

Hazard Review

- **Electricity**
- **Flying object**
- **Heavy lifting**
- **Kickback**
- **Noise**
- **Pinch point**
- **Repetitive motion**
- **Slip**
- **Vibration**

Related Safe Work Practices

- **Electrical Safety, General**
- **Hearing Conservation**
- **Injury and Illness Prevention**
- **Injury and Illness Reporting and Management**
- **Lifting, Body Mechanics, and Ergonomics**
- **Personal Protective Equipment**
- **Power Tools**
- **Walking and Working Surfaces**

Required Personal Protective Equipment

- **Face Shield**
- **Hearing Protective Device**
- **Safety Glasses**

Authority

- **California Code of Regulations, Title 8, Sections 1510, 1521, 1522, 2340.1, 2395.45, 2718, 3273, 3314, 3328, 3340, 3382, 3425, 4002, 4070, 4186, 4208, 4296, 4297, 4300, 4300.1, 4309, 4310, 5096, 5162**

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This safe work practice addresses the hazards of Powered Saws and is organized into the following areas:

- A. Definitions
- B. General Powered Saw Safety

C. Specific Powered Saw Safety

This SWP is dedicated to helping you avoid an injury or illness from known hazards. It is written for fixed, installed equipment; not portable powered tools. It is intended to be used in conjunction with the Powered Saws Self Assessment Checklist. We advise you to follow these recommendations.

For portable powered tools, see the Power Tools Safe Work Practice.

Review the definition and general sections in all cases and complete the Self Assessment Checklist items applicable to the equipment you are using.

The known hazard and potential injury and illness related Powered Saws based on RPD injury and illness data include: ^{1,2}

Known Hazard	Potential Injury, Illness
Electricity	Shock, burn, cardiac arrest, death
Flying object	Laceration, cut, puncture, foreign object in eye
Heavy lifting	Back strain, cumulative trauma
Kickback (struck by object)	Hand trauma, body trauma, laceration
Noise	Hearing loss
Pinch point	Caught, crush, amputation
Repetitive motion	Pain, impairment of bodily capacity, carpal tunnel
Slip	Bruise, contusion, sprain, strain, fracture from fall and impact
Vibration	Swelling, inflammation

All tasks require that you complete required training. This includes:

- A review of any manufacturer's operating manuals
- Review of the safety data sheets (SDSs) for each chemical
- Training on this SWP and those listed above as related. Training on SWPs must be completed before initial assignment and every 2 years thereafter

You are advised to read and follow this SWP and any related SWPs. Obtain advice from a Qualified Person if you have any questions.

A Qualified Person is a person **designated** by the employer; and by reason of **training**, experience, or instruction who has demonstrated the ability to perform safely all assigned duties; and, when required is properly licensed in accordance with federal, state, or local laws and regulations.³

¹ Data based on RPD Injury and Illness database information obtained from September 5, 2007 to September 5, 2012 for all class 7344 carpenters.

² "Hand and Power Tools, Hazard Recognition". Retrieved September 11, 2012 from <http://www.osha.gov>.

³ Qualified Person definition obtained from "Safety and Health Training and Instruction Requirements". Retrieved September 11, 2012 from <http://www.dir.ca.gov>.

A. DEFINITIONS⁴

Block: A short block of wood, provided with a handle similar to that of a plane and a shoulder at the rear end, which is used for pushing short stock over revolving cutters.

Crosscutting: A sawing operation through the thickness of the workpiece made across the grain in natural wood or across the shorter dimension on a rectangular workpiece of reconstituted wood.

Push stick: A narrow strip of wood or other soft material with a notch cut into one end which is used to push pieces of material through woodworking machines.

Qualified Person: A person designated by the employer; and by reason of training, experience, or instruction that has demonstrated the ability to perform safely all assigned duties; and, when required is properly licensed in accordance with federal, state, or local laws and regulations.⁵

Ripping: A sawing operation made through the thickness of the workpiece with the grain of natural wood, along the long dimension of a rectangular workpiece, and usually parallel to that edge on reconstituted wood products.

Table Saw: A machine designed to use a circular saw blade mounted on an arbor below the work support means which can be stationary or moving or a combination of both. A guiding means is used for all operations when manually feeding the stock. The arbor or its support can be fixed, or be capable of being

⁴ California Code of Regulations, Title 8, Section 4297. "Woodworking Machines and Equipment", definitions. Retrieved September 19, 2012 from <http://www.dir.ca.gov>.

⁵ Qualified Person definition obtained from "Safety and Health Training and Instruction Requirements". Retrieved September 11, 2012 from <http://www.dir.ca.gov>.

tilted at an angle to the work support means of less than 90 degrees to each other. See figure A.

