



The University of Sydney



## Guarding Grain Augers

A guide to fitting  
a more practical guard



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	<p><b>Old auger unguarded</b></p>	<p><b>1</b></p>
	<p><b>Old auger with inner guard retrofitted</b></p>	<p><b>2</b></p>
	<p><b>Old auger with both inner and outer guards retrofitted</b></p>	<p><b>3</b></p>

## Why this guide?

Many grain augers used on farms have had the guard over the flight intake removed and not replaced. Often these have been removed so that the auger can be used for grains that do not flow easily through the narrow mesh of the guard. **Photograph 1**

WorkCover NSW has produced an industry standard for guarding the flight intake that will allow free flow of all grains, and all new augers should now provide this improved guarding system. The Grain Auger Industry Safety Standard can be found on the WorkCover NSW website:

[http://www.workcover.nsw.gov.au/Publications/Industry/Rural/pages/grain\\_augers.aspx](http://www.workcover.nsw.gov.au/Publications/Industry/Rural/pages/grain_augers.aspx)

This guide provides farmers with practical information to build and retrofit a guard to older grain augers, improving safety of those people handling grain and using grain augers.

## More about the problem

The National Farm Injury Data Centre has found that there is, on average, 1 death and 16 workers' compensation claims per year involving grain augers. There will be many more injuries, as most day-to-day work on farms is undertaken by self employed farmers and their families and injuries to these will not be included in the official workers compensation figures. It's likely that there are around 60 serious injuries involving farm augers each year. Most injuries are crush injury or amputation of fingers, hands, arms and feet caused by limbs being caught in unguarded auger flights. Effective guarding would prevent these serious injuries.

## Guard design

The guard is designed in two parts, a fixed inner guard and an outer guard that can be removed when the auger is used in silos, grain bins or in a guarded hopper, AND THEN BE EASILY REPLACED.

The following photographs show construction of the guard system to an old auger.

1. **The inner guard** - is an integral part of the screw bearing assembly to enable bearing maintenance. It is permanently fixed to the grain auger as close as practicable to the flight. As a minimum, it must comprise longitudinal bars with a maximum of 75 mm spacing and be of sufficient strength to prevent deformation – eg 10mm diameter steel. The bearing end of the grain auger must not have apertures greater than 75mm. **Photograph 2.**
2. **The Outer Guard** – is made from mesh with a maximum of 100 x 100 mm apertures. There should be at least 120 mm between the outer guard and the inner guard. It must be secured in position, but may be removed to use the auger in silos, field bins or guarded hoppers. **Photograph 3.**

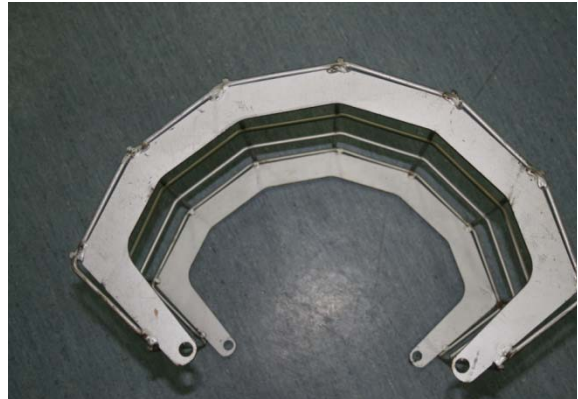
It is important once you have designed and built the guard, you **do your own safety risk assessment of the auger and guard**, looking to see whether you have succeeded in making your auger safer, and haven't created additional hazards. You may also need to build a guard for drive belts, pulleys and shafts. A checklist can be found in the *Grain Handling Safety – A practical guide*.



## More detail



An industry example



End of outer guard drilled to attach to auger inner guard



Lugs welded to the inner guard to attach the outer guard



Detail of lug and pin to attach outer guard

## Materials List

The materials used to construct this auger guard:

- 0.4 m - 150 x 6 mm rod cut length ways and bent to shape
- A piece of 6mm plate cut to shape or 1.5 m - 40 x 6 mm strap, cut and shunt
- 0.5 m – 40 x 6 mm strap
- 100 mm square mesh
- 4 lugs and 2 split pins or 4 x 100 mm pieces of 12 mm angle iron and 6 mm rod

## Further Information and Acknowledgements

This Grain Auger Guarding Guide should be used in association with the following publications:

- *Managing Health and Safety in the Grain Industry* risk management package – a practical management tool for implementing OHS in grain production
- *Grain Handling Safety* – A practical guide
- *Farm Machinery Guarding* – A practical guide

These are available on the Farmsafe Australia website:

<http://www.farmsafe.org.au/index.php?article=content/for-farmers>

## Notes



“Any farmer that’s handy with a welder can make this auger guard in about an hour”.

Ian Reardon, Lairdoo, Moree.

### Some helpful tips

1. To easily locate and fit the outer guard, tack weld the angle iron to the auger where you want to locate the lugs. Pre drill the holes in the outer guard and insert the 50 mm lengths of 6 mm rod. With the lugs lined up with the angle iron, tack into place. Remove the outer guard and weld lugs securely.

This ensures that outer guard and lugs line up easily. All augers will be different.

2. Using an angle grinder, taper the lugs so ease fitting of the outer guard.
3. The outer guard is a little more fiddly to make. If you only need to make one guard, it could be easier to buy the outer guard for about \$150 and fit it to the auger.

OWNER / MANAGER: .....

Completed by: .....

PROPERTY NAME & ADDRESS: .....

PHONE: .....

FAX: .....

Date Completed: .....

Grain Movement and Storage	Yes No	Risk Level	Action Planned	Cost \$	Target Date	Action Date	Person Responsible	Notes
<b>Grain Augers</b>								
Have overhead powerlines which pose a potential risk when moving grain augers been excluded from the transport path or clear hazard reminders strategically placed?								
Are all moving belts, chains pulleys on grain augers covered to prevent contact with body parts and clothing?								
Are intake points for grain augers effectively guarded to prevent contact with body parts and clothing?								
Are augers emptied and lowered prior to moving?								
<b>Additional Hazards</b>								



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