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# GENERAL REQUIREMENTS – SMALL TOOLS

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## 437-004-2220 General Requirements – Small Tools.

- (1) Employers are responsible for the safe condition of tools and equipment used by employees. This includes tools and equipment that belong to employees.
- (2) Do not use defective tools.
- (3) When not in use, place tools where they will not create a hazard.
- (4) Do not use tools whose electric cords have damaged insulation or defective parts.
- (5) Do not leave power supply lines or hoses where they may be damaged or create a hazard.
- (6) Tool handles must have no sharp edges or splinters and must be firmly attached to the tool. Wooden handles of tools must be of firm straight grained stock.
- (7) Dress or grind the heads of shock tools (such as hammers, sledges, and cold chisels) as they begin to mushroom or crack. When they show a tendency to chip, take them out of service.
- (8) Keep the cutting edges of tools uniformly sharp.
- (9) Use heavy leather holsters, guards or equivalent protection for sharp-edged or sharp-pointed tools carried on the worker's person.
- (10) When using sharp-edged cutting tools, wear appropriate protective equipment such as gloves, aprons and leg guards.
- (11) Use spark-resistant hand tools in explosive or flammable atmospheres.

**NOTE: Compressed air used for cleaning.** See 4/M, OAR 437-004-1505(4) for rules about cleaning with compressed air or gas.

**Stat. Auth.:** ORS 654.025(2) and 656.726(4).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 4-1998, 1/8/28/98, ef. 10/1/98.

**437-004-2230 Guarding and Operation of Portable Powered Tools.****(1) Portable powered tools.****(a) Portable circular saws.**

**(A)** All portable, power-driven circular saws with a blade diameter greater than 2 inches must have guards above and below the base plate or shoe. The upper guard must cover the saw to the depth of the teeth, except for the minimum arc to permit tilting the base for bevel cuts. The lower guard must cover the saw to the depth of the teeth, except for the minimum arc that allows proper retraction and contact with the work. When the tool is taken out of the work, the lower guard must automatically and quickly return to covering position. This does not apply to meat cutting saws.

**(B)** In addition to the provisions in **(1)(a)(A)** above, the lower guard must have a lug or lever, remote from the blade teeth, that allows the operator to safely lift the guard for starting unusual cuts.

**(b) Switches and controls.**

**(A)** All hand-held powered circular saws with a blade diameter more than 2 inches, electric, hydraulic or pneumatic chain saws and percussion tools without positive accessory holding means must have a constant pressure switch or control that will shut off the power when pressure is released.

**(B)** The following hand-held powered tools must have a constant pressure control switch. They may have a lock-on control if a single motion of the same finger or fingers that turns it on can turn it off.

**(i)** Tappers, drills, fastener drivers, horizontal, vertical and angle grinders with wheels more than 2 inches in diameter. Disc sanders with discs more than 2 inches in diameter. Belt sanders, reciprocating saws, saber, scroll and jig saws with blade shanks more than a nominal 1/4-inch and other similarly operating powered tools.

**(C)** All other hand-held powered tools may have either a positive "on-off" control, or other controls as in **(1)(b)(A)** and **(B)** above.

**(i)** Saber, scroll and jig saws with non-standard blade holders may use blades with shanks which are non-uniform in width, if the narrowest part of the shank is an integral part in mounting the blade.

**(ii)** Measure the blade shank width at the narrowest part of the blade when saber, scroll and jig saws have non-standard blade holders.

**(iii)** "Nominal" in this subparagraph means +0.05-inch.

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**(D) Exclusions.** This subparagraph does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, garden appliances, household and kitchen appliances, personal care appliances or to fixed machinery.

**(c) Power chain saws.**

**(A)** In addition to **(1)(b)(A)** above, all power chain saws must meet American National Standard B175.1-1991, Safety Code for Power Chain Saws.

**(B)** Inspect power chain saws daily when in use and always keep them in good repair. Do not use saws with cracked or loose handle bars or defective parts.

