

PRÉVENTEX

THE PROPER USE OF HAND TOOLS

Préventex

Association paritaire du textile

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Wrenches
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Files

References : Gilles Boivin and
Denis Lincourt,
prevention consultants

There is a wide variety of hand tools in use in our industry. We use them often, to carry out many common tasks, yet we forget that they can be a cause of serious accidents if basic safety rules are not followed. These rules apply to the selection of tools as well as the way we handle and maintain them.

GENERAL RULES

Accidents caused by the use of hand tools can be easily avoided by observing some fundamental safety rules. (See Regulation respecting occupational health and safety (RSST), Articles 227, 228 and 229)

- ◆ Inform employees on proper use of hand tools.
- ◆ Purchase quality tools, appropriate for intended use.
- ◆ Check tools for defects prior to use.
- ◆ Keep tools in good condition, clean and dry.
- ◆ Cover sharp parts of tools when not in use.
- ◆ Use a reinforced belt or apron to carry tools at hip level –do not carry on your back.
- ◆ Store tools correctly after use. Keep area clean and tidy.
- ◆ Do not stand in line with falling objects when working above head level.
- ◆ Wear protective eyewear or a face shield if there is a potential projection hazard.

ERGONOMIC ADVICE

Choose tools with ergonomically designed handles and shafts providing a strong grip. Surfaces should be hard enough to prevent particles from getting stuck into them and waterproof to resist potentially irritating oils or liquids.

Tools handled with one hand should be equipped with a flange to prevent injury in case the hand slips and the tool is dropped.

Two-pronged tools should have a spring device to spread prongs apart after use. Prongs should be distanced enough to prevent palms or fingers from getting caught.

Avoid bending wrists when working with hand tools, or choose tools that can be used with wrists straight.

NEVER:

- ◆ Use excessive force.
- ◆ Work with movement toward you.
- ◆ Hold a part with one hand and a sharp tool in the other.
- ◆ Wear thick gloves to work with hand tools; wear fitted gloves for better control.
- ◆ Throw tools; hand them carefully to a co-worker.
- ◆ Leave tools behind machines with moving parts.
- ◆ Carry tools when climbing up.
- ◆ Carry sharp tools in trouser pockets.
- ◆ Work on switched on electrical devices with tools that do not have an insulated handle or shaft.



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2035, Victoria avenue, suite 203
Saint-Lambert QC J4S 1H1
Telephone : (450) 671-6925
Fax : (450) 671-9267
e-mail : info@preventex.qc.ca
www.preventex.qc.ca

General manager and newsletter editor
Jean-Marc Champoux

Co-chairman (Employers)
Jacques Hamel
Cavalier Textiles inc.

Co-chairman (Unions)
Pierre-Jean Olivier
TUAC/COUTA

Coordination
Lise Laplante

Copy editor
Pierre Bouchard
Indico Communication

Translation
Paule Champoux-Blair

Graphic design
Anne Brissette Graphiste

Printing
Imprimerie For inc.

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- ◆ Use tools that may create flying sparks in an environment where there is an explosion hazard.

WRENCHES

SELECTION

Choose:

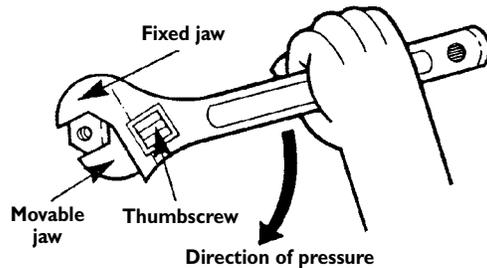
- ◆ A wrench that precisely fits the nut or bolt to be tightened. Using wrenches that are too large or too wide will damage the nut or bolt and may slip.
- ◆ A ring wrench rather than an open end wrench.
- ◆ An open end wrench rather than an adjustable wrench.

USE

Hold wrenches in a way that will prevent injury.

Hold wrenches with handle pointing toward you.

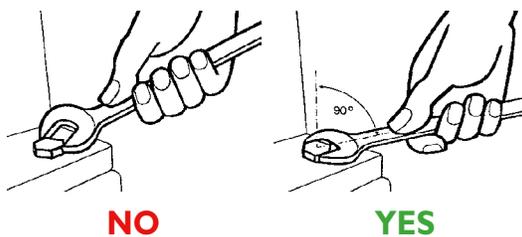
Apply pressure on fixed jaw when turning adjustable wrenches.



