



Pannier Corporation

Health and Safety Handbook

Marking System Group



Hand and Portable Power Tools Plan

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Scope: This Plan covers site-specific practices and requirements for hand and portable power tool operation and maintenance.

Policy: Pannier Corporation will protect its employees from hazards related to hand and portable power tools and equipment through engineering controls, tool safeguards, communication of hazards and solutions, personal protective equipment, and training.

Department Supervisors

The Department Supervisors will:

- Read and understand instructional documents provided by the manufacturer before use of any tool
- Provide authorization for employees to use tools and maintain records of authorized employees.
- Provide additional on-the-job training if the employee is not thoroughly familiar with the equipment and/or written procedures.
- Provide safe hand and power tool equipment to employees.
- Remove defective hand and power tools from service.
- Maintain inspection records of hand and power tools.

The department Supervisors may designate other employees, including managers and Employees, to implement and enforce the provisions of this Plan.

Employees. All employees who use hand and portable power tools will:

- Read and understand instructional documents provided by the manufacturer for the hand and power tool prior to use.
- Recognize the conditions of work that require hand and power tool inspection.
- Understand and follow the hand and power tool safety procedures in this Plan.
- Not tamper with or remove a safety guard.
- Stop using damaged or defective hand and power tools and report such problems to a supervisor.

Plan Review and Update

The hand and power tool procedures and employee authorizations will be reviewed annually, and are reviewed and updated whenever:

- New types of electrical systems or equipment for powering portable power tools are introduced into the workplace.
- Evaluations of workplace hazards, injuries, and near-misses demonstrate that the current Plan is outdated or not effective.
- Regulatory or applicable national consensus standards change that require this Plan to be updated.

DEFINITIONS

Hand tool means a tool that is nonpowered or operates only through physical exertion by hand and includes anything from axes to wrenches and paper-cutting boards in offices.

Point of operation means the area around a tool where work is actually performed on the material being processed, and the operation exposes an employee or employees to injury.

Portable power tool means a mounted or portable tool that requires a power source to operate, such as electric, pneumatic, liquid fuel, hydraulic, explosive-actuated, and powder-actuated device or power supply. Examples of regulated portable power tools are portable abrasive wheels and grinders, lawn mowers, powered drills, portable circular saws, portable belt sanding machines, explosive-actuated fastening tools, jacks, and abrasive blast cleaning nozzles.

HAZARD ASSESSMENT

The Administrator or designee will ensure that a hazard assessment is conducted in each work area where hand and portable power tools are or may be used. The assessment will identify sources of hazards that could expose employees to flying objects, shock or electrocution, sparks, punctures, cuts, and crushing forces. For example, sparks produced by iron and steel hand tools can be a dangerous ignition source around flammable substances.



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Each hazard assessment will identify hazards, recommend controls, and provide guidance on appropriate personal protective equipment (PPE) selections when a hazard control is not feasible or satisfactory.

Hearing Protection

If it is determined that any employees are exposed to noise from portable power tools at or in excess of an action level of 85 decibels (dB) for an 8-hour day, then the Department Supervisor or designee will implement a hearing conservation program for exposed employees.

GENERAL TOOL SAFETY PRACTICES

Condition of Tools

All hand tool and portable power tools and similar equipment, whether furnished by the employer or the employee, will be maintained in a safe condition. Tools will be stored in appropriate storage areas when not in use.

Electric-Powered Tools

Electric power tools will be either three-wire grounded or double-insulated and listed by Underwriters' Laboratories or another recognized listing agency.

Hand Tool Safe Practices

- Floors will be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.
- Saw blades, knives, and other sharp tools will be directed away from aisle areas and other employees working in close proximity.
- Knives and scissors will be kept sharp; dull tools can be more hazardous than sharp ones.
- Spark-resistant tools made from brass, plastic, aluminum, or wood will be used around flammable substances.