**(C)** Stop power chain saw engines before fueling.

**(D)** Power chain saws must have a working chain brake if originally equipped with one.

**(E)** Chain brakes and other safety features must always work correctly.

**(F)** All hand-held gasoline powered chain saws must have a constant pressure throttle control that will shut off power to the saw chain when the pressure is released.

**(G)** Employees using chain saws must wear flexible ballistic nylon pads, chaps or other equivalent protection in a manner that protects the legs from the thigh to the top of the boot. Employers must provide and pay for this equipment.

**(H)** Do not drop-start chain saws or other power saws.

**NOTE:** Drop-starting saws is permitted outside of the basket of an aerial lift only after ensuring that the area below the aerial lift is clear of people.

**(I)** The operator must have secure footing when starting the saw.

**(J)** Start and operate the saw only when all other workers are clear.

**(K)** Stop the engine when carrying the power saw but not between cuts during consecutive felling, bucking, limbing or cutting operations.

**(i)** The chain must not be turning and the operator's hand must be off the throttle lever while moving between work locations.

**(ii)** Carry small chain saws at your side with the bar of the saw pointed to the rear.

**(L)** Stop the engine for all cleaning, refueling, adjustments, and repairs to the motor.

(d) **Portable belt sanders.** Belt sanders must have guards at each nip point where the sanding belt runs onto a pulley. These guards must prevent the operator's hands or fingers from contacting the nip points. The unused run of the sanding belt must have guards against accidental contact.

(e) **Cracked saws.** Do not use cracked saws.

(f) **Grounding.** Portable electric powered tools must meet the requirements of Subdivision 4/S.

## (2) Pneumatic tools and hose.

(a) Only use compressed air supply hose and hose connections rated for the pressure and service required by the tools they serve.

(b) There must be a shut-off valve at the manifold or permanent pipe outlet of the compressed air supply.

(c) Do not couple or uncouple hose without first shutting off the compressed air supply unless the couplers have check valves that automatically shut it off.

(d) Pneumatic fastener-driving tools and other power-driven fastener tools, except as allowed in (e) below, must have a safety device to prevent ejection of nails, staples or fasteners when the tool is not in firm contact with the work.

(e) You may use power-driven fastener-driving tools without the safety device only when using staples with a diameter of .0475-inch (18 gauge A.W.G.) or less and the operator and all workers within 15 feet are wearing suitable eye protection. This does not apply to office staplers.

(f) Do not use oxygen or combustible gases to drive pneumatic tools.

(g) Direct the exhaust from pneumatic power tools away from the operator.

## (3) Portable abrasive wheels.

### Definitions.

**Mounted wheels.** Mounted wheels of 2-inch diameter or smaller, of various shapes. They may be either organic or inorganic bonded abrasive wheels. They are secured to plain or threaded steel mandrels.

**Organic bonded wheels.** Organic wheels are wheels bonded by an organic material such as resin, rubber, shellac or other similar bonding agent.

**Portable grinding.** A grinding operation where the grinding machine is hand-held and may move easily from one location to another.

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**Reinforced wheels.** The term “reinforced” as applied to grinding wheels defines a class of organic wheels that contain strengthening fabric or filament. The term “reinforced” does not cover wheels using such mechanical additions as steel rings, steel cup backs or wire or tape winding.

**Safety guard.** A safety guard is an enclosure to restrain the pieces of the grinding wheel if it breaks while in use.

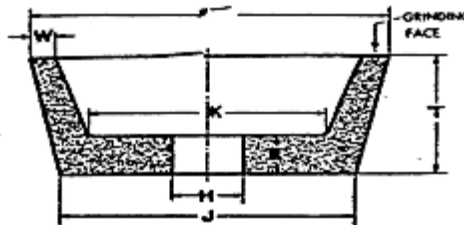
**Tuck pointing.** Removal, by grinding, of cement, mortar or other non-metallic jointing material.

**Tuck pointing wheels.** Tuck pointing wheels, Type 1, reinforced organic bonded wheels have diameter, thickness and hole size dimension. They are subject to the same limitations of use and mounting as Type 1 wheels.

