



Tool	Proper Uses	Abuse/Misuse
<b>Axes and Hatchets</b>	<p>The double bit axe is usually used to fell, trim or prune trees and to split and cut wood. It is also used for notching and shaping logs and timbers. The single bit axe, in addition to the above uses, is used to drive wood stakes with the striking face.</p> <p>Hatchets are used for cutting, splitting, trimming and hewing, and driving unhardened nails and stakes with the striking face.</p>	<p>The cutting edges of axes and hatchets are designed for cutting wood and equally soft materials. They should never be struck against metal, stone or concrete. The striking faces of hatchets are properly hardened for driving common nails but should never be used to strike chisels, punches, rock drills or other hardened metal tools, or for striking stone or concrete. Never use an axe as a wedge or a maul. Never strike with the sides.</p>
<b>Cold Chisels</b>	<p>Cold chisels have a cutting edge at one end for cutting, shaping and removing metal softer than the cutting edge itself such as cast iron, wrought iron, steel, bronze, copper, etc. and a struck face on the opposite end.</p>	<p>Never use cold chisels for cutting or splitting stone or concrete. Never use a dull chisel or one with a mushroomed head. Never use a blacksmiths' cold chisel with a loose or damaged handle.</p>
<b>Blacksmiths' Punches</b>	<p>Blacksmiths' round punches are designed for drifting holes, aligning and driving pins. Blacksmiths' backing out punches are designed for backing out bolts, rivets and pins.</p>	<p>Never use a punch with a mushroomed struck face or a chipped or deformed point. Never use a punch with a loose or damaged handle.</p>
<b>Hand Punches</b>	<p>Punches are designed to mark metal and other materials softer than the point end, drive and remove pin and rivets, and align holes in different sections of material.</p>	<p>Never use a punch with a mushroomed struck face or with a dull, chipped or deformed point.</p>
<b>Drift Pins</b>	<p>Drift pins are designed for aligning holes in metal.</p>	<p>Never use a drift pin as a punch. Never strike a drift pin if either end is chipped or mushroomed.</p>
<b>Ripping Bar or Wrecking Bar</b>	<p>Bars are heavy steel tools used to lift and move heavy objects and to pry where leverage is needed. They are also used to remove nails and spikes during wrecking operations.</p>	<p>Never use like a striking tool or pound like a chisel. They should not be struck against metal, stone, or concrete. Do not add extensions or stand on bar for extra leverage. Do not use cracked or deformed bars.</p>
<b>Socket Wrenches</b>	<p>Hand Socket wrenches are made in a wide range of sizes and capacities. All have square drives ranging from 1/4" to 1". Drive size is a measure of capacity.</p> <p>Since Detachable Socket wrenches provide an almost endless combination of handles, attachments and sockets, it is possible to assemble a proper tool for almost any type of service within the tool's capacity.</p>	<p>Never use a pipe extension or other form of "cheater" to increase the leverage of any wrench.</p> <p>Select a wrench whose opening exactly fits the nut.</p> <p>If possible, always pull on a wrench handle and adjust your stance to prevent a fall if something lets go.</p> <p>There are three types of Sockets_hand, power and impact_all different in design and hardness.</p> <p>Hand Sockets should never be used on power drive or impact wrenches.</p>

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<b>Box Wrenches</b>	Box wrenches in the regular pattern are designed for general service. The Heavy-Duty and Striking Face patterns are designed for the service indicated. The Electronic Hex Box patterns are designed for the lighter service encountered in electronic, carburetor and ignition work. Ratcheting Box and split box wrenches are for light duty and should not be used in heavy-duty applications.	Never use a hammer on any wrench other than a Striking Face wrench. Use a sledge type hammer.  Never use an extension on the wrench handle.
<b>Adjustable Wrenches</b>	Adjustable wrenches are designed to provide a wide range of capacity in a single tool and are a convenient wrench for service and repairmen, linemen, etc. They are not intended to replace fixed opening wrenches for production or general service work.	Do not use an adjustable wrench to free a "frozen" nut or to final tighten a nut. Never pull on a loosely adjusted wrench. Never use a hammer or extension on this wrench.
<b>Combination Box_Open-End Wrenches</b>	Combination Box_Open-End wrenches are designed for a wide variety of work. Their box opening adds still more to their versatility and strength. The Flare Nut pattern with its hex box opening is especially useful in air conditioning and refrigeration work where tubing terminates on flare nuts. The thinner and slimmer Electronic pattern is designed for work where access and clearance are limited.	Do not use the open end of these wrenches to free a "frozen" nut or final tighten a hex nut. Use the box opening. Never use an extension on the wrench handle.