Power Tool Safe Practices

To prevent hazards associated with the use of power tools, employees will obey the following general precautions:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil, and sharp edges.
- Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
- Keep all people not involved with the work at a safe distance from the work area.
- Secure work with clamps or a vise where appropriate, freeing both hands to operate the tool.
- Avoid accidental starting; do not hold fingers on the switch button while carrying a plugged-in tool.
- Maintain tools with care; keep them sharp and clean for best performance.
- Follow instructions in the user's manual for the tool when lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance when operating power tools.
- Do not wear loose clothing, ties, or jewelry when operating portable power tools; such items can become caught in moving parts.
- Remove all damaged or defective portable electric tools from use and tag them: "Do Not Use."
- Always plug cord-connected, hand-held electric tools into ground-fault circuit interrupter (GFCI)-protected receptacles or in compliance with the facility's assured electrical grounding conductor program.

Guarding Portable Power Tools

All power tools designed with guards will be equipped with such guards when in use. All belts, gears, shafts, sprockets, drums, spindles, fly wheels, chains, pulleys, or other reciprocating, rotating, or moving parts of tools will be guarded if those parts may expose



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to contact by employees or otherwise create a hazard. Methods of guarding will prevent injuries from points of rotating parts, ingoing nip points, and flying chips and sparks.

Safety input and approval from the Administrator or designee will be obtained when manufacturer recommendations for guarding a specific power tool are not available or cannot be implemented.

Safe Work Practices with Guards

Following are general safe work practices when working with power tools with guards:

- Guards will not be removed unless the power tool is unplugged or locked out from the power source.
- Notify a supervisor immediately when any unguarded moving parts or dangerous points of operation are observed. Stop work and shut down the tool until the condition is corrected.
- Operate equipment only when the proper tool guards are in place.
- Do not use unauthorized or damaged guards.
- Never leave tools unattended with parts still moving; even after the machine is turned off, some parts may still be moving.
- Never remove or bypass guards.
- Maintain good housekeeping practices by keeping the work area free of debris or other items that can get caught in tools or power equipment.
- Operate power tools only when all guards are in place and properly attached according to the manufacturer's recommendations, and functioning properly.
- Wear proper eye and face protection while operating power tools.
- If a guard is damaged, bypassed, or missing, shut down the tool until the problem is corrected.
- Never wear loose clothing or jewelry while operating power tools.

PPE

Employees using hand and power tools exposed to the hazard of falling, flying, abrasive and splashing objects, or exposed to flying dusts, fumes or mists, vapors or gases will be fitted with the particular PPE necessary to protect them from the specific hazard. Safety eyewear, hard hats, gloves, and appropriate safety shoes are required on all construction sites.

Safety Switches

All hand-held power tools will be fitted with any one of the following safety switch methods as appropriate for the particular tool:

- A momentary contact "on-off" control
- A lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on
- A pressure switch that constant pressure is needed to run and will shut off when the pressure is released, such as required for hand-held gasoline-powered chain saws

SPECIFIC HAND AND PORTABLE POWER TOOLS

The Administrator or designee will ensure that employees who perform work using hand and portable power tools are provided with tools that are safe, and that employees will inspect the tool prior to use and use it correctly.

Hand Tools

Wrenches

Wrenches including adjustable, pipe, box-end, and socket-style wrenches will not be used when the jaws or socket are stripped or sprung in such a way that slippage occurs.

Impact Tools

Impact tools such as drill pins or punches, wedges, and chisels will be kept free of mushroomed heads.



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Wooden Handles of Tools

Wooden-handled tools will be kept free of cracks and splinters and will be kept tightly attached to the working end of the tool.

Portable Power Tools

Portable Circular Saws

All cracked saws will be removed from service.

Guards. All portable, power-driven circular saws that have a blade diameter greater than 2 inches (in.) will be equipped with guards above and below the base plate or shoe. The upper guard will cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard will cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard will automatically and instantly return to covering position.

Switches. Circular saws will be equipped with a constant pressure switch or control that will shut off the power when the pressure is released.

Portable Belt Sanding Machines

Guards. Belt sanding machines will be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards will effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt will be guarded against accidental contact.