**Limitation:** Wheels used for tuck pointing should be reinforced, organic bonded.

**Type 11 flaring cup wheels.** Type 11 flaring cup wheels have double diameter dimensions D and J, and in addition have thickness, hole size, rim and back thickness dimensions. Grinding is always done on the rim face, W dimension. Type 11 wheels are subject to all limitations of use and mounting listed for Type 6 straight sided cup wheels.

**Type 11 Flaring Cup Wheels**



**Figure 1**

Side grinding wheel with a wall flared or tapered outward from the back. Wall thickness at the back is normally greater than at the grinding face (W).

**Limitation:** Minimum back thickness, E dimension, should not be less than one-fourth T dimension. Also, when unthreaded hole wheels are specified the inside flat, K dimension, must be large enough to hold a suitable flange.

**Type 6 straight cup wheels.** Type 6 cup wheels have diameter, thickness, hole size, rim thickness and back thickness dimensions. Grinding is always done on the rim face, W dimension.

## Type 6 Straight Cup Wheels

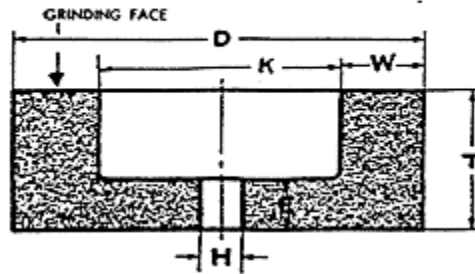


Figure 2

Side grinding wheel with a diameter, thickness and hole with one side straight or flat and the opposite side recessed. This type, differs from Type 5 in that the grinding is on the wall of the abrasive created by the difference between the diameter of the recess and the outside diameter of the wheel. Therefore, the wall dimension "W" takes precedence over the diameter of the recess as an essential intermediate dimension to describe this shape type.

**Limitation:** Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition, when unthreaded hole wheels are specified, the inside flat, K dimension, must be large enough to hold a suitable flange.

**Type one straight wheels.** Type 1 straight wheels have diameter, thickness and hole size dimensions and should be used only on the periphery. Mount type 1 wheels between flanges.

## Type 1 Straight Wheels

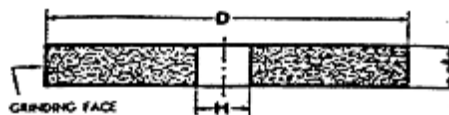


Figure 3

Peripheral grinding wheel with a diameter, thickness and hole.

**Limitation:** Hole dimension (H) should not be greater than two-thirds of wheel diameter dimension (D) for precision, cylindrical, centerless or surface grinding applications. Maximum hole size for all other applications should not exceed one-half wheel diameter.

**(a) General requirements.** Use abrasive wheels only on machines with safety guards as in **OAR 437-004-2230(3)(a)** through **(d)**.

**(A) Exceptions.** The requirements of paragraph **OAR 437-004-2230(3)(a)** do not apply to the following classes of wheels and conditions.

(i) Wheels for internal work while within the work being ground;

(ii) Mounted wheels, 2 inches and smaller in diameter, used in portable operations (see definition of Mounted Wheel); and



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(iii) Types 16, 17, 18, 18R, and 19 cones and plugs and threaded hole pot balls where the work offers protection.

**(B)**

(i) A safety guard must cover the spindle end, nut and flange projections. Mount the safety guard so as to maintain proper alignment with the wheel. The strength of the fastenings must exceed the strength of the guard.

(ii) **Exception.** If the work provides a suitable measure of protection to the operator, safety guards may allow exposure to the spindle end, nut and outer flange. Where the work entirely covers the side of the wheel, you may omit the side covers of the guard.

(iii) **Exception.** On portable machines designed for and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels and tuck pointing wheels, you may leave the spindle end, nut and outer flange exposed.

**(b) Cup wheels.** Protect cup wheels (Types 6 and 11) by:

**(A)** Using safety guards in **OAR 437-004-2230(3)(a)**; or,

**(B)** Using special “**revolving cup guards**” that mount behind the wheel and turn with it. They must be steel or other material with adequate strength and must enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features must conform with all regulations. (See **OAR 437-004-2230(3)(e)**.) Keep a maximum clearance of 1/16-inch between the wheel side and the guard; or,

**(C)** Using another form of guard that insures protection equal to that provided by the guards in **OAR 437-004-2230(3)(a)(A)** or **(B)**.

