

STANDARD OPERATING PROCEDURE

Hand Tools

DO NOT use this equipment unless you have been trained and assessed to a competent level in its safe use and operation, and have been given permission to use this equipment.



Safety glasses must be worn at all times in work areas.



Long and loose hair must be contained when using hand tools.



Safety footwear must be worn at all times in work areas.



Close fitting/protective clothing must be worn when using hand tools.



Rings and jewellery must not be worn when using hand tools.



Hearing protection must be worn where noise levels are in excess of the 85 dB(A) occupational exposure limit.

PRE-OPERATIONAL SAFETY CHECKS

1. Ensure that risk assessment has been read. **UQ risk assessment task ID # 37393.**
2. Ensure no slip/trip hazards are present in workspaces and walkways.
3. Always check the condition of tools prior to use.
4. Faulty equipment must not be used. Immediately report suspect equipment or tools.

OPERATIONAL SAFETY CHECKS

1. Use tools that are the right size & right type for your job.
2. Follow the correct procedure for using every tool.
3. Keep your cutting tools sharp and in good condition.
4. Don't work with oily or greasy hands.
5. Cut away from yourself when using chisels and other edged tools.
6. Handle sharp-edged and pointed tools with care.
7. Always carry pointed tools by your side with the points and heavy ends down.
8. Never carry tools in your pockets.
9. Do not use tools which are loose or cracked.
10. Always place tools or materials where they cannot fall or trip other personnel when not in use.
11. Don't force screws; make sure that the correct screw or fixing for the job is being used.
12. Where possible, secure work with clamps or a vice, freeing both hands to operate the tool used.
13. Keep your balance and proper footing when working, being careful not to overreach.

Tool Handles:

- Handles should fit the hand well.
- Handles must have a good gripping surface e.g. dimpled, and be made of compressible material e.g. not hard plastic or metal.
- Handles must have no sharp edges or areas that dig into the fingers or palm of the hand.
- Tool handles should have a grip span about 6 cm and not more than 9 cm.
- Where possible, tools such as knives or soldering irons should have a guard/stopper at the front.

Impact Force:

- Reduce repeated shocks to the hand and wrist from hand tools with shock absorbing gloves.
- Limit torque reaction by using clutch-type tools, shut-off tools and external devices such as torque bars or articulating bars.

Saws:

- The work piece should be securely held in a vice or other firm support.
- When crosscutting, start the cut with two long slow pulls upwards.
- When ripping, start the cut with the finer teeth at the end of the blade.
- During the cutting process, apply downward force only on the forward cut not when drawing back.
- As the cut approaches completion, reduce the force applied to the saw to avoid breaking through the material and injuring hand.

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Hand Drills:

- Tighten drills correctly in the chuck.
- Before starting the drill, always remove the chuck key (if applicable) from the chuck – never leave the key in the chuck.
- Only sharp drill bits should be used. Never use dull, chipped, rounded, or tapered drill bits.
- Remove the drill bit before storing drill.

Hammers, Mallets and hitting tools:

- Use pliers to hold small nails.
- Choose the correct size hammer for the job.
- Never hit hammer faces together.
- Never ask other people to hold things you are hitting unless using tongs or a chisel holder.
- Keep clean and free from oil, glue or debris which might cause the handle to slip or the face to glance from the object being struck.
- Make sure the head is wedged securely and that the head and handle are not chipped or broken.
- Grasp handle firmly near the end and keep your eye on the point to be struck.
- Reduce strain when pulling nails by placing a piece of wood under the hammer to increase leverage.
- Don't use a screwdriver, wrench, or other tool as a hammer as this will damage the tool.

Punches & Chisels:

- Keep punches and chisels in good condition. Mushroomed heads can chip & cause injuries.
- Punches are designed to mark metal and other materials that are softer than the point end, to drive and remove pins, and to align holes.
- Never use a punch with a mushroomed struck face or with a dull, chipped, or deformed point. Only use cold chisels for cutting, shaping, and removing metal softer than the cutting edge.
- Factors determining the selection of a cold chisel are the material to be cut, the size and shape of the tool, and the depth of the cut to be made.
- The cold chisel should be held steadily but with a relatively loose grip and with the palm of the hand facing the user and the point of the chisel directed away.
- Ball chisels held by one person and struck by another require the use of tongs or a chisel holder to guide the chisel.
- Metal working chisels can produce flying chips/splinters that can cause injuries to eyes and face.

