



Machine guarding

What is the issue?

People working in or visiting the dairy can be exposed to plant and machinery hazards.

Why is it an issue?

The unguarded moving parts of plant and machinery could result in a person being entangled, struck, crushed, punctured, stabbed or suffer friction burns.

What are the consequences of ignoring it?

Not fitting guards to machinery, or removing them, can result in a user's limbs or clothing being pulled into a machine, possibly causing a serious injury or death.

Recent fatalities in Victorian dairies have mainly been the result of inadequate guarding on plant and machinery.

How safe is your dairy now?

In the dairy, these machinery parts can cause serious injury if not guarded:

- belts and pulleys on vacuum and milk pumps and auger motors;
- flywheels and gear wheels on generators;
- shafts and spindles on the Power Take Off (PTO) drives of vacuum and milk pumps, and the tractor drive when it is the alternative power source;
- chain and sprocket gears on some backing gates and grain crushers; and
- moving parts on rotary and herringbone plant.

The hazardous parts of machinery can be described as:

- **'Drawing in' or 'nip' points** – where a belt makes contact with a pulley. These points can grab at fingers and pull the operator in, causing serious injury.
- **Shear points** – items or parts of a machine that move against each other, and cut and pinch, e.g. exposed flights on augers.
- **Impact and crushing areas** – these are similar to shear points, but they crush rather than cut, e.g. rotary platform rollers, and between the fixed rails and moving stalls on a rotary dairy, and the hydraulic or pneumatic gates found on the cow entrance/exit on all types of dairies.
- **Entanglement areas** – these areas occur on some PTOs and exposed rotating shafts on pumps.



Safety in the Dairy - Hazard sheet

What can be done right now?

Identify components of plant and machinery that could cause an injury. If, in doing so, you find any guard or barrier removed for maintenance it should be replaced immediately.

Think about what work you are going to do in the dairy before choosing what to wear for the day - long-sleeved shirts with loose cuffs, ill-fitting gloves and untucked trouser legs can all become entangled or caught in farm machinery. For the same reason, long hair should always be tied back or kept up under a suitable hat while using machinery.

Do not remove guards or barriers while machinery is operating.

If a machine has its guards removed or made inoperable while it is being serviced or repaired, there should be some visual or physical notification of this, such as signs or barriers on and around the plant. For added protection, the machine should also be made temporarily inoperable by locking out the power, removing the keys or keeping the emergency stop button in place with a locking device.

What are the next steps?

Everyone working in the dairy needs to know how a machine should look and operate when all the guards are in place, so that they know when it is safe to use. This should be part of the induction and training for all operators when they start work for the first time, or when new or modified machinery is introduced to the dairy.

What you should be considering longer term

Perform a risk assessment when buying new equipment and machinery and ensure that the guarding and barriers are adequate, meet the Australian Standards and are part of the functional design.

Look for guarding that has a panel, gate or lid guard that cannot be opened when the machine is operating or stops it operating when the guard is not correctly fitted.

Guards are more effective when part of them is fixed to the machine, so that it can be opened, but not removed.

The least effective guards are those that can be removed, as it is easy to forget to put them back on after maintenance.

What actions are not optional

If guarding is to be used to control machinery hazards, plant regulations require you to ensure, as far as is practical, that the type of guard used prevents access to the danger point or area of the plant.



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As far as is practical, a guard must prevent access to the dangerous area(s) of a machine. The forms it can take, in order of effectiveness, include:

- **Permanently fixed physical barrier** – is used if access to the machine is not necessary during its operation, maintenance or cleaning.
- **Interlocked physical barrier** - allows access to the area being guarded at times when that does not present a risk and prevents access at other times. This is suitable if access to the guarded area of the machine is necessary during its operation, maintenance or cleaning.
- **Physical barrier** – this type of guard can only be altered or removed by using tools. It is used if either a permanently fixed physical barrier or an interlocked physical barrier is not practical.
- **Presence-sensing system** – this disables the machine while it senses a person or part of a person near the guarded section. It is used if none of the other types of guarding is practical.

Guarding needs to be as difficult as is reasonably possible to by-pass or disable, whether deliberately or by accident, but at the same time, it cannot cause a health and safety risk in itself.

If the guarded machine contains moving parts that may break or eject work pieces, the guard being used must control any health and safety risk that may result from those flying objects.

Where to go for more information

Standards Australia has produced the major reference document for machine guarding in Australia, however it is not readily available. WorkSafe Victoria has also produced short guides on the subject.

WorkSafe Victoria Machine guarding – safety basics	www.workcover.vic.gov.au
Standards Australia As 1121-1983 – Guards for agricultural tractor PTO drives As 4024.1-1996 – Safeguarding of machinery – general principles	www.standards.com.au