## Section 48.0
## HAND AND PORTABLE POWER TOOLS

### A. Purpose

The purpose of this procedure is to define **JAGUAR ENERGY SERVICES, LLC** requirements for working safely with hand and portable power tools.

1. All tools are manufactured with safety in mind but, tragically, a serious accident often occurs before steps are taken to search out and avoid or eliminate tool-related hazards.

2. **JAGUAR ENERGY SERVICES, LLC** personnel must learn to recognize the hazards associated with different types of tools and the safety precautions necessary to prevent those hazards.

3. The implementation of this procedure will enable **JAGUAR ENERGY SERVICES, LLC** to comply with OSHA 29 CFR 1926.301 and 302.

### B. Scope

This procedure applies to hand and portable power tools used by **JAGUAR ENERGY SERVICES, LLC** personnel, including tools that are **JAGUAR ENERGY SERVICES, LLC**-owned, employee owned, and customer or contractor owned.

1. Compliance with these rules is mandatory while working with tools at **JAGUAR ENERGY SERVICES, LLC** and customer premises.

2. **JAGUAR ENERGY SERVICES, LLC** personnel are also strongly encouraged to follow safe work practices when working with tools off the job.

### C. Responsibilities

1. The Safety Coordinator orhis/her designee is responsible for ensuring that employees have completed the training required by this procedure.
   (a) Additional responsibilities include:

(i) The implementation of this Policy.
(ii) Documentation of completion by each employee.
(iii) For providing the required funds to properly repair and/or replace tools.

2. The Safety Director is responsible for providing assistance to the Safety Coordinator in the implementation of this Policy.

3. The supervisors are responsible for the safe condition of all tools and equipment used by employees, including tools and equipment that may be furnished by employees.

4. **JAGUAR ENERGY SERVICES, LLC** personnel are responsible for properly using and maintaining hand and portable power tools.
(a) Additional responsibilities include:
(i) Complete the required training on hand and portable tools.
(ii) To use the correct tool for the work to be performed.
(iii) If employees are unfamiliar with the operation of the tool, they must request instruction from their supervisor before starting the job.
(iv) Use appropriate personal protective equipment (PPE) when using hand and portable power tools.

D. **Procedure**

**1. Tool Inspection and Maintenance**
**JAGUAR ENERGY SERVICES, LLC** personnel must visually inspect hand and power tools for external defects, alterations, and damage, before each use.
(a) If there is a defect or evidence of damage, the defective or damaged tool must be removed from service.
(b) Damaged tools must not be used until necessary repairs and tests to render the tool safe have been completed.

2. A tool found altered, modified, damaged, or malfunctioning must not be used and must be removed from service, marked with a tag stating “Danger Do not Operate” and sent to an approved repair or maintenance shop.

3. **JAGUAR ENERGY SERVICES, LLC** personnel may use the Tool Inspection Checklist provided in this procedure to guide the inspection process for both hand and portable power tools. (x-ref tool inspection checklist)

**4. Hand Tool Safety**

Hand tools are tools that are non-powered.

(a) Examples include:
- (i) Screwdrivers
- (ii) Hammers
- (iii) Wrenches
- (iv) Pry bars
- (v) Chisels
- (vi) Saws
- (vii) Knives
- (viii) Jacks

(b) The greatest hazards posed by hand tools result from misuse and improper maintenance.

(c) To do a job safely, **JAGUAR ENERGY SERVICES, LLC** personnel need not only the correct tools, but training in their proper and safe use.

(d) Any employee unfamiliar with a tool or operation should contact their supervisor for instruction and guidance.

(e) Whenever a new piece of equipment is acquired or a procedure changed, everyone involved should receive instruction and guidance from a supervisor.

(f) No single tool can do every job efficiently and safely.

(g) If it could, you would need only that one tool.

(h) Screwdrivers are not chisels, and files are not pry bars.

(i) **JAGUAR ENERGY SERVICES, LLC** personnel should make sure that they use the correct tool for the job.

