

Cut-off saws

Although there are many specific types of cut-off saws, they are all circular saws designed to cross cut stock at exact lengths and angles. The following are some of the common cut-off saws used today.

Miter saw

A miter saw is a versatile circular power saw mounted on a hinged frame and designed to make accurate angle cuts. When the blade is lowered in a chopping motion, the blade cuts through the work piece, passing through a slot in the base.



DEWALT Industrial Tool Inc.
Miter saw

Chop saw

A chop saw is a lightweight circular saw mounted on a spring-loaded pivoting arm and supported by a metal base. The operator clamps the stock to the fence, pulls the blade through the work piece, and guides the saw back to its upright position. Chop saws typically do not have the cutting capacity of miter saws.



DEWALT Industrial Tool Inc.
Chop saw

Swing saw

Swing saws, both overhead and inverted, are swung from a pivot, either above or below the saw arbor. The operator positions the stock, pulls the saw across to make the cut, and then returns the saw to its original position.

Jump saw

Similar to an inverted swing saw, a jump saw is a circular saw located underneath the stock and hold down (clamp) and is attached on an arm that pivots from behind the saw arbor at approximately the same height. After the stock is positioned, the blade comes up, cuts the stock, and drops below the table surface. These “undertable” saws are normally operated by a knee or foot pedal.

Hazard

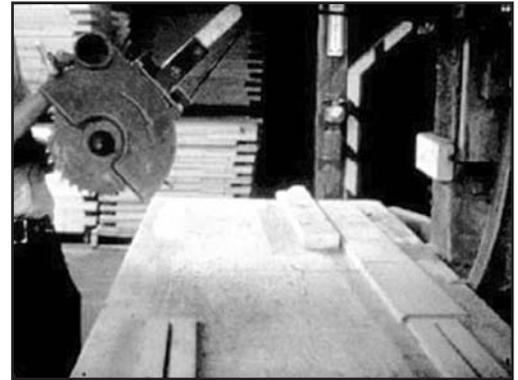
Severe cuts to or amputations of the fingers or hands can occur if they come in contact with the saw blade. If the rotating blade is not properly guarded, exposure can occur during operation or when the saw is idling.



Unguarded miter saw.

Overhead swing saws can pose additional hazards if the return device fails, if the saw bounces forward from a retracted position, or if the saw blade is able to go past the edge of the table, possibly contacting the operator's body.

Although not as common as with rip saws, hazardous kickbacks might also occur.



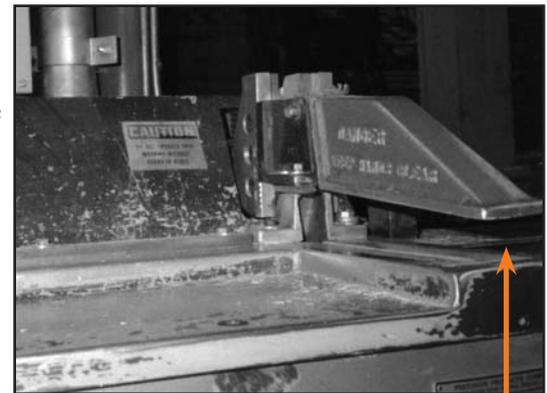
Overhead swing saw missing a lower blade guard and extending beyond table edge.

Solution

Overtable cut-off saws (miter, chop, and overhead swing saws) must be provided with fixed hood guards that enclose the arbor and top half of the saw. These saws also must be equipped with a self-adjusting lower blade guard that automatically adjusts itself to the thickness of the material being cut and provides continuous protection from the blade. Most guards supplied by manufacturers are designed to move out of the way as the blade nears the cut. If a guard seems slow to return to its normal position, adjust or repair it immediately.

Overhead swing saws must be provided with a device (i.e. counterweight) to return the saw automatically to the back of the table when released at any point of its travel. Limit chains must also be provided to keep the saw from swinging beyond the front or back edges of the table.

Inverted (undertable) swing saws and jump saws when idling are guarded by their enclosure. During operation, a hood-type guard or clamping means must be provided for the blade portion that protrudes above the table or above the stock being cut in addition to holding down the stock. Furthermore, these saws must have a “nose guard” affixed to the saw table in front of the hood guard (or another method providing equivalent protection) to prevent accidental entry of fingers or hands into the path of the saw blade from the front (Oregon OSHA Employer Alert, Sept. 15, 2000).



Missing “nose guard” on this jump saw.

References

■ General Industry

Oregon OSHA Division 2/Subdivision O 29 CFR 1910.213(g) — swing saw

Oregon OSHA Division 2/Subdivision O 29 CFR 1910.213(h)(1) — miter/chop saw

■ Construction

Oregon OSHA Division 3/Subdivision I 29 CFR 1926.304(g)(1) — miter/chop saw

■ Agriculture

Oregon OSHA Division 4/Subdivision O OAR 437-004-2000(5)

■ ANSI O1.1 *Woodworking Machinery — Safety Requirements*