

8.2: Power-Operated Hand Tools

Power-Operated Hand Tools

Electric power-operated tools must be either of the approved double-insulated type or grounded in accordance with OSHA 29 CFR 1926, Subpart K. "Approved" means accepted, certified, listed, labeled, or otherwise determined to be safe by a qualified testing laboratory. In addition, these requirements must be followed for use of power-operated hand tools:

- Do not permit the use of electric cords for hoisting or lowering tools.
- Remove all damaged portable electric tools from use and tag them "Do Not Use."
- Secure hose or whip pneumatic power tools by some positive means to prevent the tool from becoming accidentally disconnected.
- Securely install and maintain safety clips or retainers on pneumatic impact (percussion) tools to keep attachments from being accidentally expelled.
- Ensure that all pneumatically driven nailers, staplers, and other similar equipment that are provided with automatic fastener feeds (that operate at more than 100 psi pressure at the tool) have safety devices on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.
- Do not allow compressed air to be used for cleaning purposes except where reduced to less than 30 psi and then only with effective chip guarding and PPE that meets the requirements of 29 CFR 1926 Subpart E. The 30 psi requirement does not apply for concrete form, mill scale, and similar cleaning purposes.
- Do not exceed the manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings.
- Do not permit the use of hoses for hoisting or lowering tools.
- Ensure that all hoses exceeding ½-inch inside diameter have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
- Equip airless spray guns of the type that atomize paints and fluids at high pressures (1,000lbs or more per sq. in.) with automatic or visible manual safety devices to prevent pulling of the trigger and releasing paint or fluid until the safety device is manually released, or, provide a diffuser nut that will prevent high pressure, high velocity release while the nozzle tip is removed as well as a nozzle tip guard, or other equivalent protection, that will prevent the tip from coming into contact with the operator.
- Equip abrasive blast cleaning nozzles with an operating valve that must be held open manually. Provide a support on which the nozzle can be mounted when it is not in use.
- turn off all fuel-powered tools while refueling, servicing, or maintaining them. Transport, handle, and store fuel in accordance with 29 CFR 1926, Subpart F.
- Apply applicable requirements, as outlined in 29 CFR 1926, Subparts D and E, for concentrations of toxic gases and use of PPE when using fuel-powered tools in enclosed spaces.

Powder-actuated tools

These requirements must be followed for use of powder-actuated tools:

- Allow only workers who have been trained in the operation of the particular tool in use to operate a powder-operated tool.
- Test the tool daily before loading, in accordance with the manufacturer's recommendations, to ensure that safety devices are in proper working condition.
- Remove from service immediately any tool not in proper working order or that develops a defect during use, and do not use it again until it is repaired.
- Ensure that all PPE is in accordance with 29 CFR 1926, Subpart E.
- Do not load tools until just prior to the intended firing time. Never point either loaded or empty tools at any person. Keep hands clear of the open barrel end. Never leave loaded tools unattended.
- Do not drive fasteners into hard or brittle materials including, but not limited to, the following:
 - cast iron
 - glazed tile
 - surface-hardened steel
 - glass block
 - live rock
 - face brick

- hollow tile
- Avoid driving pins or fasteners into materials that are easily penetrated unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side. Never drive a fastener into a spalled area caused by an unsatisfactory fastening.
- Do not use tools in an explosive or flammable atmosphere. Always use tools with the correct shield, guard, or attachment recommended by the manufacturer.

Abrasive wheels and tools

These requirements must be followed for use of abrasive wheels and tools:

- Ensure that all grinding machines are supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation.
- Ensure that all grinding machines are equipped with safety guards that cover the spindle end, nut, and flange projections, that the safety guard is mounted to maintain proper alignment with the wheel, and that the strength of the fastenings exceeds the strength of the guard.
- Provide safety guards (protection hoods) for floor-stand and bench-mounted abrasive wheels used for external grinding. Ensure that the maximum angular exposure of the grinding wheel periphery and sides is not more than 90 degrees, except that when work requires contact with the wheel below the horizontal plane of the spindle where the angular exposure must not exceed 125 degrees. In either case, ensure that the exposure does not begin more than 65 degrees above the horizontal plane of the spindle. The safety guards must be strong enough to withstand the effect of a bursting wheel, and work rests that are rigidly supported and readily adjustable must be provided for floor- and bench-mounted grinders. Work rests must be kept at a distance not more than 1/8 inch from the surface of the wheel.
- Inspect closely and ring-test all abrasive wheels before mounting to ensure that they are free from cracks and defects.
- Ensure that grinding wheels fit freely and are not forced on the spindle. Tighten the spindle nut only enough to hold the wheel in place. Protect all workers using abrasive wheels with eye protection equipment in accordance with the requirements of 29 CFR 1926, Subpart E, unless adequate eye protection is afforded by eye shields that are permanently attached to the bench or floor stand.

Jacks and Hydraulic Tools

These requirements must be followed for use of jacks and hydraulic tools:

- Mark the manufacturers rated capacity legibly on all jacks and ensure that the capacity is not exceeded.
- Make sure that all jacks have a positive stop to prevent over travel.
- Make sure that the base of the jack is blocked or cribbed when it needs a firm foundation. Place a wood block between the cap and the load if a possibility of slippage of the metal cap of the jack exists.
- Crib, block, or otherwise secure the load immediately after it has been raised.
- Supply hydraulic jacks exposed to freezing temperatures with adequate antifreeze liquid.
- Lubricate all jacks at regular intervals.
- Inspect each jack thoroughly at times depending upon the service conditions. Inspect no less frequently than the following intervals:
 - For constant or intermittent use at one locality, once every six months
 - For jacks sent out of shop for special work, when sent out and when returned
 - For a jack subjected to abnormal load or shock, immediately before and immediately thereafter
 - Tag jacks that are out of order and ensure that they are not used until rep

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