



**Old auger,
unguarded**

1



**Old auger
with inner
guard
retrofitted**

2



**Old auger
with both
inner and
outer guards
retrofitted**

3

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

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



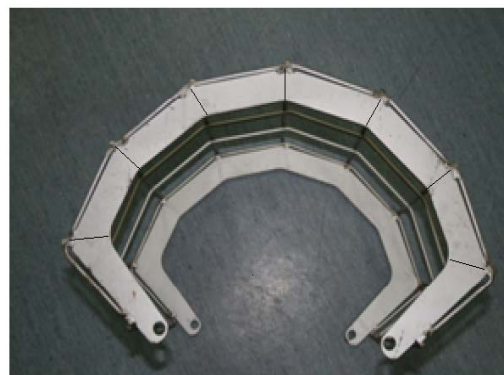
Lugs welded to the inner guard to attach the outer guard



Detail of lug and pin to attach outer guard



An industry example



End of outer guard drilled to attach to auger inner guard

Materials List

The materials used to construct this auger guard:

- 0.4 m - 150 x 6 mm pipe cut length ways
- 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

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>

CHECKLIST

The following checklist can be used to ensure grain augers comply with the new safety features specified by WorkCover NSW grain auger industry safety standard.

By reviewing and completing this checklist, you will be well on your way to meeting your legal safety obligations.

ITEM	YES	NO	COMMENTS
Is the grain auger appropriate for the intended operation?			
Are drive belts, pulleys, chains, sprockets and drive shafts fully guarded, including 'back guarding' to prevent contact from behind?			
Does the fixed inner guard have bars maximum 75 mm spacings?			
Does the removable outer guard have mesh a Maximum 100 x 100 mm square?			
Is the distance between inner and outer guards a minimum of 120 mm?			
Are winches properly guarded to prevent a hand being caught between winch drum and the wire rope?			
Are all lifting ropes fastened using swaged, sprocketed or spliced eyes and thimbles and not fastened by bulldog grips or knots?			
Is a device provided to ensure that the wire rope is correctly wound on the winch drum?			
Is a jockey wheel fitted to aid manoeuvrability if necessary?			
Is the emergency stop near grain auger inlet?			
Are safety signs clearly displayed including:			
1 Keeping grain auger clear of overhead power lines.			
2 Empty and lower grain auger before moving.			
3 Do not operate grain auger with guards removed.			
Is a weatherproof receptacle for storing the operating instructions provided and labelled accordingly?			
Are safety instructions provided with grain auger?			
Are transportation aids included (eg safety chain)?			
Is information provided on safe storage of grain auger?			
Is inspection and maintenance information provided?			

Source WorkCover NSW Grain Augers – Industry Safety Standard