

HANFORD MISSION SUPPORT CONTRACT

Hand and Portable Power Tools

MSC-PRAC-30486

Revision 0

Effective Date: January 15, 2010

Topic: Safety and Health

Hand and Portable Power Tools

PURPOSE	<p>This practice identifies a key aspect of the Safety and Health (S&H) program, and establishes the requirements for the selection, use, and maintenance of hand tools and portable, power-operated tools, including those activated by an explosive powder charge.</p>
SCOPE	<p>This practice includes the following major sections:</p> <ul style="list-style-type: none">• General Requirements• Electrically Powered Tools• Pneumatic Tools• Hydraulic Power Tools• Powder-Actuated Tools• Abrasive Wheels and Tools• Woodworking Tools• Jacks–Lever and Hatchet, Screw, and Hydraulic <p>The requirements of this practice are consistent with the requirements published in the Hanford Mission Support Contract (MSC) Safety and Health virtual manual.</p>
APPLICATION	<p>This practice applies to Mission Support Alliance (MSA) construction personnel.</p>
GENERAL REQUIREMENTS	<p>Records generated during the performance of this activity are to be included in the Construction Work Package and will be managed in accordance with MSC-PRAC-30374, <i>Construction Work Package</i>.</p> <p>No modifications or additions that affect the capacity or safe operation of tools are made without the manufacturer’s written approval. If the manufacturer will not approve modifications or changes, written approval from a registered professional engineer or Mission Support Alliance (MSA) S&H is obtained. If such modifications or changes are made, the capacity, operation, and/or maintenance instruction plates, tags, or decals are changed accordingly.</p> <p>Managers/Construction Supervisors/Superintendents ensure that tools covered by this practice are:</p> <ul style="list-style-type: none">• Maintained in a safe and functional condition• Inspected prior to use• Tagged or identified as defective and turned in for repair or replacement if found defective

Hand and Portable Power Tools

- In conformance with manufacturer's attachment and energy-level specifications
- Equipped with required guards
- Disconnected from their energy source when changing attachments or conducting repairs/maintenance on the tool
- Not hoisted or carried by attached hoses or electrical cords
- Used with appropriate eye, face, hand, foot, hearing and respiratory protection
- Connected to a ground-fault circuit interrupter (GFCI)

Managers/Construction Supervisors/Superintendents ensure that hand tools are maintained and used properly, and that:

- Wrenches with sprung jaws are not used.
- Impact tools such as drift pins, wedges, and chisels are kept free of mushroomed heads.
- Portable power saws and grinders are equipped with approved blade or wheel guards. Blades and wheels must have the proper rating and revolutions per minute for the tool.
- Wooden handles of tools are kept free of splinters or cracks and are kept tight in the tool.

ELECTRICALLY POWERED TOOLS

Managers/Construction Supervisors/Superintendents ensure that portable electrical tools are:

- Double insulated or grounded in accordance with accepted site electrical safe work practices. Contact MSA S&H for guidance.
- UL listed, 115 or 220 volts AC or AC/DC marked accordingly by the manufacturer.
- Equipped with a constant-pressure switch that shuts off power when pressure is released by the operator.

Hand and Portable Power Tools

NOTE: *Hand-held power grinders with wheels 50 millimeters (2 inches) or less in diameter, and routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jig saws with blade shanks 6.5 millimeters (1/4 inch) wide or less, may be equipped with a positive “ON-OFF” switch.*

PNEUMATIC TOOLS

Managers/Construction Supervisors/Superintendents ensure that portable pneumatic tools are equipped with:

- A tool retainer to prevent the tool from being ejected. Equip nailers or staplers that operate at more than 690 kPa (100 psi) pressure and have automatic fastener feed with a safety device on the muzzle to prevent unexpected ejection of the fasteners.
- Pressure reduction devices to prevent any hose with an inside diameter of 12.7 millimeters (1/2 inch) or greater from whipping in the event of hose failure.
- “Deadman” switches.
- A positive means to secure the tool to the hose or whip to prevent the tool from becoming accidentally expelled.

HYDRAULIC POWER TOOLS

Fluids used in hydraulic powered tools are fire-resistant fluids approved under Schedule 30 of the Bureau of Mines.

