**Portable Power Tool Safety**

**Abrasive wheels, buffers, and scratch brushes**

- Guard abrasive tools as completely as possible.
- When grinding, the maximum angular exposure of the periphery and sides should not exceed 180 degrees.
- Always enclose the top portion of the wheel when grinding.
- Use adjustable guards to make the correct adjustment instead of removing the guard.
- Always wear eye protection.
- Keep an abrasive wheel away from water and oil, which might affect its balance.
- Protect the wheel from blows by other tools, and avoid striking the sides of a wheel against other objects or dropping the wheel.
- Hold and use the wheel correctly so that it does not touch the clothes or body.
- Only trained employees should install wheels.

**Pneumatic Tools**

- Handling heavy jackhammers causes fatigue and strain. Cover jackhammer handles with heavy rubber grips to reduce vibration and fatigue.
- Wear appropriate personal protective equipment, including shoe guards.
- When two jackhammers are in use, work back-to-back to prevent injury from chips.

Always use three safety devices:

1. An automatically closing valve that is actuated by a trigger inside the handle.
2. A retaining spring, or ring that holds the tool in place and prevents it from being fired from the barrel.
3. A rubber-retaining ring that prevents the pin holding the tool in place from being released during operation.

**Air powered Tools**

- Keep hands and clothing away from the working end.
- Follow safety requirements applicable to the tool being used and the nature of the work.
- Inspect and test the tool, air hose, and coupling before each use.
- Use a short chain or hose safety pins to secure all air line couplings.
- Never exceed the manufacturer’s listed air pressure.
- Use pin guards to prevent the pin from being thrown off during operation.

For additional information contact:
Environmental Health and Safety
650-3064,
Safety Building, Room 111, Mail Stop 9070

1/2003
Portable Power Tools

A portable power tool presents hazards similar to a stationary machine of the same kind. The mobility of power-driven tools means they can easily come in contact with the operator’s body.

- Before making adjustments to power tools, such as changing a bit or blade, make sure the power is off or the unit is unplugged.
- Avoid loose clothing, jewelry, ties, or any dangling objects.
- Tie back long hair that may catch in rotating parts or accessories.
- If it has an electrical cord, constantly stay away from the cord’s location.
- Ensure removable parts are in good condition and securely attached to the power tool before use.
- Unplug tools left unattended.

Electric Tools

Electric shock is the chief hazard from electrically powered tools.

- Do not use electric tools in damp or wet locations, or in metal tanks.
- Use only electric tools that are in good repair.

- Use only double-insulated electric tools.
- Use a Ground Fault Circuit Interrupter (GFCI) if a double-insulated tool is not available.
- Use GFCIs in wet environments, confined spaces, and some construction activities.

Circular Saws

- Use guards as the manufacturer intended.
- Check the guard frequently to be sure that it:
  - Operates freely
  - Encloses the teeth completely when cutting.
  - Encloses the unused portion of the blade when it is cutting.
- Inspect masonry cracks after every use.
- Do not use a circular saw that is too heavy for a worker to easily control.
- Be sure the switch turns the tool on and returns to the off position after release.
- Use sharp blades.
- Use the correct blade for the application, and observe rotation marks on the blade during installation.
- Make sure the blade has the proper size and shape arbor hole.

- Check for the speed marked on the blade and that it matches the no-load speed on the saw nameplate.
- Secure work with a clamp.
- Use both hands for maximum control.

Belt or Disc Sanders

- Do not expose sander to liquids.
- Do not use in damp or wet areas.
- When adjusting the tracking of the belt on a portable unit, have the sander supported and positioned to avoid contact with yourself or an adjacent object.
- The work area should be at least 3ft-4ft larger than the length of stock being sanded.
- On stationary sanders, maintain a 1/16-inch maximum clearance between the work table and the sanding disc or belt on all working sides.
- Always support your work piece with the table or backstop.
- Use jigs, clamps, or fixtures to hold your work piece whenever possible.

Disc Grinders

- Use portable straight grinders only with high-strength, bonded wheels.
- Equip tuck point grinders (a variation of straight grinders) with re-infroced abrasive discs and the appropriate guard.
- Maintain firm control and balance of the tool, and never over-reach.
- Do not allow the grinding wheel to bend, pinch, or twist in the cut or kickback may result.
- Use angle grinders primarily for the removal of metal or masonry.
- Equip angle grinders with reinforced abrasive discs or wire cup brushes.
- Check for wheel speed, and do not exceed it.
- Always check for cracks.
- Do not use damaged grinding wheels.
- Fragments from grinding wheels can be fire hazards.