

Workplace Health and Safety Queensland

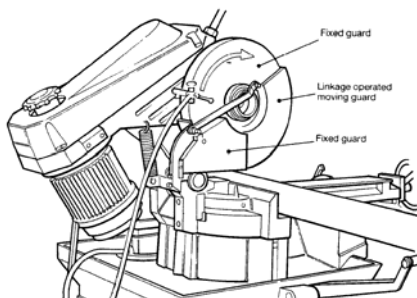
Metal product manufacturing industry – Metal cutting saws

What are the problems associated with metal cutting saws?

The use of metal cutting saws can be extremely dangerous. Many of the incidents involving metal cutting saws result in very serious injuries to the hands and arms of operators, including amputations. The main risk of injury from the saw blade arises during the feeding, retrieving and adjusting of the work piece. These saws have also been responsible for a number of incidents where clothing has been entangled in the unguarded blade, resulting in the saw being drawn down onto the arm of the operator.

How can you address the problem?

Guarding of metal cutting saws is needed to prevent contact with the entire saw blade when the saw is in the raised (rest) position, and limit the amount of blade exposed when the saw is cutting. The most common way of guarding the saw blade is by a combination of fixed and self-adjusting guards (refer to the illustration below). The self-adjusting guard is mechanically linked so that it opens as the saw gets closer to the work piece to be cut and closes as it returns to the raised (rest) position.



Source: UK Health and Safety Executive Website.

If the metal cutting saw does not have a self-adjusting guard or it is not practicable to fit a self-adjusting guard, other types of guards, such as gravity operated guards, should be used with the addition of a hold-to-run button or trigger switch operating handle. This button or switch should remove power to the saw blade spindle when the operating handle is released.

A fixed guard attached to the machine table may also be an option, especially where a saw is dedicated to one particular job. With this type of guarding arrangement, the size of the feed and ejection opening (chute) must not allow fingers, hands or other body parts to gain access to the cutting blade. Other guarding may be used to suit your particular application, but regardless of the guarding arrangement, it still needs to prevent contact with the entire saw blade when the saw is in the raised (rest) position and limit the amount of blade exposed when the saw is cutting. Make sure that all guarding is strong and rigid and able to withstand the stresses of the operating conditions.

Use feed stops or length gauges, where possible, as these devices minimise the need for direct sight of the blade and work piece. Where vision is required, use transparent or mesh materials for guarding. Ensure that work pieces are properly supported and clamped to the saw table before cutting (to minimise the need for the operator to have their hands near the cutting blade).

As with any type of plant and equipment, other controls should be in place to complement guarding, such as:

- information, Instruction and training
- adequate supervision
- inspection and maintenance
- safe work procedures
- personal protective equipment.

Operators should be given comprehensive training and instruction to ensure they are completely familiar with the saw, its controls, guards and safety devices, hazards associated with the saw and any other control measures. Extra care should be taken to ensure that each operator fully understands and can **demonstrate** the safe operation of the saw. Furthermore, extra attention should be paid to young and inexperienced workers and workers returning from absence.

Supervision needs to be provided, based on the competence of the operator (e.g. direct and constant supervision for a new worker) and complexity of the task being performed.

Inspection and maintenance of the saw, including guards and other critical safety parts (including counterbalance springs and their fixings), should be done regularly. For guards and safety devices, this should be done at the start of each day or shift and whenever there is a change to the saws working configuration. The people responsible for inspection and maintenance should be familiar with the saw and all requirements as per manufacturer's specifications (found in the manufacturer's instruction manual).

Maintenance activities should only be carried out when the saw is fully **isolated and locked-out** from all power (electrical, hydraulic and pneumatic) sources and appropriate warning signs should be securely attached to the controls. Manufacturers and suppliers have an obligation to provide relevant information. If you don't have the information you need about the saw, contact the manufacturer or supplier.

Safe work procedures should be written to cover such things as:

- operating the saw
- inspection and maintenance
- emergency situations
- reporting faulty or defective equipment.

These safe work procedures should be developed in consultation with the workers.

Although personal protective equipment (PPE) is generally considered the last line of defence, appropriate PPE is important when using metal cutting saws. As a minimum, the following PPE is recommended:

- wide vision goggles or safety glasses
- ear muffs
- safety boots with steel toecaps
- overalls or other close-fitting clothing.

Refer to *AS 4024*, which provides detailed information about machinery use and safeguarding

For further information on plant and equipment and other workplace health and safety issues call 1300 369 915 or visit www.deir.qld.gov.au

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