

## APPENDIX 8

### Portable Power Tools

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#### WAC 296-807-100

Portable power tools and their moving parts create the potential for workplace injuries. Installed and used properly, safeguards can protect workers by helping to reduce or control tool hazards.

For requirements on machine guarding go to Machine Guarding, WAC 296-806. (An appendix in this manual.)

A valuable NIOSH web site that contains safety checklists for multiple items is: <http://www.cdc.gov/niosh/docs/2004-101/indexalpha.html>  
Parish/School or Agencies often have multiple tools that are covered in WAC 296-807 located throughout the site but especially in Maintenance and Custodial Departments.

#### WAC 296-807-100 - Scope.

The following sections in WAC 296-807 that apply to the tools and equipment shown in Table 1 of WAC 296-807 include:

- Section 110. Hand-held portable power tools.
- Section 120. Hand-held portable circular saws.
- Section 130. Hand-held portable belt sanding machines.
- Section 140. Hand-held portable compressed air powered tools. It also applies to air hose and plastic pipe used to supply compressed air to these tools.
- Section 150. Powder actuated fastening systems designed to use the expanding gases from a powder load to propel a stud, pin, fastener or other object into hard structural material.
- Section 160. Consumer and commercial power lawnmowers.
- Section 170. Portable hand or power-operated:
  - Hydraulic jacks
  - Mechanical ratchet jacks
  - Mechanical screw jacks.
- Section 180. Portable tools using abrasive wheels.

Some of the more general portions of the WAC will be outlined in this section. Specific details of safeguarding individual tools can be found in WAC 296-807.

**WAC 296-807-11005** - Make sure the operating switch is located in a position that makes it difficult to accidentally operate the tool.

Use the correct operating switch.

Make sure hand-held gasoline-powered chain saws have a constant pressure throttle control that will shut off power to the chain when the pressure is released.

Use a constant pressure switch that will shut off the power when the switch is released to turn on or operate any hand-held power tool.

Exemptions - Some tools can use a lock-on feature with the constant pressure switch if the lock-on feature can be turned off with a single motion of the same finger(s) that turned it on. You can use a lock-on feature with these hand-held tools:

- Drills
- Tappers
- Fastener drivers
- Grinders using a wheel greater than two inches in diameter
- Disc sanders
- Belt sanders
- Reciprocating saws
- Saber, scroll and jig saws using a blade with a shank width greater than one-quarter inch
- Other similarly operating powered tools.

You can use a positive "on-off" switch with these hand-held tools:

- Platen sanders
- Grinders using a wheel two inches or less in diameter
- Routers
- Planers
- Laminate trimmers
- Nibblers
- Shears
- Saber, scroll and jigsaws using a blade with a shank width of one-quarter inch ( $\pm$  .05 inch) or less.

**WAC 296-807-12005 - Portable Circular Saw Guarding Requirements.**

Use a constant pressure switch to turn on or operate any circular saw using a blade that has a diameter greater than two inches.

Remove cracked saws and saw blades from service.

Make sure power driven circular saws that have a blade diameter larger than two inches have guards above and below the base plate (shoe) as listed in Table 2, Portable circular saw guarding requirements.

- Upper Guard
  - It must cover the blade to the depth of the teeth, except for the minimum arc necessary to allow the base to tilt for bevel cuts.
- Lower Guard
  - It must cover the blade to the depth of the teeth, except for the minimum arc necessary to allow proper retraction of the guard and contact with the work.
  - It must automatically and instantly return to the position covering the blade when the saw is withdrawn from contact with the work.

**WAC 296-807-13005 - Guard portable belt sanding machines.**

Guard the nip points where the sanding belt runs onto a pulley and the unused run of the sanding belt.

**WAC 296-807-140 - Compressed air tools.**

This section applies to portable, hand-held compressed air powered tools. It also applies to air hose and plastic pipe used to supply compressed air to these tools.