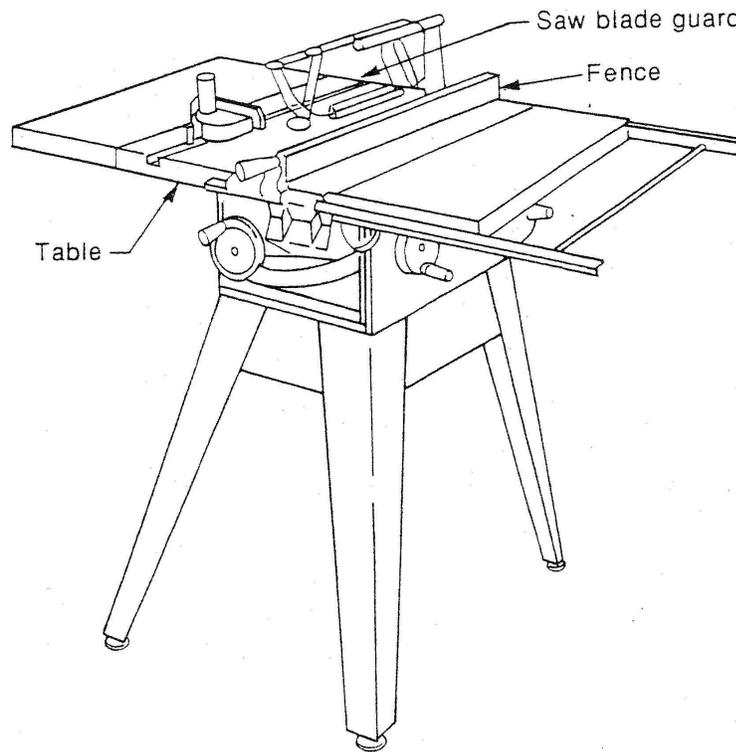


Figure A⁶

B. GENERAL POWERED SAW SAFETY

BEFORE

1. Read and follow this SWP and any related SWPs. Obtain advice from a Qualified Person if you are not familiar with the operation of this machine or have any questions.
2. Read and follow information provided by the manufacturer including but not limited to the operating instructions, user manual, and warnings posted on the machine before operating the machine. Learn the machine's application and limitations as well as the specific hazards before operation.

⁶ California Code of Regulations, Title 8, Section 4300.1 Table Saws – Manual Feed (class b) definitions. Retrieved November 2, 2012 from <http://www.dir.ca.gov>.

3. Use the right machine. Don't force a machine or an attachment to do a job for which it was not designed. Damage to the machine and or injury may result.
4. Inspect the saw on a regular basis using the self assessment checklist to ensure it is ready for operation.
5. Provide for adequate space surrounding the work area.
6. Provide overhead lighting. Keep your work area well-lit to help prevent tripping or placing arms, hands, and fingers in danger.
7. Ensure that saws are set up and maintained as per below:
 - a. Powered saws receive preventative maintenance including cleaning and maintenance of woodworking equipment and guards, sharpening of blades, removal of cracked or damaged blades, cutting heads kept sharp, properly adjusted and secured in accordance with the manufacturer's instructions.
 - b. Saw frames or tables are constructed with lugs cast on the frame or with an equivalent means to limit the size of the saw blade that can be mounted, so as to avoid over speed caused by mounting a saw blade larger than intended.
 - c. Moving parts of belt and pulley drives are located 7 feet or less above the floor or working level guarded.
 - d. The entire metal framework on electrically driven machines is grounded, including the motor, motor casing, legs, and frame. This includes other equipment such as lights that may be mounted on the machine.
 - e. Powered saws circuit breakers and fuse boxes are labeled to indicate their purpose.
 - f. The hood mounting is adequate in strength to resist any reasonable side thrust or other force tending to throw it out of line.
 - g. Hoods are made of adequate strength to resist blows and strains incidental to reasonable operation, adjusting, and handling, and designed as to protect the operator from flying splinters and broken saw teeth. It is made of material that is soft enough so that it will be unlikely to cause tooth breakage.
 - h. Powered Saws are equipped with a quick shutoff switch readily accessible to the operator.
 - i. Circular saws, where there is a possibility of contact with the portion of the saw blade either beneath or behind the saw table are covered with an exhaust hood. If no exhaust system is required, the guard is arranged to prevent accidental contact with the saw blade.
 - j. Hoods are mounted to insure operation will be positive, reliable, and in true alignment with the saw blade.