Knives and sharp cutting tools:

- Use a knife only for the correct purpose.
- Keep hands behind the cutting edge at all times.
- Never cut towards yourself, always cut away from your body.
- Where possible, use a cutting board underneath the material being cut.
- Always pass knives to others handle first.
- Never run with knives or push/shove people around using knives.
- Ensure knives are kept sharp – blunt knives can be dangerous.
- To clean, wipe the blade with a cloth keeping the knife's sharp edge turned away from the hand
- Do not substitute knives for can openers, screwdrivers, or ice picks.
- Replace or sharpen any cutting tool that has lost its correctly angled cutting edge.
- Dispose of all broken or blunt blades in a sharps container.
- Only use wire cutters for cutting light gauge wire or component leads. Do not use to cut sheet metal.
- Hand shears used for cutting sheet metal should be selected for the type of cut based on the side the waste material lies.

Files:

- Select the proper file for the work.
- Ensure that tangs are protected by handles and that teeth are sharp and clean.
- Ensure the file used is fitted with a smooth, crack-free handle.
- The correct way to hold a file is to grasp the handle firmly in one hand and use the thumb and forefinger of the other to guide the point. Push the file forward while bearing down on it. Release the pressure and bring the file back to its original position.
- Don't pry or hammer with a file.

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Pliers:

- Pliers may be used for gripping and cutting operations, but they are not a substitute for a wrench.
- Don't use pliers to turn nuts or bolts.
- Replace adjustable pliers if the jaws slip or bind.
- Replace pliers if the jaw grooves are worn too much for an effective grip.

Wrenches/Spanners:

- Safe use of all wrenches requires that the user always be alert and prepared for the possibility that the wrench may slip, the fastener may suddenly turn free, or the wrench or fastener may break.
- Where possible, use penetrating oil to loosen tight nuts.
- The user must always inspect the wrench for flaws. Keep jaws sharp and clean. Gripping teeth or smooth jaws should not be worn or damaged.
- Place the wrench so the pull on the handle tends to force the jaws further into the nut (lower jaw leads).
- Pulling on a wrench is safer than pushing
- Open end wrenches have strong jaws and are satisfactory for medium-duty turning.
- Replace an open end wrench if the jaws are no longer square.
- Box and Socket Wrenches are necessary for a heavy pull. Never overload the capacity of a wrench by using a pipe extension on the handle or be striking the handle with a hammer.
- Replace a box end wrench if the box edges aren't sharp or true.
- Socket and Adjustable Wrenches should be kept clean of dirt and grime inside the socket to ensure that the tool fits securely on the bolt or nut.
- Replace an adjustable wrench if the jaws have noticeable play, the mechanism slips or binds, or the jaws are rounded.
- Shift wrenches must work freely and adjust properly. Always use the proper size wrench for the job.
- Replace a socket wrench if the wrench binds, if the locking mechanism no longer holds or the wrench won't easily switch from forward to reverse.
- Replace individual sockets if they are cracked, they don't stay on the wrench or extension, or if the faces or corners are no longer true.

Screw Drivers:

- Select the correct size screw driver for the job.
- Don't carry screw drivers in your pocket.
- Pass a screw driver to another person handle first.
- When using a slotting screwdriver, use the correct size blade for the given slot.
- Use Phillips head tools for Phillips head fasteners.
- Use Pozidrive head tools for Pozidrive head fasteners.
- Don't use screwdrivers as a pry-bar.
- Do not use screwdrivers as levers, chisels, or scrapers.
- Don't hold the work piece in the palm of the hand while tightening up screws. A slip can result in a serious injury with the blade penetrating the hand or wrist. The work piece should be securely held in a vice or other firm support.
- Use insulated tools around energized equipment. Electrical tape wrapped on the shank of a screwdriver is not suitable insulation.
- Replace a screwdriver if the tip is chipped, bent, broken or rounded off.



HOUSEKEEPING

1. After use, return all tooling and fixtures to the correct storage location.
2. Ensure the equipment and work area are in a safe, clean and tidy state after job is completed.
3. Return surplus material to stock & dispose of waste material in an appropriate recycling or waste bin

POTENTIAL HAZARDS

- | | | |
|---------------------------------------|----------------------|----------------|
| ■ High noise levels (some operations) | ■ Flying debris/dust | ■ Eye injuries |
| ■ Sharp edges & burrs | ■ Material kickback | ■ Splinters |
| ■ Impact/crush injury | | |

FORBIDDEN

- Distracting operator
- Using tools for purposes which they are not designed

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