POWDER ACTUATED TOOLS

Notification is made to, and a permit is obtained from, the Hanford Fire Department/Fire Marshal when actuators (commonly .22 caliber blank shells) for powder-actuated tools are brought onto the site.

Managers/Construction Supervisors/Superintendents ensure that:

- Operators of powder-actuated tools are qualified in accordance with the manufacturer’s instructions, and this qualification is documented.
- Powder-actuated tools and loads are locked in a container, stored in a safe place when not in use, and are accessible only to authorized personnel.
- Tools are operated in strict accordance with the manufacturer’s instructions. Only the types of fastener and powder loads recommended by the tool manufacturer are used.

Hand and Portable Power Tools

- Prior to use, the operator inspects and tests the tool in accordance with the testing methods recommended by the manufacturer to determine if it is in proper working condition.

NOTE: *Potential exposure to lead is assessed in accordance with practice [MSC-PRAC-30507](#), Lead Control.*

- Prior to driving a fastener, the operator checks the line of fire to ensure that no one may be hurt if the fastener penetrates completely through the work surface.
- Fasteners are not to be driven into very hard or brittle materials; including cast iron, glazed tile, hardened steel, glass block, natural rock, hollow tile, or face brick.
- Fasteners are not to be driven into easily penetrated materials or materials of questionable resistance, unless backed by a material that prevents the fastener from passing completely through the other side.
- Tools are not loaded until just prior to the intended firing time.
- Neither loaded nor empty tools are pointed at any person; hands are kept clear of the open barrel end.
- The tool is held perpendicular to the work surface when fastening into any material, except for specific applications recommended by the tool manufacturer.
- In the event of a misfire, the operator holds the tool firmly against the work surface for a period of 30 seconds and then follows the explicit instructions set forth by the tool manufacturer.
- A sign, at least 200 × 250 millimeters (8 × 10 inches) using boldface type at least 25 millimeters (1 inch) in height, is posted in plain sight on construction projects where tools are used. The sign says: “POWDER-ACTUATED TOOL IN USE” or something similar.
- The tool is not used in an explosive or flammable atmosphere.
- Shells are stored in accordance with requirements on the permit.

Hand and Portable Power Tools

ABRASIVE WHEELS AND TOOLS

Managers/Construction Supervisors/Superintendents ensure that:

- Employees working with grinding machines, cut-off machines, or other applications for abrasive wheels are trained in their safe operation and maintenance.
- Abrasive wheels are handled and stored in a manner that prevents damage to the wheels.

NOTE: *Do not allow abrasive wheels to be placed in a manner that could collect foreign materials such as dirt.*

- Abrasive wheels and the mounting hardware or components of machines on which they are mounted are not modified or altered.
- Abrasive wheels are the correct size, rpm rating, and type for the machine on which they are to be mounted and for the work to be performed.
- Abrasive wheels are “ring tested” before mounting, and visually inspected before use daily.
- After mounting, new wheels are run at least 1 minute at full speed before work is applied or personnel stand in front of, or in-line with, the wheel.

WOODWORKING TOOLS

Equip portable, power-driven circular saws with a blade diameter greater than 50 millimeters (2 inches) with guards above and below the bare plate or shoe. The upper guard covers 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 covers the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. The lower guard automatically and instantly returns to covering position when the tool is withdrawn from the work.

JACKS – LEVER AND HATCHET, SCREW, AND HYDRAULIC

Managers/Construction Supervisors/Superintendents ensure that:

- The manufacturer’s rated capacity is legibly marked on jacks and is not exceeded.
- Jacks are provided with a positive stop to prevent over travel.

Hand and Portable Power Tools

- Blocking and cribbing are provided at the base of the jack when necessary to ensure a firm foundation.
- A wood block is placed between the metal cap of the jack and the load when there is a possibility of slipping.
- After a load has been raised, it is immediately cribbed, blocked, or otherwise secured.
- Jacks are properly lubricated at regular intervals in accordance with the manufacturer's instructions.

FORMS

None

RECORDS IDENTIFICATION

Records Capture Table

Name of Document	Submittal Responsibility	Retention Responsibility
None		

REFERENCES

[MSC-PRAC-30374](#), *Construction Work Package*
[MSC-PRAC-30507](#), *Lead Control*