- k. Operators are protected from possible contact when reaching under the saw table.
- l. Machines, parts of machines, or component parts of machines which create hazardous revolving, reciprocating or similar action, including pinch points and shear points are guarded.

DURING

- 8. Avoid awkward hand positions. A sudden slip could allow your hand to contact the cutter and result in injury.
- 9. Never saw a large workpiece that cannot be controlled. Support long work with an outboard tool rest. Get help when cutting awkward, bulky or heavy material (e.g. sheets of plywood).
- 10. Burrs on cut pieces may be sharp. Handle the cut pieces with care until the burrs can be removed.

C. SPECIFIC POWERED SAW SAFETY

BAND SAWS

BEFORE

- 11. Inspect the saw to ensure it meets the following requirements:
 - a. The band saw wheel is fully enclosed.
 - b. A tension control device to adjust for proper blade tension is included.
 - c. Portions of the saw or knife blade are enclosed or guarded except that portion between the bottom of the guide rolls and the table.
 - d. The guard is adjusted as close as possible to the table without interfering with the movement of the stock.
 - e. The down travel guard from the upper wheel to the guide rolls is adjusted so the blade will travel within the angle or channel.
 - f. The feed are protected with a semi cylindrical guard to prevent the hands from coming in contact with the in-running rolls at any point.

DURING

- 12. Use the saw in accordance with the guidelines set forth by the manufacturer.

RADIAL SAWS

BEFORE

13. Inspect the saw to ensure it meets the following requirements:
 - a. The upper half of the saw (from the blade down to the end of the saw arbor) is enclosed with a fixed hood.
 - b. The guard for the lower half is self-adjusting (i.e. it floats, rises, and falls adjusting automatically to the thickness of the stock).
 - c. The saw contains an automatic device to return the saw to the back of the table after the cut has been made.
 - d. Limit chains or other positive means are used to prevent the saw blade from moving beyond the front edge of the table.
 - e. The direction of the saw blade is conspicuously marked on the hood. Additionally, is a permanent label not less than 1-1/2 inches by 3/4-inch is affixed to both sides of the rear of the guard at approximately the level of the arbor, reading: DO NOT RIP FROM THIS END, or equivalent wording.

DURING

14. Use the saw in accordance with the guidelines set forth by the manufacturer.

TABLE SAWS

BEFORE

15. Inspect the saw to ensure it meets the following requirements:
 - a. Each hand-fed table saw is guarded by a hood which completely encloses that portion of the saw blade above the table and that portion of the blade above the material being cut.
 - b. Spreaders are provided and are fastened securely to the saw(s) and designed and installed as follows:
 - i. Ripsaw spreaders shall be made of hard tempered steel, or its equivalent, and shall be thinner than the saw kerf. The spreader shall be of sufficient width to provide adequate stiffness or rigidity to resist any reasonable side thrust or blow tending to bend or throw it out of position.
 - ii. Ripsaw spreaders shall be attached so as to remain in true alignment with the saw blade even when either the blade or table is tilted, and shall be placed so that there is not more than 1/2-inch space between the spreader and the back of the saw blade when the largest blade is mounted in the machine. The provision of a spreader in connection with grooving, dadoing, or rabbeting is

not required. On the completion of such operations, the spreader shall be immediately replaced.

- c. The hood automatically adjusts itself to the thickness of the material being cut and remains in contact with the material being cut at the point where the stock encounters the saw blade. Alternatively, the hood is affixed or there is a manually adjusted hood or guard.
- d. A magnetic switch or other device is installed to prevent automatic restarting of the machine after a power failure.
- e. Personnel are trained and required and monitored to follow lockout/tagout procedures for cleaning, repairing, servicing, setting up or adjusting powered saws (see the *Lockout and Tag SWP*).

DURING

- 16. Use the saw in accordance with the guidelines set forth by the manufacturer.

For any questions, please contact EHS at 415-831-2780.

References

“Hand and Power Tools, Hazard Recognition”. Retrieved September 11, 2012 from <http://www.osha.gov>.

Qualified Person definition obtained from “Safety and Health Training and Instruction Requirements”. Retrieved September 11, 2012 from <http://www.dir.ca.gov>.

“Guide for Protecting Workers from Woodworking Hazards”. Retrieved September 11, 2012 from <http://www.osha.gov>.

Woodworking Machines and Equipment”, general. Retrieved September 11, 2012 from <http://www.dir.ca.gov>.

Standards Board Adopts Radial Arm Saw Safety Revisions. Cal-OSHA Reporter, Vol 40 (No 3), 00-010494. This reference applies to #49 - #51 only.