Portable Powered Abrasive Wheels

Inspection. Before an abrasive wheel is mounted, it will be inspected closely and sound- or ring-tested to be sure that it is free from cracks or defects. To test, wheels should be tapped gently with a light non-metallic instrument. If they sound cracked or dead, they could fly apart in operation and, so, must not be used. A sound and undamaged wheel will give a clear metallic tone or "ring."

Mounting. The wheel must fit freely on the spindle to prevent it from cracking. The spindle nut must be tightened enough to hold the wheel in place without distorting the flange. The manufacturer's recommendations for mounting and use of the wheel must be followed. Care must be taken to assure that the spindle wheel will not exceed the abrasive wheel specifications.

Due to the possibility of a wheel disintegrating (exploding) during start-up, the employee must never stand directly in front of the wheel as it accelerates to full operating speed.

Guards. Abrasive wheels will be used only on a machine provided with safety guards. A safety guard will cover the spindle end, nut, and flange projections. The safety guard will be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings will exceed the strength of the guard. Safety guards on all operations where the work provides a suitable measure of protection to the operator may be so constructed that the spindle end, nut, and outer flange are exposed. Where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

Portable abrasive wheels used for internal grinding will be provided with safety flanges (protection flanges) only with wheels designed to fit the flanges. Only safety flanges of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of accidental breakage will be used.

Note: This requirement for internal grinding wheels does not apply when wheels 2 in. or less in diameter, which are securely mounted on the end of a steel mandrel, are used and when the wheel is entirely within the work being ground while in use.

Exceptions to abrasive wheel requirements. The requirements for abrasive wheels do not apply to natural sandstone wheels, and metal, wooden, cloth, or paper discs having a layer of abrasive on the surface.



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Cup Wheels

Cup wheels (Types 6 and 11) will be protected by safety guards or special "revolving cup guards" which mount behind the wheel and turn with it. They will be made of steel or other material with adequate strength and will enclose the wheel sides upward from the back for one-third of the wheel thickness.

Portable Power Grinders

When using a powered grinder, employees must:

- Always use eye protection.
- Turn off the power when not in use.
- Never clamp a hand-held grinder in a vise.

Guards. Portable grinding tools will be equipped with safety guards to protect workers from the moving wheel surface and from flying fragments in case of breakage. Safety guards used on right angle head or vertical portable grinders will have a maximum exposure angle of 180 degrees and the guard will be so located so as to be between the operator and the wheel during use. Adjustment of the guard will be such that pieces of an accidentally broken wheel will be deflected away from the operator.

The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on other portable grinding machines will not exceed 180 degrees and the top half of the wheel will be enclosed at all times.

Electric Power-Operated Tools

Portable electric power-operated tools will be of the approved double-insulated type and used with an approved grounding device such as a GFI (Ground Fault Indicator) to prevent the unlikely event of an electrical shock. Such tools will meet the requirements of the federal electrical safety rules (29 CFR 1910.301 to 1910.335).

Safe work practices. Employees will implement the following safe work practices when handling and operating electric power-operated tools:

- Never use electrical cords for hoisting or lowering tools.
- Keep cords and hoses away from heat, oil, and sharp edges.
- Operate electrical tools only within their design limitations.
- Wear gloves and safety footwear as appropriate during use of electric tools.
- When not in use, store electrical tools in a dry place.
- Do not use electrical tools in damp or wet locations without authorization.
- Ensure work areas are well-lighted.

Pneumatic-Powered Tools and Hoses

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders.

Retainer. Pneumatic power tools will be secured to the hose or whip by some positive means such as a tool retainer to prevent the tool from becoming accidentally disconnected. Safety clips or retainers will be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

PPE. Eye protection is required and face protection is recommended for employees working with pneumatic tools. Use appropriate hearing protection when working with noisy tools such as jackhammers.

Barrier protection. Screens must be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers, or air drills.



