

## Power Tools

Power tools are such a common part of our worksite operations, it is difficult to remember that they may pose hazards. All tools are manufactured with safety in mind but a serious accident often occurs before steps are taken to search out and avoid or eliminate tool-related hazards.

In the process of removing or avoiding the hazards, you must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards.

Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use:

- Electric
- Pneumatic
- Liquid fuel
- Hydraulic
- Powder-actuated.



You should be trained in the use of all tools – not just power tools. You should understand the potential hazards as well as the safety precautions to prevent those hazards from occurring.

## Pause for Safety

- Hazards**
- electric shock
  - hand injuries
    - burns
    - cutting injuries and amputation
    - abrasion injuries
    - vibration and impact injuries
  - harmful dust or vapors
  - eye injuries
    - flying debris or pieces
    - flash
    - fumes
  - sustained noise injuries

**PPE**



**Additional PPE**



- Controls**
- inspection
  - maintenance
  - guards
  - training

## Strategies and Procedures

Ensure that you have been properly trained to use the tool safely.

- Read the operator's manual before using the tool and operate the tool according to the manufacturer's instructions.
- Use only tested and approved tools.
- Always wear the appropriate PPE.
- Ensure the correct tool is used for each job
- Ensure a safe zone exists around any out feed areas or moving mechanical parts of a power tool in accordance to manufacturer's recommendations and shall ensure the safe zone is marked or flagged to indicate this hazard



## Inspection

Before using...

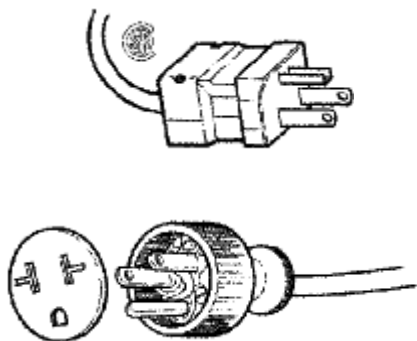
- Inspect tools for any damage prior to each use.
  - Damaged or poorly maintained power tools should not to be used.
  - Check the handle and body casing of the tool for cracks or other damage.
  - Inspect cords for defects: check the power cord for cracking, fraying, and other signs of wear or faults in the cord insulation.
  - If the tool has auxiliary or double handles, check to see that they installed securely.
  - Check for damaged switches and ones with faulty trigger locks.
  - Inspect the plug for cracks and for missing, loose or faulty prongs.
- Check for cleanliness.
- Ensure that the power tool has the correct guard, shield or other attachment that the manufacturer recommends.
- Any tool found to be defective should be removed from service, tagged with the deficiency and not used until repaired or replaced.
  - Have tools repaired by a qualified person - do not attempt field repairs.
- If applicable, check and service oils, lubricants, and grease points if required before using.



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### Corded electric tools

- Check electric tools to ensure that a tool with a 3-prong plug has an approved 3-wire cord and is grounded.
  - The three-prong plug should be plugged in a properly grounded 3-pole outlet.
  - If an adapter must be used to accommodate a two-hole receptacle, the adapter wire must be attached to a known, functioning ground.
  - NEVER remove the third, grounding prong from a plug.



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### Battery operated tools

- Use only the kind of battery that the tool manufacturer specifies for the battery-powered tool that you are using.
- Recharge a battery-powered tool only with a charger that is specifically intended for the battery in that tool.
- Remove the battery from the tool or ensure that the tool is switched off or locked off before changing accessories, making adjustments, or storing the tool.
- Store a battery pack safely so that no metal parts, nails, screws, wrenches and so on can come in contact with the battery terminals; this could result in shorting the battery and possibly cause sparks, fires or burns.



## Safe use

### Electrical tools

- Switch off the tools before connecting them to a power supply.
- Be sure to have secure footing and grip.
  - Be aware of posture and stance.
- If a power cord feels more than comfortably warm or if a tool is sparking, have it checked by an electrician or other qualified person.
- Disconnect the power supply before making adjustments or changing accessories.
- Remove any wrenches and adjusting tools before turning on a tool.
- During use, keep power cords clear of tools and the path that the tool will take.
- Use clamps, a vice or other devices to hold and support the piece being worked on, when practical to do so.
  - This will allow you to use both hands for better control of the tool and will help prevent injuries if a tool jams or binds in a work piece.
- Pull the plug, not the cord when unplugging a tool.
  - Pulling the cord causes wear and may adversely affect the wiring to the plug and cause electrical shock to the operator.



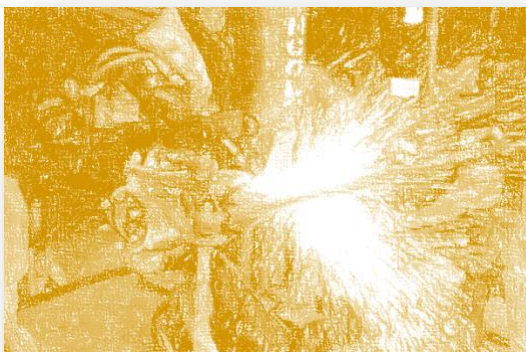
### Cord management

- Use only approved extension cords that have the proper wire size (gauge) for the length of cord and power requirements of the electric tool that you are using.
  - This will prevent the cord from overheating.
  - For outdoor work, use outdoor extension cords marked "W-A" or "W".
- Suspend power cords over aisles or work areas to eliminate stumbling or tripping hazards.
- Eliminate octopus connections.
  - If more than one receptacle plug is needed, use a power bar or power distribution strip that has an integral power cord and a built-in overcurrent protection.
- Keep power cords away from heat, water, oil, sharp edges and moving parts.
  - They can damage the insulation and cause a shock.