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<b>Linemen's Side Cutting Pliers</b>	These are heavy-duty tools designed for the professional mechanic engaged in electrical, communications and construction work.	<p><b>BASIC SAFETY RULES WHICH APPLY TO THE USE OF PLIERS</b></p> <ol style="list-style-type: none"> <li>1. Pliers should not be used for cutting hardened wire unless specifically manufactured for this service.</li> <li>2. Never expose pliers to excessive heat. This may draw the temper and ruin the tool.</li> <li>3. Always cut at right angles. Never rock from side to side or bend the wire back and forth against the cutting blades.</li> <li>4. Don't bend stiff wire with light pliers. Needle nose pliers can be damaged by using the tips to bend too large a wire. Use a sturdier tool.</li> <li>5. Never use pliers as a hammer nor hammer on the handles. They may crack or break, or blades may be nicked by such abuse.</li> <li>6. Never extend the length of handles to secure greater leverage. Use a larger pair of pliers or a bolt cutter.</li> <li>7. Pliers should not be used on nuts or bolts. A wrench will do the job better and with less risk of damage to the fastener.</li> <li>8. Oil pliers occasionally. A drop of oil at the hinge will lengthen tool life and assure easy operation.</li> <li>9. Safety glasses should be worn when cutting wire, etc. to protect eyes from being struck by the end of the object being cut.</li> <li>10. <b>WARNING:</b> Ordinary plastic dipped handles are designed for comfort _not_ electrical insulation. Tools having high dielectric insulation are available and are so identified. Do not confuse the two.</li> </ol>
<b>Utility Pliers</b>	These pliers are widely used by plumbers, electricians, auto mechanics and mechanics in the construction and industrial fields. They will grip round, square, flat and hexagonal objects and are capable of applying limited torque without damage to the work.	
<b>Long Nose pliers</b>	Most Long Nose pliers are designed for electrical, telephone and electronic work involving the smaller wire gauges. They will reach into awkward places and perform work difficult with any other tool. Their usefulness, however is not limited to wire work.	
<b>Diagonal Cutting Pliers</b>	Diagonal cutting pliers are designed for electrical, electronic, telephone, general and automotive work involving cutting and skinning wire, cutting and removing cotter pins, nails and other fasteners.	
<b>Flat Nose Pliers</b>	Flat Nose pliers have diverse uses in the electrical, telephone, electronic and other fields. They are extensively used in typewriter repair and assembly work.	
<b>End Cutting Pliers</b>	End cutting pliers are designed for cutting wire, nails, rivets, etc. close to work.	
<b>Slip Joint Pliers</b>	These versatile tools are designed for a wide range of service involving gripping, turning and bending.	

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<p><b>Pipe Tools</b></p>	<p>When using a heavy duty Pipe Wrench, maintain a gap between the back of the hook jaw and the pipe.</p> <p>This concentrates the pressure at the jaw teeth only and produces the maximum gripping force and aids ratcheting action.</p> <p>If possible, always pull rather than push on the pipe wrench handle and maintain a proper stance with feet firm to hold balance.</p> <p>Pipe Wrenches are designed to turn or hold pipe; never use a Pipe Wrench to bend, raise or left a pipe. Select a Pipe Wrench with sufficient capacity and leverage_ never use a pipe extender or "cheater".</p> <p>Pipe cutter wheels that are nicked or otherwise damaged should be replaced.</p> <p>When removing, rapid spinning of the die threading stock is not recommended as this may damage the tool.</p> <p>If there is not enough space to swing the single wheel pipe cutter completely around pipe, then a three or four-wheel cutter should be used.</p> <p>Be certain the cutting wheel is suitable to cut type of pipe material. Thin wheel is suitable for cutting ordinary steel pipe, stout wheel is made to cut cast iron. Other wheels are available for stainless steel, plastic and other materials.</p> <p>Never use hand threading taps in power driven equipment. Never use a spiral reamer on a rotating pipe. The reamer may snag and cause serious bodily injury.</p>	<p>Do not use a Pipe Wrench as a hammer, nor strike a Pipe Wrench with a hammer. Inspect Pipe Wrenches periodically for worn or unsafe parts and replace them.</p> <p>Be certain to use the correct tap size in the hole. It is recommended that the hole be of such size that the thread cut by the tap will be about 75 percent as deep as the thread on the tap.</p> <p>Cast iron can be tapped dry but lubricant should be used with other metals.</p> <p>Do not permit chips to clog flutes as this will prevent tap from turning.</p> <p>Do not attempt to thread hardened steel as this will probably result in a chipped or otherwise damaged die.</p> <p>Do not thread any rod or other cylindrical object that is larger in diameter than the major diameter of the die thread.</p>
<p><b>Screwdrivers</b></p>	<p>Keep the screwdriver handle clean; a greasy handle is apt to cause an accident.</p> <p>Use a screw-holding screwdriver to get screws started in awkward, hard-to-reach areas.</p> <p>Screwdrivers used in the shop are best stored in a rack. This way, the proper selection of the right screwdriver can be quickly made.</p>	<p>Don't use a screwdriver with rounded edges or tips; it will slip and cause damage to the work or yourself.</p> <p>Don't use pliers on the handle of a screwdriver to get extra turning power. A wrench should only be used on the square shank or bolster of a screwdriver that is especially designed for that purpose.</p>