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Air pressure. The safe operating pressure stated by the manufacturer will not be exceeded. Supplied compressed air will not be used for cleaning purposes except when reduced to 30 pounds per square in. (psi) and then only with effective chip guarding and when proper PPE is used.

Hoses. Pneumatic powered tools will be secured to the hose or connection by a positive means to prevent them from being accidentally expelled. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard. Hoses will not be used for hoisting or lowering. All hoses exceeding ½ in. inside diameter will have a safety device to reduce pressure should the hose fail.

Nailers, staplers, and similar tools. All pneumatically driven nailers, staplers, and other similar tools provided with automatic fastener feeds which operate at more than 100 psi pressure to the tool will have a safety device on the muzzle end to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface. A safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.

Compressed air guns. Compressed air guns must never be pointed toward anyone. Users must never "dead-end" the gun against themselves or anyone else.

Spray guns. Airless spray guns which atomize paints and fluids and operate at pressure of 1,000 psi or more will be equipped with an automatic or visible manual safety device which prevents the accidental pulling of the trigger to prevent the release of paint or fluid until the device is manually released. [Instead] of the safety device, the gun may be equipped with a diffuser nut which will prevent high pressure and high velocity release while the nozzle tip is removed, plus a nozzle tip guard, or other equivalent protection, which will prevent the tip from coming into contact with the operator.

Blasting nozzles. Abrasive blasting nozzles will be equipped with a valve which must be activated manually for operation and a holding rack for nonoperation. The nozzle will be mounted on a support when it is not in use.

Hydraulic Power Tools

The fluid used in hydraulic powered tools will be fire-resistant fluids and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings will not be exceeded.

Fuel-Powered Tools

All fuel-powered tools will be stopped during refueling, servicing, or maintenance. Fuel will be transported, handled, and stored in accordance with USEPA and USDOT rules and procedures.

When fuel-powered tools are used in enclosed spaces, the applicable requirements for toxic gas monitoring and use of PPE will be applied.

Powder-Actuated Tools

Powder-actuated tools are also known as "explosive-actuated." Such tools are actuated by explosives or any similar means, and propel a stud, pin, fastener, or other object for the purpose of affixing it by penetration to any other object.

Powder-actuated tools will be designed in accordance with federal regulatory requirements (see 29 CFR 1910.243) and operated according to facility and manufacturer's instructions.

Employee training. Only employees who have been trained in the safe operation of the particular powder-actuated tool in use will be allowed to operate a powder-actuated tool.

Testing. The tool will be tested each day before loading to see that safety devices are in proper working condition. The method of testing will be in accordance with manufacturer's recommended procedures.



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Inspection. Before using a tool, the operator will inspect it to determine to his or her satisfaction that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions.

The tool will be inspected at regular intervals and be repaired in accordance with the manufacturer's specifications.

Safe work practices. Employees will obey the following safe work practices when operating powder-actuated tools:

- Any tool found not in proper working order, or which develops a defect during use, will be immediately removed from service and not used until properly repaired by an authorized provider.
- Tools will not be loaded until just prior to the intended firing time. At no time, loaded or unloaded, are the tools to be pointed at any employees.
- Hands will be kept clear of the open barrel.
- Loaded tools will not be left unattended.
- Tools will not be used in an explosive or flammable environment.
- In case of a misfire, the operator will hold the tool in the operating position for at least 30 seconds and then try to operate the tool a second time. The operator will wait another 30 seconds, holding the tool in the operating position, then proceed to remove the explosive load in strict accordance with the manufacturer's instructions.
- A tool will never be left unattended in a place where it would be available to unauthorized persons.
- Fasteners will not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.
- Driving into materials easily penetrated will be avoided 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.
- Fasteners will not be driven directly into materials such as brick or concrete closer than 3 in. from the unsupported edge or corner or into steel surfaces closer than ½ in. from the unsupported edge or corner, unless a special guard, fixture, or jig is used. (Exception: Low-velocity tools may drive no closer than 2 in. from an edge in concrete or ¼ in. in steel).
- When fastening other materials, such as a 2- by 4-in. wood section to a concrete surface, it is permissible to drive a fastener of no greater than 7/32-in. shank diameter not closer than 2 in. from the unsupported edge or corner of the work surface.
- Fasteners will not be driven through existing holes unless a positive guide is used to secure accurate alignment.
- No fastener will be driven into a spalled area caused by an unsatisfactory fastening.
- Driving into materials easily penetrated will be avoided 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.