Make sure compressed air and compressed air tools are used safely.

Make sure a tool nozzle or an air hose opening is not pointed at anyone or allowed to contact a person's body.

Air pressure must be reduced to less than 30 p.s.i. static pressure at the nozzle when you are cleaning with compressed air.

Make sure the air hose and hose connections are suitable for the air pressure and use.

Make sure any plastic pipe used to supply compressed air for portable air tools has been specifically identified by the manufacturer as being suitable for compressed air use.

Relieve the pressure in the air line before disconnecting a compressed air tool from the line or disconnecting a hose joint unless there is automatic valve closing protection at the joint being separated.

Disconnect the tool from the compressed air supply before repairs are done. Make sure that eye protection is worn at all times by the person operating the tool and or other persons in the area where tools are being used.

**WAC 296-807-18010 - Make sure machines have safety guards.**

Use abrasive wheels only on machines that have safety guards.

Make sure the safety guard:

- Is mounted so it maintains proper alignment with the wheel.
- Is mounted with fasteners strong enough to keep the guard in position if a wheel breaks.
- Is positioned to deflect pieces of an accidentally broken wheel away from the operator.
- Covers the spindle end, nut and flange projections.

**WAC 296-807-18015 - Make sure safety guards are in good functional condition.**

Replace any safety guard that is damaged, bent or severely worn or has been hit by parts from a breaking wheel.

## NIOSH General Portable Power Tools Checklist

1. Are all portable hand or power tools maintained in a safe condition?
2. If compressed air is used for cleaning purposes, is it used at pressures less than 30 psi and only with effective chip guarding and personal protective equipment?
3. Are power tools equipped and used with guards whenever possible?
4. Are all belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating or moving parts of equipment guarded if operator is exposed to contact or if they otherwise create a hazard?
5. Is all necessary personal protective equipment provided whenever the use of hand and power tools could create falling, flying or splashing debris, or harmful dusts, fumes, mists, vapors or gases.
6. If tools and equipment are brought in from home, are they subject to the same safety requirements as supplied tools and equipment?
7. Are all chain saws, percussion tools, and hand-held powered circular saws (with blades greater than 2 inches in diameter) equipped with a constant pressure switch that shuts off power when released?
8. Are all hand-held powered drills; tappers; fastener drivers; horizontal, vertical and angle grinders (with wheels greater than 2 inches in diameter); disc sanders (with discs greater than 2 inches in diameter); belt sanders; reciprocating saws; saber, scroll, jig saws (with blade shanks greater than a nominal one-fourth (1/4) inch); and other similarly power tools equipped with a constant pressure switch or control?

**Note:** They may be equipped with a lock-on control provided the turnoff can be accomplished by a single motion by the same finger or fingers that turns it on.

The Construction standard requires a "momentary contact on-off control" instead of a constant pressure switch or control. This means that if the switch is pressed, the tool turns on and if the switched is pressed again, the tool turns off.

9. Are all-hand held powered platen sanders, grinders (with wheels two-inch diameter or less), routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jig saws (with blade shanks one-fourth (1/4) of an inch wide or less), equipped with a positive "on-off" control?

**Note:** A positive "on-off" control means a switch that you must push to turn the tool on and then push again to turn it off. Control switches as described in questions seven and eight may also be used.

10. On hand-held power tools, is the operating control located to minimize the possibility of accidental operation?

**Note:** This requirement does not apply to concrete vibrators, concrete breakers, powered tampers, jackhammers, rock drills, garden appliances, household and kitchen appliances, personal care appliances, medical or dental equipment, or to fixed machinery.

11. Are all portable power driven circular saws (with blade diameter greater than 2 inches) equipped with guards above and below the base plate or shoe?