**5. Screwdriver Safety**

(a) When working with electrical apparatus, be sure to use a completely insulated screwdriver.
- (i) Screwdrivers with a metal shaft that goes through to the end of the handle can be a shock hazard.

(b) Never use screwdrivers to check electrical circuits.

(c) Do not hold an object or device in the palm of one hand and press a screwdriver into it.
- (i) Place the object on a bench, table, or vise and position your hand so that if the screwdriver slips, it will not strike your hand or arm.

(d) Never use a screwdriver as a makeshift punch, wedge or pry bar.
  (i) Using a screwdriver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees.

(e) Never hammer on a screwdriver or grasp it with pliers for turning leverage.

(f) Keep screwdrivers in good repair.
  (i) Check for a broken handle, bent blade, full or twisted tip. A sharp, square-edged bit is less likely to slip than a dull, rounded one.

**6. Pliers Safety**

(a) Do not use pliers as a substitute for hammers or wrenches.

(b) Use insulated pliers when doing electrical work.

(c) Inspect insulation frequently to make sure that it is free of breaks or cracks.

**7. Hammer Safety**

(a) Always wear safety goggles or a faceshield when hammering.

(b) Use the correct hammer for the type of work to be done.
  (i) Various types of hammers are designed for specific jobs and should not be used for other purposes.

(c) When using a hammer, be sure that you have an unobstructed swing. Look out for overhead interference.
  (i) Inspect all hammers before use for a loose handle, mushroomed head, or chipped face.

**8. Wrench Safety**

(a) When using wrenches, select one with the size and jaws for the job.
  (i) Do not use a wrench with too long a handle.
  (ii) Never use a pipe as a wrench handle extension.
  (iii) Too much leverage can ruin a tool and cause injury.

(b) Use a wrench that fits the nut properly to avoid slipping and damage to the nut.

(c) To avoid sudden slips, always pull on the wrench instead of pushing against the fixed jaw.
  (i) Be sure to stand in a balanced position.

(d) The best way to free a frozen nut or bolt is to use penetrating oil.
(e) Then use a striking-face box wrench or other suitable heavy-duty wrench.
(f) Do not use a wrench if its jaws are sprung.

**9. Pry Bar Safety**

(a) Ensure that the bite of the bar is secure under the load by first applying slight pressure.
(b) Check your balance prior to exerting full force.
(c) Do not use a cheater bar.

**10. Chisel Safety**

(a) Always wear safety goggles or a face shield when using chisels.
(b) Do not use chisels with mushroomed heads.
    (i) The heads can shatter on impact and cause fragments to fly towards the face.
(c) Cold chisels used for cutting metal should be made from high carbon steel.
    (i) A cold chisel head should be dressed to a curve of about l/8 inch as soon as it begins to crack or check.
    (ii) Dressing allows the chisel to withstand a maximum amount of pounding.

**11. Saw Safety**

(a) All hand saws should be kept sharp and clean.
(b) When cutting, use slow, deliberate strokes.
    (i) Forcing the cut can make the blade buckle and snap and jump out of the work piece and onto your hand.
(c) Do not hold work in your hand when using a hacksaw; put it in a vise.
    (i) A hacksaw blade should be installed with the teeth pointing forward.
(d) An overheated hacksaw blade can break.
    (i) Use light machine oil on the blade to keep it cool.

**12. Knife Safety**

(a) A primary hazard in the use of knives is slipping due to a dull knife. Keep knives sharp and clean.

(i) Replace utility knife blades when dull.

(b) Always cut in a direction away from the body.
   (i) If this is not possible, keep the hands and body clear of the knife stroke.

(c) Knives should be carried in sheaths or holders.
   (i) Never leave knives lying on benches, where they can cause injury.
   (ii) When not in use, keep blades guarded or placed in a protective rack.

**13. Jack Safety**

(a) Before using a jack, make sure that it has a rating sufficient to lift and support the load.
   (i) The rated load should be clearly visible and permanently marked on the casting.
   (ii) Know the weight of the load to be raised or moved.

