

Safe Use of a Handheld Circular Saw

This Information Sheet provides advice on the hazards and control measures associated with using a handheld circular saw to cut timber, stone, metal, tiles etc.

What do I need to do?

You must eliminate or minimise risks to health and safety, so far as is reasonably practicable, even if the cutting work only takes a few minutes. Before starting work, identify the hazards and assess the risks involved so you can plan how to manage them.

The risks must be managed using the most effective control measures that are reasonably practicable, in accordance with the hierarchy of controls. If a single control measure is not enough, a combination of control measures can be used.

Many incidents can be avoided if the correct saw and blade are used and workers are consulted about the hazards and risks and given adequate information, instruction, training and supervision.

Kickback

Most circular saw incidents occur due to kickback, a term used when the blade becomes jammed by the material being cut. This causes the circular saw to retract very quickly backwards out of the saw cut, allowing the blade to make contact with whatever is in its path, often the operator's hand or leg, causing cuts/lacerations.

Causes of kickback include:

- blade is excessively worn or damaged (warped or missing teeth)
- the wrong size and type of blade is used for the material being cut
- the flange and centre hole in the cutting blade are different sizes
- flanges and nuts are worn or damaged
- lack of training resulting in poor operator practices.

Control measures to minimise cuts from kickback include:

- ensure the circular saw cutting blade is sharp and undamaged
- select the correct blade for the material being cut
- allow the saw to reach full power before starting to cut and allow it to cut steadily. Do not force it
- use two hands to operate the saw - one on the trigger switch and the other on the front handle
- ensure the item to be cut is held in a secure and stable mounting device such as a vice clamp combined on a bench or sawhorse
- set the saw cutting depth as shallow as possible
- ensure all nails and screws are removed from the material being cut
- ensure you have stable footing and that the cutting operation is done in an ergonomically sound and competent manner
- do not twist the saw to change, cut or check alignment
- stand to the side when cutting material to avoid the saw if it kicks back
- ensure the blade guard is in place and functioning as required by the manufacturer.

Projectiles

There is a high risk of being struck by projectiles from the blade or material being cut.

Causes of projectiles include:

- blade is excessively worn or damaged
- the guard is missing or is not operating properly
- the wrong size and type of blade is used for the material being cut
- the speed rating (RPM) of the blade is too low for the speed of the circular saw.

Control measures to minimise the risk of being struck from projectiles include all of the measures for kickback, plus:

- wear protective eyewear
- check the retracting lower blade guard frequently to make certain it works freely. It should enclose the teeth as completely as possible, and cover the unused portion of the blade when cutting
- check the retracting lower blade guard has returned to its starting position before placing the saw down
- keep upper and retracting lower blade guard clean and free of sawdust
- do not hold or force the retracting lower guard in the open position.

Set-up and Use

Improper set-up and use of the saw can cause cuts and other hazards. To minimise the risk from these hazards, undertake the following:

- do not over tighten the blade-locking nut
- ensure that the cord is safely used and stowed to minimise tripping hazards
- do not use a saw that vibrates or appears unsafe in any way
- use a bench mounted table saw instead of a handheld type whenever possible
- do not carry the saw with a finger on the trigger switch
- do not saw in awkward or overhead positions or restricted spaces
- circular saws placed on the ground while still rotating can result in them moving along the ground and cutting people. Only put the saw on the ground once the blade has stopped rotating
- ensure the blade guard is in place and functioning as required by the manufacturer.

Other hazards and controls include:

- accidentally cutting through the electrical cord can result in electric shock. Use a residual current device or safety switch. Ensure there is a test and tag program in place
- electric shock can occur through a build-up of dust in the electric motor. Disconnect power supply before maintaining the saw or changing the blade. Ensure saw is properly cleaned with a regular maintenance program
- dust: wear an approved respirator or dust mask
- noise: wear appropriate hearing protection.

Further information

Codes of Practice:

[How to Manage Work Health and Safety Risks](#)

[Hazardous Manual Tasks](#)

[Managing Electrical Risks in the Workplace](#)

[Managing Noise and Preventing Hearing Loss at Work](#)

[Managing the Risk of Plant in the Workplace](#)

SafeWork SA can help

For tips and advice on work health and safety, SafeWork SA offers a free workplace advisory service.

An experienced WHS advisor can visit your workplace to help you to identify hazards and risks as well as offering practical safety solutions that will suit your specific circumstances.

Our advisors have no inspector powers, so you can feel comfortable inviting them in to help.

Request a visit at safework.sa.gov.au/freeadvice or call 1300 365 255.

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