**Note:** This requirement does not apply to meat cutting saws.

12. Does the upper guard on a circular saw 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?
13. Does the lower guard on a circular saw cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work?
14. When a circular saw is removed from the material being sawed, does the lower guard automatically and instantly return to the covering position?
15. Are belt-sanding machines provided with guards at each nip point where the sanding belt runs onto a pulley?
16. If a saw cracks, is it immediately removed from service?
17. Are all portable electrically powered tools properly grounded or double insulated?
18. Are impact tools, such as drift pins, wedges, and chisels, kept free of mushroomed heads?
19. Are the wooden handles of tools kept free of splinters or cracks and are they fixed tightly in the tool?
20. Is it prohibited to lower or hoist a tool by the cord?
21. Do woodworking tools meet the American National Standards Institute (ANSI) safety codes?

### **Pneumatic Power Tools and Hose**

22. Are pneumatic power tools secured to the hose or whip by some positive means, to prevent the tool from being accidentally disconnected?
23. Are safety clips or retainers used on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled?
24. Are all pneumatically driven nailers, staplers, and other similar equipment which have automatic fastener feeds and which operate at more than 100 psi pressure at the tool equipped with a safety device on the nozzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface?

25. Are all compressed air hoses and hose connections designed for the pressure and service to which they are subjected?
26. Is it prohibited to lower or hoist tools by the hose?
27. Do all hoses (exceeding one-half inch inside diameter) have safety devices at the source of the supply or branch line, to reduce pressure in case of hose failure?
28. Are airless spray guns [of the type which atomize paints and fluids at high pressure (1,000 pounds or more per square inch)] equipped with automatic or visible manual safety devices that prevent accidental release of paint or fluid?

**Note:** In lieu of the above, a diffuser nut which will prevent high pressure, high velocity release while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming in contact with the operator (or other equivalent protection) shall be provided.

29. Are all fuel-powered tools stopped while being refueled, serviced, or maintained?
30. Is all fuel transported, handled and stored in accordance with applicable regulations?
31. When fuel powered tools are used in enclosed spaces, are measures taken to prevent the build-up of toxic gases?

# Power Lawnmowers

WAC 296-807-160

## Summary



### YOUR RESPONSIBILITY:

#### Make sure power lawnmowers are used safely



#### Exemption:

This section doesn't apply to commercial equipment that is:

- Designed primarily for agricultural purposes

**OR**

- Designed primarily to be operated with tractors having at least 20 horsepower for cutting grass or other growth on highways.

### You must

#### DESIGN AND CONSTRUCTION

Make sure equipment meets minimum design and construction requirements

WAC 296-807-16005 ..... 160-3

#### LABELS

Make sure the equipment has the appropriate labels and decals

WAC 296-807-16010 ..... 160-4

#### BEFORE STARTING

Make sure the operator understands and follows instructions before starting the mower

WAC 296-807-16015 ..... 160-5

- Continued -





# Power Lawnmowers

WAC 296-807-160

## Summary

### WAC 296-807-160 (Continued)

#### USE

Use the equipment safely  
WAC 296-807-16020 ..... 160-6

#### NONELECTRIC MOWERS

Protect employees from fuel and exhaust  
WAC 296-807-16025 ..... 160-7

#### WALK-BEHIND MOWERS

Use walk-behind mowers safely  
WAC 296-807-16030 ..... 160-8

#### RIDE-ON MOWERS

Use ride-on mowers safely  
WAC 296-807-16035 ..... 160-8

# Power Lawnmowers

WAC 296-807-160

## Rule



### DESIGN AND CONSTRUCTION

#### WAC 296-807-16005

#### Make sure equipment meets minimum design and construction requirements

#### You must

- (1) Make sure equipment meets ANSI design and construction requirements.
- Make sure power lawnmowers manufactured on or after August 1, 2003, meet the requirements of the appropriate ANSI standard:
    - ANSI B71.1-1998, American National Standard for Consumer Turf Care Equipment - Walk-Behind Mowers and Ride-On Machines with Mowers - Safety Specifications
  - OR**
  - ANSI B71.4-1999, American National Standard for Commercial Turf Care Equipment - Safety Specifications.
  - Make sure noncommercial power lawnmowers manufactured before the effective date of this chapter meet the requirements of ANSI B71.1-1968, American National Standard Safety Specifications for Power Lawnmowers.