**(c) Vertical portable grinders.** Safety guards on machines known as right angle head or vertical portable grinders must have a maximum exposure angle of 180 degrees. Place the guard between the operator and the wheel during use. Adjust the guard to deflect pieces of a broken wheel away from the operator. (See Figure 4.)

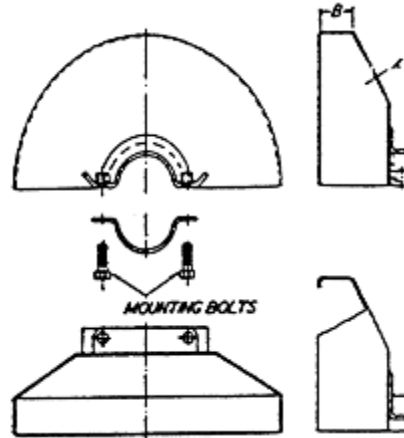


Figure 4

(d) **Other portable grinders.** The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on other portable grinding machines must not exceed 180 degrees. Enclose the top half of the wheel. (See Figures 5 and 6.)

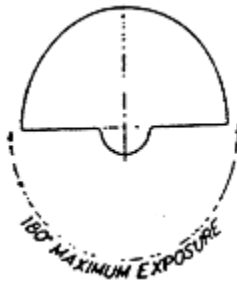


Figure 5

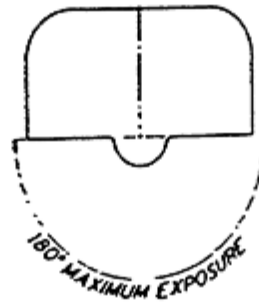


Figure 6

(e) **Mounting and inspection of abrasive wheels.**

(A) Immediately before mounting, inspect all wheels to make sure they are not damaged. Check the spindle speed of the machine before mounting the wheel to be sure it does not exceed the maximum operating speed marked on the wheel.

(B) Grinding wheels must fit freely on the spindle and remain free under all grinding conditions. Keep a controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) to avoid excessive pressure from mounting and spindle expansion.

(C) All contact surfaces of wheels, blotters and flangers must be flat and free of foreign matter.

(D) When using a bushing in the wheel hole it must not exceed the width of the wheel nor contact the flanges.

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(E) Do not operate an abrasive wheel designed to be held by flanges unless it is properly mounted between suitable flanges. Flanges must be at least one-third the diameter of the wheel, except for those types requiring flanges of a special design.

(F) Install blotters (compressible washers) between flanges and abrasive wheel surfaces to insure uniform distribution of flange pressure.

(f) **Excluded machinery.** OAR 437-004-2230(3) does not cover natural sandstone wheels and metal, wooden, cloth or paper discs with a layer of abrasive on the surface.

## (4) Tools driven by internal combustion engines.

(a) Tools driven by internal combustion engines must have a positive "On" and "Off" ignition switch that will remain in either position.

(b) Tools driven by internal combustion engines must have effective means to control power except those that operate at constant speed. Throttle controls must return the engine to idling speed when released.

(c) Tools driven by internal combustion engines must have a self-rewinding starting device or be equally safe.

(d) Exhaust ports on tools driven by internal combustion engines must have mufflers and deflect exhaust fumes away from the operator when the tool is in use in its normal operating position.

(e) Stop the engine before fueling tools driven by an internal combustion engine.

(f) You must be able to quickly remove sling-carried tools powered by attached portable internal combustion engines.

(g) Inspect the fuel system of sling-carried tools before each use. Fix any defect immediately.