(b) Place jacks in a firm foundation.

(c) Block the jack if necessary to prevent slippage.

(d) Crib or secure loads after they have been raised.

(e) If a jack is out of order for any reason, it must be removed from service and tagged accordingly.

(f) Lubricate jacks at least every six months.

**14. Hand Tool Handling and Storage**

(a) To reduce puncture-type injuries, do not carry a variety of hand tools in your pocket.
   (i) Carry tools in a tool belt or toolbox.
   (ii) Canvas tool bags are often desirable for carrying awkward or long-handled tools, or for hoisting tools.
   (iii) When carrying a sharp cutting tool, such as an ax or large knife, protect the blade with a shield or carry it in a toolbox, with the cutting edge down.

(b) Store your tools in your company vehicle with the cutting edge down, pointing away from someone who might reach for them.
   (i) Store **JAGUAR ENERGY SERVICES, LLC** owned tools in the District tool storage shed when not in use.

(c) Maintain good housekeeping habits.
   (i) Place tools where they will not create a tripping hazard.
   (ii) Clean up machine oil spills promptly.

(iii) Dispose of trash in appropriate receptacles.

**15. Portable Power Tool Safety**

**JAGUAR ENERGY SERVICES, LLC** personnel often use tools that are powered by electricity, compressed air, and hydraulics.

(a) Employees must learn to recognize the hazards associated with these types of power tools and the safety precautions necessary to prevent accidents.
  (i) As with all tools, if employees are unfamiliar with the operation of the tool, they must request instruction from their supervisor before starting the job.

(b) **JAGUAR ENERGY SERVICES, LLC** personnel must use appropriate personal protective equipment (PPE) when using hand and portable power tools.

(c) **JAGUAR ENERGY SERVICES, LLC** personnel should be aware of the following general precautions for portable power tools:
  (i) All hand held power tools, such as a drill, must be equipped with a switch that is held in the "on" position (deadman switch).
  (ii) Maintain secure footing and good balance when using power tools.
    (i) Special precautions, such as bracing, must be observed when using high torque tools.
  (iii) Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits, and cutters.
  (iv) Observers should be kept at a safe distance away from the work area.
  (v) Never jerk the cord or hose to disconnect it from the receptacle.
  (vi) Keep cords and hoses away from heat, oil, and sharp edges.
  (vii) Do not hoist or lower tools by the cord.
  (viii) Secure your work with a clamp or vise whenever possible, leaving both hands free to handle the power tool.
  (ix) Avoid accidental starting.
    (i) Do not hold a finger on the switch button while carrying an energized tool.
  (x) Hazardous moving parts of a power tool need to be safeguarded.

(xi) Reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees.

(xii) Examples are:

(i) Belts
(ii) Gears
(iii) Shafts
(iv) Pulleys
(v) Sprockets
(vi) Spindles
(vii) Drums
(viii) Fly wheels
(ix) Chains
(x) Never remove or defeat a safety guard. (x-ref Machinery and Machine Guarding)

**16. Electrically Powered Tool Safety**

(a) Many customer work sites have the potential for flammable or explosive atmospheres to be present.

(i) Prior to using any electrically powered tool (or other tool that can provide a source of ignition), obtain customer approval in the form of a Hot Work Permit. (x-ref Hot Work Permit)

(b) Electrically powered tools must be of an approved, double-insulated type, or grounded to conform to current electrical standards.

(c) Electrically powered hand tools used on construction sites, on temporary wired circuits, or in wet environments must be used in conjunction with an approved ground fault circuit interrupter (GFCI). (x-ref Assured Grounding)

**17. Bench, Stand, and Portable Grinder Safety**

(a) Powered abrasive grinding, cutting, polishing, and wire buffing tools, including bench, stand and portable grinders, create special safety problems because they may throw off fragments.