Pull on wrenches; do not push on them. If the wrench must be pushed, do so with heel of hand.

Adjust body position and pressure accordingly when applying great force.

Always position the wrench perpendicular to the bolt axis. Never bend the wrench in relation to the axis of the bolt, to avoid slippage.



Adjust the jaws of adjustable wrenches before use.

Use torque wrenches when required to tighten bolts at specific moments.

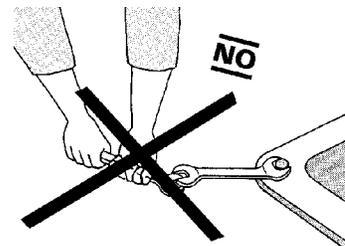
MAINTENANCE

Carefully maintain all tools and adjust jaw openings.

Dispose of damaged wrenches.

NEVER:

- ◆ Hit wrenches with a hammer.
- ◆ Use a wrench on operating machinery.
- ◆ Insert a wedge in a wrench to decrease tolerance.
- ◆ Add a section of pipe to handle to increase torque. (RSST, Art. 232)



DO NOT USE:

- ◆ Wrenches with serrated jaws to tighten or loosen nuts and bolts.
- ◆ Worn-out adjustable wrenches.
- ◆ Pliers instead of a wrench.
- ◆ Wrenches as hammers.
- ◆ So-called universal tools; they may damage nuts and bolts.

SCREWDRIVERS

SELECTION

Choose tools with rectangular handles that are solidly joined to the blade of the screwdriver and equipped with a flange to prevent hand from slipping.

Use screwdrivers with:

- ◆ An insulated handle when working on electrical installations.
- ◆ A handle in good condition.
- ◆ A tip perfectly adapted to the screw.
- ◆ Equipped with pliers to hold screws if working in a tight or hard to reach location.
- ◆ A bent tip if working in restricted areas.
- ◆ Equipped with a ratchet for screws that are difficult to turn.

- ◆ With the following features for constant use over a long period:
 - A pistol-shaped handle to keep wrists straight and provide additional force.
 - A moving mechanism that gives a rotation movement when pushing in the tool handle.

USE

Exercise caution when working near breakers or switched-on electrical devices.

Store screwdrivers on a rack or in a case to make selection easier.

MAINTENANCE

File screwdriver tips that have become dull; make sure tip is straight and not chipped.

Beveled tips should always be correctly profiled to adapt to slits on screws.

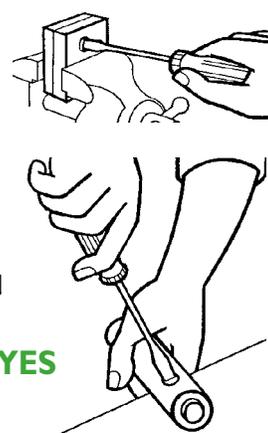
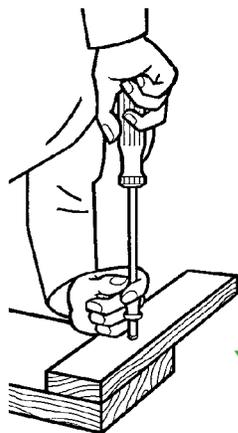
Shanks should be rectangular and shaped in a prism up to the depth of the slit. The width and thickness of the tip should fit in the slit of screws.

NEVER:

- ◆ Apply excessive pressure on screwdrivers to hold tip in contact with screw.



- ◆ Hold a part with one hand and the screwdriver with the other hand.
- ◆ Hammer in screws that are too hard to turn.
- ◆ Use a screwdriver as a crowbar, puncher, cutter, chisel, scraper or stirrer.



- ◆ Turn screwdriver tips with pliers.
- ◆ Heat up screwdriver tips.
- ◆ Use a screwdriver to check if a breaker is on.
- ◆ Carry screwdrivers in trouser pockets.
- ◆ Hit the screwdriver handle.

HAMMERS

SELECTION

Choose a hammer:

- ◆ With a face diameter exceeding the hammered part by 2.5 cm.
- ◆ With a reinforced handle, when used for removing nails.
- ◆ Made of brass, copper, lead, synthetic material, leather or other material unlikely to break off particles of material, when used for hammering tempered steel.

Fiberglass handles are recommended for very severe working conditions. As for plastic handles, their molecular structure is modified by frequent exposure to ultraviolet rays, which progressively lowers resistance.