## (5) Explosive actuated fastening tools.

### Definitions.

**Angle control.** A safety feature designed to prevent a tool from operating when tilted beyond a pre-determined angle.

**Cased Power Load.** A power load with the propellant contained in a closed case.

**Caseless Power Load.** A power load with the propellant in solid form not requiring containment.

**Direct-Acting Tool.** A tool in which the expanding gas of the power load acts directly on the fastener to be driven.

**Explosive power load**, also known as **load**. Any form of any substance that can produce a propellant force.

**Fixture**. A special shield that gives equal protection where the standard shield is not usable.

**Hammer-operated piston tool – low-velocity type**. A tool that uses a heavy mass hammer and a load to move a captive piston to drive a stud, pin or fastener into a work surface. It always starts the fastener at rest and in contact with the work surface. Its design must limit the mean velocity of the stud, pin or fastener to a maximum of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

**Head**. That part of a fastener that extends above a work surface after being properly driven.

**High-velocity tool**. A tool or machine that uses a load to propel or discharge a stud, pin or fastener, at velocities greater than 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

**Indirect-Acting Tool**. A tool in which the expanding gas of the powder load acts directly on a captive piston that in turn drives the fastener.

**Low-velocity piston tool**. A tool that uses a load and captive piston to drive a stud, pin or fastener into a work surface. Its design must limit the mean velocity to a maximum of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

**Misfire**. A condition in which the powder load fails to ignite after an attempt to fire the tool.

**Powder-Actuated Fastening System**. A method comprising the use of a powder-actuated tool, a power load and a fastener.

**Powder-Actuated Tool**, also known as **Tool**. A tool that uses the expanding gases from a power load to drive a fastener.

**Protective shield or guard**. A device or guard to confine flying particles, attached to the muzzle end of the tool.

**Stud, pin, or fastener**. A fastening device specifically designed and manufactured for use in explosive-actuated fastening tools.

**Test Velocity**. A series of deliberately free-flighted fasteners whose velocities are measured 6 1/2 feet from the muzzle end of the tool using accepted ballistic test methods.

**To chamber**. To fit properly without the use of excess force and without being loose in the chamber.

**Tool**. Unless indicated otherwise, an explosive-actuated fastening tool and all its accessories.

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## (a) General requirements.

(A) Explosive-actuated fastening tools actuated by explosives or any similar means that propel a stud, pin, fastener or other object to affix it to another object must meet the design requirements in paragraph (b) below. This requirement does not apply to devices designed for attaching objects to soft construction materials, such as wood, plaster, tar, dry wallboard and the like or to stud welding equipment.

(B) Operators and assistants using tools must wear eye protection. If required by the working conditions, use head and face protection as required under Personal Protective Equipment (4/1).

## (b) Inspection, maintenance, and tool handling.

(A) **High-velocity tools.** High velocity tools must have these characteristics:

(i) The muzzle end of the tool must have a protective shield or guard at least 3 1/2 inches in diameter, mounted perpendicular to and concentric with the barrel. It must confine any flying fragments or particles that might be a hazard when fired.

(ii) Where a standard shield or guard will not work or where it does not provide adequate protection, an alternate device is acceptable. It must be built by the manufacturer of the tool, and provide an equal degree of protection.

(iii) It must be impossible to fire the tool unless it has a standard protective shield or guard, or the special device in (ii) above.

(iv)

(I) The firing mechanism must prevent the tool from firing during loading or preparation to fire, or if dropped while loaded.

(II) Firing of the tool must require at least two separate and distinct actions of the operator. The final firing movement must be separate from the action of bringing the tool into the firing position.

(v) The tool must not work unless the operator is holding the tool against the work surface with a force at least 5 pounds more than the total weight of the tool.

(vi) The tool must not be operable with the standard guard indexed to the center position if any bearing surface of its guard tilts more than 8 degrees from contact with the work surface.

(vii) The tool must have a positive way of varying the power or there must be some other way for the operator to select a power level adequate to perform the work without excessive force.

**(B)** Tools of the low-velocity piston type must have the characteristics in **(i)** through **(iv)** below.

**(i)** The muzzle end of the tool must allow suitable protective devices, designed and built by the manufacturer of the tool, to be mounted perpendicular to the barrel. There must be a standard spall shield with each tool.