Protective systems and PPE. All tools will be used with the correct shield, guard, or attachment recommended by the manufacturer. Appropriate PPE will be used when operating powder-actuated tools. Eye protection will be required at all times. Head and face protection will be used as required by working conditions.

Power Lawnmowers

Guards. Power lawnmowers of the walk-behind, riding-rotary, and reel power lawnmowers will be guarded in accordance with the machine guarding requirements in 29 CFR 1910.212, General requirements for all machines.

All power-driven chains, belts, and gears will be so positioned or otherwise guarded to prevent the operator's accidental contact therewith, during normal starting, mounting, and operation of the machine.

Shut off device. A shutoff device will be provided to stop operation of the motor or engine. This device will require manual and intentional reactivation to restart the motor or engine.

Operator information. All positions of the operating controls will be clearly identified. The words, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording will be clearly visible at an engine starting control point on self-propelled mowers.

Jacks



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A jack is an appliance for lifting and lowering or moving horizontally a load by application of a pushing force. Jacks may be lever and ratchet, screw, and hydraulic.

The manufacturer's rated capacity for the jack will be legibly marked on all jacks and will not be exceeded. All jacks will have a positive stop to prevent and stop over-travel.

When providing a firm foundation, the jack base, as well as the cap, will be blocked or cribbed to prevent slippage. Where there is a possibility of slippage of the metal cap of the jack, a wood block shall be placed between the cap and the load.

Inspections. Jacks will be maintained according to the manufacturer's recommendations and inspected at least every 6 months and prior to use. For jacks subjected to abusive conditions such as freezing, load shock, or extreme heat, the jack will be examined for possible defects.

Defective jack. Any jack found damaged or defective will be tagged accordingly and not be used until repaired by a person qualified to perform such repairs.

ACCIDENT INVESTIGATION

All incidents that result in injury to workers, as well as near misses, regardless of their nature, will be reported and investigated. Investigations will be conducted by the Quality Manager or other authorized person as soon after an incident as possible to identify the cause and means of prevention to eliminate the risk of reoccurrence.

In the event of an incident that results in serious injury, this Plan will be reevaluated by the Administrator or designee to determine if additional practices, procedures, or training is necessary to prevent similar future incidents.

CONTRACTORS

Contractors must submit, as part of the contract-required Plan, a hand and power tool program that meets the provisions of this Plan.

Onsite service contractors may train their own employees in specific company policies, procedures, and equipment, as needed, to ensure the safety of their employees. They must maintain authorization records that meet the requirements of this Plan.

TRAINING

Only employees who are trained and authorized will perform work using hand and power tools. Construction contractors are permitted to show written records of equivalent training. The Administrator or designee will provide specific authorization after the employee satisfies the training requirements of this Plan or attachments.

Training Program Requirements

Training of employees that use hand and power tools must include the safe operation, use, and care of the tool(s) and implements. The employee must be trained to be thoroughly familiar with the equipment (within the context of his/her job function) and with the tool manufacturer's procedures.

Each employee will be provided additional on-the-job training if the employee is not thoroughly familiar with the tools and/or written procedures.

Refresher Training

Hand and power tool refresher training is required when:

- An authorized employee's job changes or if he or she is reassigned.
- A new hand or power tool is introduced to the work area for use.
- New handling procedures are implemented.



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- An employee demonstrates inadequate knowledge of hand and power tool procedures or policy.

RECORDKEEPING

Copies of manufacturer specifications and manuals, ANSI consensus standards, and applicable regulations will be kept at Pannier Corporation.

The Administrator or designee will maintain records of authorized employees and the type of on-the-job training, if any, that was given.