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<p><b>Screwdrivers (Cont'd)</b></p>	<p>Use a ratchet-type screwdriver for speed and comfort when a great number of screws are to be driven.</p> <p>A rounded tip should be redressed with a file; make sure the edges are straight.</p> <p>Use an offset screwdriver in close quarters where a conventional screwdriver cannot be used.</p>	<p>Don't hold the work in one hand while using the screwdriver with the other. If the screwdriver slips out of the slot (we told you to use the right size screwdriver!) you will be most likely to receive a gash on your hand.</p> <p>Don't use a screwdriver for prying, punching, chiseling, scoring, or scraping.</p> <p>Don't use a screwdriver to check a storage battery or to determine if an electrical circuit is live.</p> <p>Don't expose a screwdriver blade to excessive heat as it may reduce the hardness of the blade.</p> <p>Don't use a screwdriver near a live wire or for electrical testing.</p> <p>Don't use a screwdriver with a split or broken handle.</p> <p>Don't use a screwdriver for stirring paint.</p>
<p><b>Snips</b></p>	<p>Use snips for cutting soft metal only. Hard, or hardened metal may damage the cutting edges of the snips.</p> <p>Use the right size and type of snips for the job on hand. Don't try to cut sharp curves with straight cut snips.</p> <p>Avoid springing the blades. This is the result of trying to cut metal that is too thick for the snips you are using, or by trying to cut heavy wire or nails.</p> <p>Use only hand pressure for cutting. Never hammer, or use your foot to get extra pressure on the cutting edges. If you are resorting to such a technique, you are using too small a snip—the metal is too thick for the capacity of the snip.</p> <p>Oil the pivot bolt on the snips occasionally.</p> <p>Sharpen the edge by grinding or filing from outside towards the inside edge. The burr that remains will be removed by slowly closing the snip after it has been sharpened.</p>	<p>Never sharpen the inside ground surface of a snip. You will ruin the cutting action if you do.</p> <p>Never try to sharpen an aviation-type snip. You will remove the serrations and the sheet metal will slip out of the blades when you try cutting.</p> <p>Don't use snips as a hammer, a screwdriver or a pry bar. There are tools for such purposes—use them.</p> <p>Don't dump them in a drawer with other tools. Tools with cutting edges should always be treated with extra respect.</p>

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<b>Snips (Continued)</b>	<p>If the snips you own have locking clips, use them when the tools are not in use.</p> <p>Snips should be carefully put away after use. Wipe the cutting edges with a lightly oiled rag.</p> <p>Wear gloves when working with snips.</p> <p>Keep the nut on the bolt properly adjusted at all times.</p>	
<b>Clamps</b>	<p>Store C-clamps by clamping them in a rack, not in a drawer.</p> <p>Use pads with C-clamps to avoid marring the work.</p> <p>Discard any clamp that has a bent frame or a bent spindle.</p> <p>Keep all moving parts lightly oiled and clean; however, make sure there is no dirt or oil on any part that will come in contact with the work.</p> <p>Make sure swivel at end of the screw is turning freely before using.</p> <p>Avoid using extra large clamps just for the sake of their large throats; instead use deep-throat clamps.</p>	<p>Do not use a wrench, pipe, hammer, or pliers, to gain extra tightening; a wrench should be used only on those clamps especially designed for tightening with a wrench.</p> <p>Never use a C-clamp for hoisting work. Special lifting clamps are made for this purpose.</p> <p>Never use a C-clamp for hoisting or for supporting a scaffold or platform, that may be used to carry people.</p> <p>Do not use C-clamps for securing a load that may be carried over a public highway; vibration may cause the clamps to loosen and the load to break loose.</p>