(b) The following precautions apply specifically to these types of power tools:

(i) Follow manufacturer's recommendations when mounting or changing an abrasive wheel, wire brush, buffing wheel, or other cutting wheel.

(ii) Closely inspect and ring test an abrasive wheel before mounting.

(iii) To test, tap the wheel gently with a light, non-metallic instrument.
  (i) An undamaged wheel will give a clear metallic tone or "ring."
  (ii) A cracked or dead wheel could fly apart during use and must not be used.

(c) Do not stand directly in front of a wheel during start-up due to the possibility of a wheel disintegrating (exploding) upon energization.

(d) When using an abrasive wheel:
  (i) Stand aside and allow the wheel to run at full speed for a full minute before starting to grind.
  (ii) Adjust grinder work rest within 1/8 inch of the face of the wheel.
  (iii) Cracked wheels will generally come apart in this start-up mode.
  (iv) Make grinding contact without bumping or intermittent impact.
  (v) Grind only on the face of a straight wheel.
  (vi) Disc wheels are used for side grinding.
  (vii) Material must not be forced into the wheel.

(e) When using the wire brush:
  (i) Hold the work piece at the horizontal center of the brush.
  (ii) Let the wire tips do the work.
  (iii) Forcing work into the brush results in:
    (i) No increase of cutting action
    (ii) An increase in wire breakage
    (iii) A tendency for work to become snagged

(f) Small pieces being brushed should be held in a simple jig or fixture which will prevent the operator’s hands from contacting the surface of the rotating brush.

(g) A straight, heavy, steel rod or bar should be used to clean wire wheels.

(h) When cleaning small brushes, the operator should use a work rest.

(i) Never clamp a handheld grinder in a vise.

**18. Pneumatically Powered Tool Safety**

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

(a) Pneumatically powered tools may be required in customer sites where there is a danger of fire or explosion.

(b) When working with pneumatic tools, the following safety precautions must be followed:

- (i) Combustible gas, nitrogen and oxygen must not be used to operate air-operated tools.
- (ii) When connecting the tool, ensure that the source is compressed air intended for tools.
- (iii) This compressed air is called “plant air” in many customer sites.
- (iv) Usually fittings will be incompatible between compressed air hoses and other utility connections, but the employee must make sure that the tool is properly connected.
- (v) Pneumatic tools must be secured to the hose by some positive means to prevent the tool from accidentally disconnecting.
- (vi) Safety clips or retainers for pneumatic-impact (percussion) tools must be securely installed and maintained to keep attachments, such as a chisel on a chipping hammer, from being accidentally expelled.
- (vii) Pneumatic hand tools must be disconnected from the source, and any pressure in lines must be released before any adjustments or repairs are made.
- (viii) The manufacturer’s safe operating pressure must not be exceeded for hose, pipe, valves, filters and fittings.
  - (i) The correct operating pressure must be regulated.
  - (ii) All hoses over 1/2 in. (1.27 cm) in diameter must have a safety device (pressure regulator) at the source of supply or branch line to reduce pressure if the hose fails.
  - (iii) All connections must be provided with a device to prevent whipping.
- (ix) Generally, compressed air should not be used for cleaning equipment, tools or clothing.
  - (i) Compressed air may be used for cleaning purposes if the pressure is reduced to less than 2.1 x 105 Pa (30 psi) at the approved nozzle, and there is effective chip guarding

and personal protective equipment is worn (such as safety glasses with side shields, screens, or baffles).

**19. Hydraulically Powered Tool Safety**

(a) The fluid used in hydraulically powered tools must be heat resistant fluid and must retain its operating characteristics at the most extreme working temperatures to which it will be exposed.

(b) Refer to the manufacturer's manual for the safe operating pressure of tools hoses, pipes, valves, filters, and fittings.

(i) Do not exceed the manufacturer's recommended safe working pressure.