**(ii)**

**(I)** In ordinary use the tool must not propel or discharge a stud, pin or fastener while loading or during preparation to fire or if dropped while loaded.

**(II)** Firing of the tool must depend on at least two separate and distinct actions of the operator. The final firing movement must be separate from the operation of bringing the tool into the firing position.

**(iii)** The tool must not be operable unless the operator is holding it against the work surface with a force at least 5 pounds greater than the total weight of the tool.

**(iv)** The tool must have a positive way of varying the power or there must be some other way for the operator to select a power level adequate to perform the work without excessive force.

**(C)** Hammer operated piston tools, low-velocity type, must have the characteristics in **(i)** through **(iv)** below.

**(i)** The muzzle end of the tool must allow suitable protective devices, designed and built by the manufacturer of the tool, to be mounted perpendicular to the barrel. There must be a standard spall shield with each tool.

**(ii)** In ordinary use the tool must not propel or discharge a stud, pin or fastener while loading or during preparation to fire or if dropped while loaded.

**(iii)** Firing of the tool must depend on at least two separate and distinct actions of the operator. The final firing movement must be separate from the operation of bringing the tool into the firing position.

**(iv)** The tool must have a positive way of varying the power or there must be some other way for the operator to select a power level adequate to perform the work without excessive force.

**(c) Requirements for loads and fasteners.**

**(A)** There must be a standard way to identify the power levels of loads.

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- (B) Do not use a load (cased or caseless) that will accurately chamber in any existing approved commercially available low-velocity piston tool or hammer operated piston tool, low-velocity type, if it will cause a fastener to have a mean velocity greater than 300 feet per second when measured 6.5 feet from the muzzle end of the barrel. No individual test firing of a series can exceed 300 feet per second by more than 8 percent.
- (C) Only use fasteners specifically made for a given tool.
- (d) Operating requirements.**
- (A) Before using a tool, inspect it to see that it is clean, all moving parts operate freely and that the barrel is free of obstruction.
- (B) When a tool develops a defect during use, immediately stop using it.
- (C) Do not load tools until just prior to the intended firing time. Do not point loaded or empty tools at anyone.
- (D) Do not leave loaded tools unattended.
- (E) If the tool misfires, hold it in the operating position for at least 30 seconds. Then try to operate the tool a second time. Wait another 30 seconds with the tool in the operating position. If it still does not fire remove the explosive load according to the manufacturer's instructions.
- (F) Do not leave tools unattended where they are available to unauthorized persons.
- (G) Do not drive fasteners into very hard or brittle materials like cast iron, glazed tile, surface-hardened steel, glass block, face brick or hollow tile.
- (H) Do not drive fasteners into soft materials so that the projectile could exit the other side.
- (I)
- (i) Do not drive fasteners directly into materials such as brick or concrete closer than 3 inches from the unsupported edge or corner or into steel surfaces closer than 1/2-inch from the unsupported edge or corner, unless the tool has a special guard. **(Exception:** Low-velocity tools may drive no closer than 2 inches from an edge in concrete or 1/4-inch in steel.)
- (ii) When fastening other materials, such as a 2-inch by 4-inch wood section to a concrete surface, it is permissible to drive a fastener of no greater than 7/32-inch shank diameter not closer than 2 inches from the unsupported edge or corner of the work surface.

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- (J) Do not drive fasteners through existing holes unless you use a positive guide for accurate alignment.
- (K) Do not drive a fastener into a spalled area caused by an unsatisfactory fastening.
- (L) Do not use explosive actuated tools in an explosive or flammable atmosphere.
- (M) Use all tools with the correct shield, guard or attachment recommended by the manufacturer.
- (N) Take damaged or defective tools out of service. Inspect tools at regular intervals and repair them according to the manufacturer's specifications.

**Stat. Auth.:** ORS 654.025(2) and 656.726(4).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 4-1998, f/8/28/98, ef. 10/1/98.  
OR-OSHA Admin. Order 9-2006, f. 9/22/06, ef. 9/22/06.  
OR-OSHA Admin. Order 7-2008, f. 5/30/08, ef. 5/30/08.

