

## Hand Tool Safety

Hammers lose their heads, wrenches slip, sharp edges lacerate hands and fingers, and metal chips fly from mushroomed steel. The results are recorded in accident statistics—but often under another heading than “Hand Tools.” This leads to the common belief that hand tool accidents are not numerous or serious; actually, they cause from 10% to 15% of all lost-time accidents.

**Hammers** – A machinist’s ball, cross or straight peen hammer is not suitable for driving nails; a carpenter’s claw hammer is not suitable for machinist’s work. Soft, nonferrous metal hammers should be provided for striking tempered or case hardened metal. Hammers used solely for driving nails should have a corrugated face, to prevent nails flying.

**Knives** – Cut away, never toward your body. Knives and hand stones used to sharpen them should be equipped with disc guards to protect fingers. A sheath of leather or heavy canvas should be provided when necessary to carry a knife; otherwise, racks for knives should be provided.

**Wrenches** – Use the proper wrench for the job and place it with the jaws in the direction of the pull. Never use a piece of pipe on the wrench for added leverage; if too great a strain is placed on the wrench, the jaws will spread. Wrenches should never be substituted for hammers, crowbars, jimmies. Never attempt to adjust nuts on material fixed in lathes or other machines, while in motion. Stilsons should be used only on round stock, never on nuts. To protect the hands, pull rather than push wrenches.

**Screw drivers** – Like wrenches, screw drivers are often used as general utility tools; many injuries result from their use as wedges, chisels or punches. Screw drivers should be provided with good handles and the points maintained in good condition. Handles of nonconducting material are desirable for use around electrical equipment; additional protection, however, should be provided when working around live equipment. Most injuries occur when the screw driver slips on hand-held work; the work should be held in a vise or securely against a work bench. It is safer to start a screw with a punch so that it does not have to be held with the fingers.

**Chisels–Punches** – Chisels and punches should be selected for size, shape, depth of cut and type of material to be worked on. They should be ground to the proper angle and kept sharp. For safety, it is better that these type tools be a little soft rather than too hard; such tools should be sent out to be sharpened and retempered.

**Files** – Files should have substantial handles. Principal hazard is when files are used on revolving material—as in a lathe; then, a lefthand stroke should be used to minimize the possibility of contact with the head chuck. Because files are extremely hard and brittle, they should not be hammered, used to pry, or

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struck against material to clean them. Serious injuries have resulted from files chipping or breaking under conditions of such abuse.

**Cutting tools** – Pliers and wire cutters should be of ample capacity for the stock to be cut; precautions should be taken to prevent wire and scraps of sheet metal from flying. Hand saws should be selected for the work to be done, and should be kept sharp and well set. Axes and hatchets should be used only by the skilled who are able to swing and place the strokes accurately.

**Lifting tools** – Crow bars and jimmies in good condition are less likely to slip—throwing the worker to the ground or from an elevation. Crow bars should not be used to move railroad cars or open railroad car doors. Lifting jacks should be operated only by skilled mechanics; they should be centered under the load, on a solid footing with all workers keeping in the clear. After the object is lifted, it should be blocked up before any work is done on it.

**Handles** – Handles for hammers, shovels, picks and other tools should be of straight-grained wood, free from splinters, preferably of hickory, ash or maple. An adequate supply of handles should be kept in the tool room, so workers can replace split or broken handles immediately. **Nonsparking tools** – Wherever flammable or explosive gases, dusts, fumes or vapors are present, nonferrous tools should be used. There are bronze and beryllium-copper alloys comparable in hardness to steel. Tools from these materials will give long service and minimize the chances of an explosion.

**Care of tools** – A centralized control system for hand tools is beneficial for larger plants; in smaller plants, a responsible mechanic should be selected to make minor repairs on tools. Scheduled inspection of all hand tools should be made by the foreman or tool room attendant.

**Eye and face protection** – Appropriate eye and/or face protection should be worn when using hand tools. Great American Insurance Company makes no recommendation as to specific manufacturers, however all protective devices should meet American National Standards Institute (ANSI) requirements.

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