**20. Personal Protective Equipment**

**JAGUAR ENERGY SERVICES, LLC** personnel must use appropriate personal protective equipment (PPE) when using hand and portable power tools. (x-ref Personal Protective Equipment)

(a) General PPE requirements for working with hand and portable power tools include the following:

(i) Wear eye protection whenever you are cutting, sawing, drilling, or grinding materials that may create chips, dust, or flying particles.

(ii) During grinding or other activities which may generate flying particles, a face shield should be used in conjunction with safety glasses or goggles.

(i) A face shield is not considered primary eye protection.

(iii) Wear gloves when working with hammers, pliers, and wrenches to avoid hand and finger injuries.

(iv) Wear hearing protection when working with noisy tools. (X-Ref Hearing Conservation Procedure.)

(v) Remove all jewelry, rings, bracelets, necklaces and other items that can get caught in tools and machinery and cause an injury.

## E. Training Requirements

1. **JAGUAR ENERGY SERVICES, LLC** personnel will be trained on the following topics:

(a) Basic principles for safe use of hand and power tools.
(b) Examples of tool hazards.
(c) Operation of specific tools.
(d) Personal protective equipment requirements.
(e) Proper maintenance and storage of tools.
(f) Hand and portable power tool inspection.
(g) Contents of this procedure.

## F. Training Frequency

1. **JAGUAR ENERGY SERVICES, LLC** personnel will be trained according to the following schedule:
   (a) Initially upon hire.
   (b) If the employee is observed not properly implementing this procedure.
   (c) When new tools are introduced to the workplace.
   (d) As necessary thereafter.

**JAGUAR ENERGY SERVICES, LLC**
**HAND AND PORTABLE POWER TOOLS**
**INSPECTION CHECKLIST**

**Directions:** Use the checklist to assist with the inspection of hand and portable power tools. Inspect all tools prior to use. Do not use any defective, damaged or unsafe tool.

**Part I**
**Hand Tools and Equipment**

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|---|---|
| | Are all tools and equipment (both **JAGUAR ENERGY SERVICES, LLC** and employee owned) used by employees at their workplace in good condition? |
| | Are hand tools, such as chisels and punches, that develop mushroomed heads during use, reconditioned or replaced as necessary? |
| | Are broken or fractured handles on hammers and similar equipment replaced promptly? |
| | Are worn or bent wrenches replaced regularly? Are jacks checked periodically to ensure they are in good operating condition? |
| | Are appropriate handles used on files and similar tools? |
| | Are appropriate safety glasses, face shields, etc. used while using hand tools or equipment which might produce flying materials or be subject to breakage? |
| | Are employees made aware of the hazards caused by faulty or improperly used hand tools? |
| | Are tool handles wedged tightly in the head of all tools? |
| | Are tool cutting edges kept sharp so the tool will move smoothly without binding or skipping? |
| | Are tools stored in dry, secure locations where they won't be tampered with? |
| | Is eye and face protection used when driving hardened or tempered spuds or nails? |

**Part II**

**Portable Power Tools and Equipment**

| | |
|---|---|
| | Are grinders, saws and similar equipment provided with appropriate safety guards? |
| | Are power tools used with the correct shield, guard, or attachment, recommended by the manufacturer? |
| | Are portable circular saws equipped with guards above and below the base shoe? |
| | Are circular saw guards checked to assure they are not wedged up, thus leaving the lower portion of the blade unguarded? |
| | Are rotating or moving parts of equipment guarded to prevent physical contact? |
| | Are all cord-connected, electrically operated tools and equipment effectively grounded or of the approved double insulated type? |
| | Are effective guards in place over belts, pulleys, chains, sprockets, on equipment such as concrete mixers, and air compressors? |
| | Are portable fans provided with full guards or screens having openings ½ inch or less? |
| | Is hoisting equipment available and used for lifting heavy objects, and are hoist ratings and characteristics appropriate for the task? |
| | Are ground-fault circuit interrupters provided on all temporary electrical 15 and 20 ampere circuits, used during periods of construction? |
| | Are pneumatic and hydraulic hoses on power operated tools checked regularly for deterioration or damage? |