#### Note:

There may be a statement on the tool or in the instruction manual indicating the tool meets the requirements of the appropriate ANSI standard. If in doubt, check with the manufacturer.

- Continued -



# Power Lawnmowers

WAC 296-807-160

## Rule

### WAC 296-807-16005 (Continued)

#### You must

- (2) Position, guard or shield all power-driven shafts, chains, belts, gears, friction drive components, nip and pinch points, and any exposed components hot enough to cause burns while:
  - Starting
  - Mounting
  - Operating the machine.
- (3) Have a shutoff device that:
  - Will stop the motor or engine

**AND**

  - Has to be intentionally and manually activated before the motor or engine can be restarted.

## LABELS

### WAC 296-807-16010

#### **Make sure the equipment has the appropriate labels and decals**

#### You must

- (1) Make sure all positions of the operating controls are clearly identified.
- (2) Make sure warning and caution labels or decals on the mower are readable and replace them if necessary.

# Power Lawnmowers

WAC 296-807-160

## Rule

### BEFORE STARTING

WAC 296-807-16015

**Make sure the operator understands and follows instructions before starting the mower**

#### You must

- (1) Make sure the operator understands all instructions for operating the mower that are in the manufacturer's instructions and on the machine.
  - Make sure the operator is thoroughly familiar with the controls and proper use of the mower before starting it.
- (2) Make sure the proper guards, plates, grass catcher or other safety devices are in place before starting the mower.



# Power Lawnmowers

WAC 296-807-160

## Rule

### USE

WAC 296-807-16020

### Use the equipment safely

#### You must

- (1) Follow the manufacturer's instructions for safe use of the equipment.
- (2) Keep people clear of discharge opening(s).
- (3) Keep people's hands and feet clear of rotating parts.
- (4) Clear the area of objects such as rocks, toys, wire, bones, sticks, etc., which could be picked up and thrown by the blade and create a hazard for the operator or other persons.
- (5) Make sure the operator stops the engine before:
  - Leaving the equipment
  - Unclogging the grass discharge chute
  - Cleaning the mower.
- (6) Make sure the operator wears safety goggles or safety glasses with side shields when operating the mower.



**Note:**

Use the personal protective equipment (PPE) hazard assessment to determine the type of footwear and other PPE the employees need to wear. See WAC 296-800-160, PPE, in the Safety and Health Core Rules.

# Power Lawnmowers

WAC 296-807-160

## Rule



### NONELECTRIC MOWERS

WAC 296-807-16025

#### Protect employees from fuel and exhaust



**Exemption:**

This section doesn't apply to electric engines.

#### You must

(1) Make sure to:

- Keep the gas cap on whenever the engine is running.
- Shut off the engine before and during refueling.

(2) Make sure not to refuel the machine indoors.

(3) Make sure not to run the engine in a closed area.



**Exemption:**

You can refuel the machine indoors or run the engine in a closed area if the area was specifically designed for such use.



# Power Lawnmowers

WAC 296-807-160

## Rule

### WALK-BEHIND MOWERS

WAC 296-807-16030

#### Use walk-behind mowers safely

##### You must

- (1) Make sure the operator wears substantial footwear when operating a walk-behind mower.



##### Note:

Use the personal protective equipment (PPE) hazard assessment to determine the type of footwear and other PPE the employees need to wear. See WAC 296-800-160, PPE, in the Safety and Health Core Rules.

##### You must

- (2) Mow across the face of a slope.

### RIDE-ON MOWERS

WAC 296-807-16035

#### Use ride-on mowers safely

##### You must

- (1) Make sure not to carry passengers.
- (2) Make sure the operator looks down and behind before and while moving backwards.