### General

- Follow good housekeeping procedures.
  - Keep the work area free of clutter and debris that could be tripping or slipping hazards.
- Ensure that cutting tools, drill bits, etc. are kept sharp, clean and well maintained.
- Store tools in a dry, secure location that will protect them from damage and deterioration when they are not being used.
- Clean tools before putting them away.
- Ensure frequent rests are taken to minimize fatigue, muscle strain, possible vibration related injury, joint strain and exhaustion

## What NOT to do

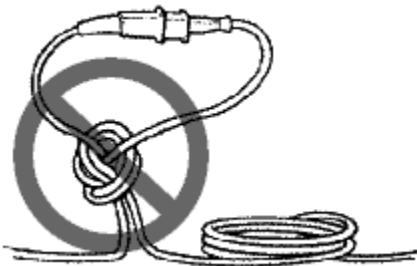


- Do not wear loose gloves, loose clothing or jewelry while using revolving power tools.
  - Tie back long hair or wear appropriate hair protection to prevent hair from getting caught in moving parts of equipment.
- Do not use a tool unless you have been trained to use it safely and know its limitations and hazards.
- Avoid accidental starting
  - Ensure the tool is turned off before you plug it in.
  - Do not walk around with a plugged-in tool with your finger touching the switch.
- Do not operate a power tool in a manner that creates a kick back, striking or contact hazard to other workers
- Do not bypass, defeat or modify the ON/OFF switch.
- Do not disconnect the power supply of the tool by pulling or jerking the cord from the outlet.
- Do not leave a running tool unattended.
  - Do not leave it until it has been turned off, has stopped running completely, and has been unplugged.

- Never leave tools unattended in a manner that may enable the tool to fall or be lost.
- Do not expose electric power tools to rain or wet conditions.
  - Wet tools increase the likelihood of electric shock.
  - Using a ground fault circuit interrupter (GFCI) is necessary if working in a wet or damp area where moisture could contact the tool.
- Avoid body contact with grounded surfaces like refrigerators, pipes and radiators when using electric powered tools.
  - This will reduce the likelihood of shock if the operator's body is grounded.
- Do not plug several power cords into one outlet by using single-to-multiple outlet adapters or converters ("cube taps").
- Do not use light duty power cords.
- Stop using an electric power tool if you feel a tingle in your fingers.
  - This is a warning that the tool is faulty and needs repair.



- Do not connect or splice extension cords together to make a longer connection.
  - The resulting extension cord may not be able to provide sufficient current or power safely.
- Do not carry electrical tools by the power cord.
- Do not tie power cords in knots.
  - Knots can cause short circuits and shocks.
  - Loop the cords or use a twist lock plug.



- Never break off the third prong on a plug.
  - Replace broken 3-prong plugs and make sure the third prong is properly grounded.
- Never use extension cords as permanent wiring.
  - Use extension cords only as a temporary power supply to an area that does not have a power outlet.
- Do not walk on or allow vehicles or other moving equipment to pass over unprotected power cords.

- Cords should be put in conduits or protected by placing planks on each side of them.
- Do not brush away sawdust, shavings or turnings while the tool is running.
  - Never use compressed air for cleaning surfaces or removing sawdust, metal turnings, etc. from equipment, materials and structures if any person could be exposed to the jet or to the material it expels or propels.
- Do not operate tools in an area containing explosive vapors or gases.
- Do not clean tools with flammable or toxic solvents.
- Do not surprise or touch anyone who is operating a tool.
  - Startling a tool operator could end up causing an accident or injury.
- Do not modify, alter, block off or remove any guard or safety device of a power tool from the original condition.



## Responsibilities

### Workers

It is your responsibility to:

- Use and wear properly the appropriate PPE as required in the operation of any power tool in accordance with the training and instruction received
- Inspect PPE before using it
- Not use PPE that is unable to perform the function for which it is designed
- Use power tools as directed by the manufacturer's recommendation
- Use the tool appropriate for the task
- Be responsive, through adequate training, to minimize the risk of exposure to potential work hazards which may be prone to power tools
- Immediately inform the supervisor of any violations or infractions of this code of practice, which did or could result in an incident or injury to any person. Maintain in good working condition power tools and all related equipment which are provided to the worker

### Supervisors

In addition to worker responsibilities it is the supervisor's responsibility to:

- Ensure that workers use and wear properly the appropriate PPE as required in accordance with the training and instruction received
- Ensure appropriate PPE as specified in this code of practice is readily available for all workers, contractors and visitors within the company's areas of operation
- Ensure power tools are maintained in a serviceable condition for the task as per the manufacturer's recommendation

- Immediately correct any violations or infractions of this code of practice, which have been brought to the attention of the supervisor, which did or could result in an incident or injury to any person
- Provide in accordance with the company's programs any corrective action or discipline required ensuring compliance with this code of practice and document any said action appropriately

### Management

In addition to worker and supervisor responsibilities it is management's responsibility to:

- Ensure compliance with this Best Practice, by all levels of the company including contractors, visitors and the general public within the company's areas of operation or active worksites
- Provide for adequate training and monitoring of compliance

### Corporate HSE team

It is the responsibility of the corporate HSE team to:

- Develop and review as outlined in the HSE program, this code of practice to ensure current compliance with all regulatory legislation and company practices
- Amend and maintain this code of practice within the defined review period
- Establish a maintenance schedule to ensure power tools are checked for serviceable condition on a timely basis

