



## The importance of guarding on Computer Numerical Control (CNC) Machines

### What are CNC machines?

A CNC machine is controlled by a computer file containing instructions. The machine uses these instructions to select and control tools that carry out precise cutting, drilling, milling, or turning operations on materials such as metal, plastic, wood, or composites.

CNC machines are much more accurate than manual machines and are safer due to the reduction in manual intervention. However, these machines can cause serious injury and even death if proper protections and guarding are not used in accordance with the manufacturer's requirements.

## Hazards and risks

Machine guarding is essential in protecting workers from hazards such as moving parts, flying debris, and ejected materials.

Disabling these safety devices, including machine interlocks and removing guarding, can have serious consequences and is a significant breach of work health and safety laws.

Injuries can include:

- ▶ Body parts becoming trapped and entangled, leading to severe injuries, amputations, and/or fatalities.
- ▶ Flying debris can cause serious facial, eye and body injuries or other harm.

Despite the known safety risks, guarding on CNC machines is still frequently bypassed or removed in some workplaces.

In South Australia, several incidents involving the disabling of guards have recently been in the media. In one incident, a worker became trapped in a CNC machine after the interlocking guard for the door had been overridden, suffering broken ribs. Another worker was killed after being trapped in a machine at a factory in Adelaide's North.

During the 2025/2026 financial year, SafeWork SA is undertaking a proactive compliance campaign on machine guarding. In the first four months of the campaign, SafeWork SA has issued 15 statutory notices where guarding was missing or overridden.

Common unsafe practices include:

- ▶ Removing Perspex screens to improve visibility, which can expose workers to dangerous moving parts and flying debris.
- ▶ Overriding interlock guards during cleaning and maintenance, which can cause machines to restart unexpectedly if not locked out correctly.



## How the guarding is meant to operate:

Interlock guards are designed to:

- ▶ Prevent operation of machinery if/when doors or guards are opened either intentionally or unintentionally
- ▶ Stay locked until all machine movement has stopped.
- ▶ Delay opening if moving parts take time to come to a complete stop.
- ▶ Stop the machine immediately when opened.
- ▶ Prevent closure if a body part is detected in the danger zone.

If the guarding required is to be removed for the purposes of maintenance or cleaning, it must be reinstalled before the machine is put back into normal operation. Guards must not be overridden or disabled.

In accordance with Regulation 208(5)(b) of the Work Health and Safety Regulations 2012 (SA), penalties apply if plant is restarted without the guarding reinstalled.

### Maximum penalty:

**In the case of an individual— \$6,000.**

**In the case of a body corporate— \$30,000.**

If not permanently fixed or interlocked, physical guards must be secured with fittings that require a tool to remove them. Securing guards with easily removable fasteners such as wing nuts, levers, or turn-knobs does not comply with legislation as these allow the guards to be quickly overridden.

The PCBU must ensure that they make bypassing, defeating or disabling the guards as difficult as possible.

## Training

It is also important that all workers are trained in the appropriate use of the CNC machine.

All workers must be trained to:

- ▶ Use guarding correctly and understand its importance.
- ▶ Safely operate, inspect, clean, and maintain CNC machines.
- ▶ Follow proper shutdown, lock out/tag out and emergency procedures.

Supervisors should take action to correct unsafe work practices associated with plant as soon as possible.

Machines must be regularly inspected and maintained to ensure that guarding and interlocking devices are in place and in working order, before use.

For more information,  
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