## 437-004-2240 Power Lawnmowers.

### (1) General requirements.

- (a) Powered walk-behind, riding-rotary and reel lawnmowers designed for sale to the general public must meet the design specifications in "American National Standard Safety Specifications for Power Lawnmowers" ANSI/OPEI B71.1-1996. These specifications do not apply to a walk-behind mower converted to a riding mower by the addition of a sulky. Also, these specifications do not apply to flail mowers, sickle bar mowers or mowers designed for commercial use.
- (b) Guard or place all power-driven chains, belts and gears to prevent accidental contact with the operator, during normal starting, mounting and operation of the machine.
- (c) There must be a shutoff device to stop the motor or engine. It must require manual and intentional reactivation to restart the motor or engine.
- (d) Clearly mark all positions of the operating controls.
- (e) The phrase, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording must be clearly visible at an engine starting control point on self-propelled mowers.

### (2) Walk-behind and riding rotary mowers.

- (a) Enclose the mower blade except on the bottom. The enclosure must extend to or below the lowest cutting point of the blade in the lowest blade position.
- (b) There must be instructions near the opening warning not to use the mower without either the catcher assembly or the guard in place. This does not apply to side discharge mowers or those with a mulching plug in place.



(c) Properly and completely installed catcher assemblies must not create a hazard.

(d) The word "Caution," or stronger wording, must be on the mower at or near each discharge opening.

(e) Blade(s) must stop from the manufacturer's specified maximum speed within 15 seconds after declutching or shutting off power.

### **(3) Walk-behind rotary mowers.**

(a) The horizontal angle of the grass discharge opening(s) in the blade enclosure, must not directly discharge toward the operator area.

(b) There must be one of the following at all openings in the blade enclosure intended for the discharge of grass:

(A) A minimum unobstructed horizontal distance of 3 inches from the end of the discharge chute to the blade tip circle.

(B) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar must be no higher than the bottom edge of the blade enclosure.

(c) Keep the handle attached to the mower to prevent loss of control by unintentional uncoupling while the engine is running.

(d) There must be a positive upstop or latch for the handle in the normal operating position(s). The upstop must not be subject to unintentional disengagement when using the mower. The upstop or latch must not allow the center or the handle grips to come closer than 17 inches horizontally behind the closest path of the mower blade(s) unless manually disengaged.

(e) A swing-over handle, that complies with the above requirements, is acceptable.

(f) Wheel drive disengaging controls, except deadman controls, must move opposite to the direction of the vehicle motion in order to disengage the drive. Deadman controls must automatically interrupt power to a drive when the operator lets go and may operate in any direction to disengage the drive.

### **(4) Riding rotary mowers.**

(a) Opening(s) must not allow grass or debris to discharge directly toward any part of an operator seated in a normal operator position.

(b) One of the following must be at all grass discharge openings in the blade enclosure:

(A) A minimum unobstructed horizontal distance of 6 inches from the end of the discharge chute to the blade tip circle.

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## POWER LAWMOWERS / OTHER PORTABLE TOOLS & EQUIPMENT

Oregon Administrative Rules  
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(B) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar must be no higher than the bottom edge of the blade enclosure.

(c) Mowers must have stops to prevent jackknifing or locking of the steering.

(d) Mowers must have working brakes or a manufacturer designed system for stopping.

(e) Hand-operated wheel drive disengaging controls must move opposite to the direction of vehicle motion to disengage the drive. Foot-operated wheel drive disengaging controls must be depressed to disengage the drive. Deadman controls, both hand and foot-operated, must automatically interrupt power to a drive when the operator removes the actuating force and may operate in any direction to disengage the drive.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 4-1998, f/8/28/98, ef. 10/1/98.

### 437-004-2260 Other Portable Tools and Equipment.

#### (1) Jacks.

##### Definitions.

**Jack.** A jack is an appliance for lifting and lowering or moving horizontally a load by pushing.

**Rating.** The maximum safe load throughout its course of travel.

##### (a) Loading and marking.

(A) Do not use a jack with a rating less than the weight of the intended load.