USE

Carefully line up your movement with the point of impact, making sure the face of the hammer falls flat on the surface. Avoid hammering beside the intended target.

Look behind and above you before raising the hammer.

Keep your eyes on the target.

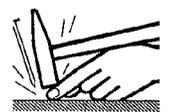
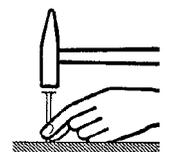
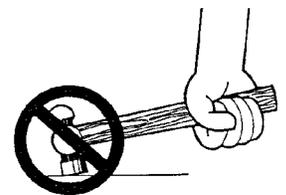
Hold the hammer with your wrist straight and a firm grip.

Hold the nails to be hammered near the nail head.

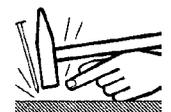
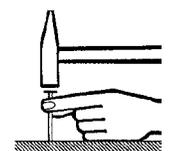
MAINTENANCE

Never use a heat source to reshape, grind, solder or harden the hammer head.

Prevent the head from



NO



YES

loosening up by inserting a wedge between the handle and the head.

NEVER:

- ◆ Hammer with the cheek of the hammer head.
- ◆ Hit a hammer with another hammer.

NEVER USE A HAMMER:

- ◆ With a loose or damaged handle.
- ◆ With a rough, split or deformed handle; or a handle with shards or sharp splinters of wood; or if the head is not solidly joined to the handle.
- ◆ If the face is bumpy, split, deformed or worn-out.

See RSST, Article 230.

PLIERS

SELECTION

Choose pliers with handles sufficiently wide apart to prevent palms or fingers from getting caught.

USE

Pull, rather than push on pliers.

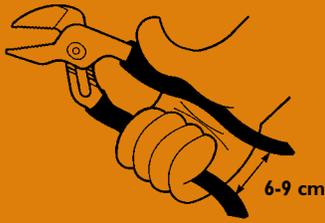
If using pliers to cut wires, cut at a right angle. Never attempt to cut wires by bending them with pliers or by wrapping wires back and forth near cutting jaws.

NEVER:

- ◆ Overheat pliers.
- ◆ Use pliers as a hammer.
- ◆ Hit the jaws of pliers with a hammer to cut wires or bolts.
- ◆ Extend handles to increase force.
- ◆ Rely on the insulation provided by cushioned handles.
- ◆ Use pliers to tighten or loosen bolts or nuts.

DO NOT USE PLIERS TO CUT:

- ◆ Tempered steel wires unless using specially designed pliers.
- ◆ Strong steel wires with small pliers.



Source of informations

- ◆ Infogram Sécurité, Centre canadien d'hygiène et de sécurité du travail
- ◆ Feuillet d'information sur la prévention des accidents et des maladies professionnelles, Caisse nationale suisse d'assurance en cas d'accidents
- ◆ Manuel pratique de prévention - Outils à main, OPPBTP

FILES

SELECTION

Files should have a handle with a metal ferrule. The tang should be perfectly joined to the handle, which should have an opening corresponding exactly to the shape of the tang.

USE

Firmly grasp the handle with the right hand and apply strong pressure on the other end of the file with the flat of the left hand.

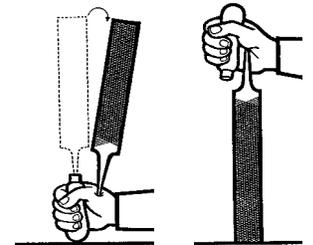
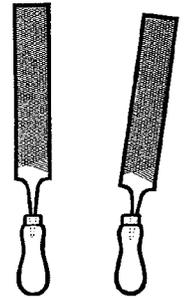
When filing moving components, the file handle should always be held with the left hand and the tip of the right hand. If the file is held with the right hand, the left arm has to reach over the right and clothing could get caught in machine parts.

MAINTENANCE

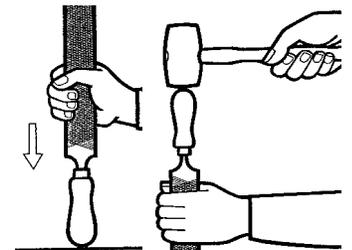
Push in handles frequently. The axis of the handle should be in line with the axis of the tang. Tangs that are not pushed in enough or are out of line with the handle will not stay in and will make it impossible to carry out precision work.

It is not recommended to fit in handles with a hot iron because the tang may not stick to the burned wood.

Handles can be safely removed by inserting the file in a vice and loosening up the tang with quick, sharp blows.



NO



YES