip off laterally, and they eliminate the dangers of sprung jaws.
- b. Avoid overloading the capacity of a wrench by using a pipe extension on the handle or strike the handle of a wrench with a hammer. Hammer abuse weakens the metal of a wrench and causes the tool to break. Special heavy duty wrenches are available with handles as long as 3'. Where possible, special penetrating oil shall be used to first loosen tight nuts.

12. Electric Saws

Electric saws shall be equipped with guards above and below the face plate. The lower guard shall be checked frequently to be sure it operates freely and encloses the teeth completely when not cutting. Circular saws shall not be crowded into the work. The motor shall be started and stopped outside the work. At the beginning and end of the stroke or when the teeth are exposed, the operator shall use extra care to keep the body out of the line-of-cut. Saws shall be equipped with "dead man" controls or a trigger switch that shuts off the power when pressure is released.

13. Portable Grinder

- a. Grinding wheels shall be guarded as completely as possible. They shall never be used at greater than their rated speed. To do so may result in the wheel breaking apart due to excessive centrifugal force. Guards shall be adjustable so the operator will be inclined to make the adjustments rather than remove the guard. However, the guard shall be easily removable to facilitate replacement of the wheel. In addition to mechanical guarding, the operator shall wear safety glasses at all times.
- b. Care shall be exercised to protect the grinder from damage.

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- c. Since part of the wheel is exposed, it is important the employee hold the wheel so it does not touch his clothes or body.

14. Air Hoses

- a. Workers shall be warned against disconnecting the air hose from the tool and using it to clean machines or remove dust from clothing. Air used for cleaning shall not exceed 30 psi and workers shall wear safety glasses at all times when using air hoses. Brushing or vacuuming equipment is recommended for removing dust from clothing.
- b. Air shall be shut off before attempting to disconnect the air hose from the air line. Any air pressure inside the line shall be released before disconnecting.