(B) Keep the rated load legibly and permanently marked on the jack.

##### (b) Operation and maintenance.

(A) If the jack is not on a firm foundation, block its base. If the cap might slip, place a block between it and the load.

(B) Watch the stop indicator and do not go past the limit of travel.

(C) Quickly crib, block or otherwise secure the load after raising it.

**NOTE:** This does not apply when changing wheels on 4-wheeled vehicles when only one wheel is raised and the employee does not place any part of their body under the vehicle.

(D) Hydraulic jacks exposed to freezing temperatures must contain an adequate antifreeze liquid.

## OTHER PORTABLE TOOLS & EQUIPMENT

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(E) Inspect jacks often enough to assure safe operation but at least:

- (i) Once every 6 months for constant or intermittent use; or
- (ii) Immediately after an abnormal load or shock.

(F) Mark defective jacks and do not use them until repairs are made.

**(2) Abrasive blast cleaning nozzles.** Blast cleaning nozzles must have an operating valve that must be held open manually. Provide a support on which the nozzle may rest when it is not in use.

**(3) Hand-powered equipment.**

- (a) Each hand-powered hoist must have an effective brake or equivalent and a ratchet and pawl strong enough to hold the maximum load in any position.
- (b) Do not allow hand crank handles to work loose from the drive shaft.

**(4) Wheelbarrows, hand trucks, dollies, pallet jacks.**

- (a) Wheelbarrows, hand trucks, dollies and pallet jacks must be appropriate for the specific work. Do not load them beyond safe capacity. Bodies and frames must be metal or strong wood and able to withstand severe handling and the intended loads.
- (b) Keep wheelbarrows, hand trucks, dollies and pallet jacks in good repair.
- (c) Do not leave wheelbarrows, hand trucks, dollies, and pallet jacks where they can tip, fall or roll.

**(5) Varmint killers (explosive gas and oxygen).** A device for injecting a mix of propane (LPG) and oxygen into ground holes and then igniting it to kill varmints.

**Note:** OAR 437-004-0710 Compressed Gases apply to all cylinders of gas.

- (a) Follow all manufacturer instructions for use and maintenance of this equipment or this standard, whichever is safest.
- (b) When transporting these devices in vehicles (other than in the field of use), or when done using them for more than one hour, back out the regulator pressure control screws.
- (c) Employees under 18 years old may not operate this equipment.
- (d) Employers must train all employees to operate this equipment safely and according to the manufacturer's instructions and these rules.

**(e) Operating procedures.**

**(A)** Tanks, valves, couplings, regulators, hose, and apparatus must be free from oily or greasy substances. Do not handle oxygen tanks or apparatus with oily hands or gloves. Never allow a jet of oxygen to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

**(B) Handling tanks.**

**(i)** Unless tanks are secured on a special truck, remove regulators and install valve-protection caps, when provided, before moving tanks.

**(ii)** Close tank valves when work is done.

**(iii)** Close valves of empty tanks.

**(iv)** Do not use a hammer or wrench to open tank valves. If

**(v)** opening the valve by hand does not work, check with the supplier.

**(vi)** Do not repair or tamper with tank valves. Notify the supplier if you have trouble with a tank and follow their instructions as to its disposition.

**(vii)** Do not remove the stem from a diaphragm-type tank.

**(C) Attachments and use.**

**(i)** Fuel-gas tanks must have the valve end up when they are in use. Store and ship liquefied gases with the valve end up.

**(ii)** Before removing a regulator from a tank valve, close the tank valve and release the gas from the regulator.

**(iii)** Do not use regulators with cracked, broken, or defective parts.

**(iv)** Before attaching the regulator to a tank, fully release the regulators pressure adjusting screw.

**(v)** Close the tank valve and release the gas from the regulator before removing it from the tank.

**Stat. Auth.:** ORS 654.025(2) and 656.726(4).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 4-1998, f/8/28/98, ef. 10/1/98.  
OR-OSHA Admin. Order 9-2006, f. 9/22/06, ef. 9/22/06.

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