



working  
across  
borders

# Slashers

A guide on health and  
safety standards

February 2011

WORK HOME  
SAFE SAFE



**Disclaimer**

This publication may contain occupational health and safety and workers compensation information. It may include some of your obligations under the various legislations that WorkCover NSW administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

Information on the latest laws can be checked by visiting the NSW legislation website ([www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au)).

This publication does not represent a comprehensive statement of the law as it applies to particular problems or to individuals or as a substitute for legal advice. You should seek independent legal advice if you need assistance on the application of the law to your situation.

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# 1. INTRODUCTION

The Industry Solutions Program is a research and development initiative undertaken by WorkCover NSW, which has worked with industry to devise practical solutions to problematic issues in an industry. It recognises the need for assistance in some industry sectors to overcome particular difficulties or challenges in order to improve workplace safety.

Solutions to safety issues are developed in partnership with industry and then released for industry-wide implementation. Within 12 months, an evaluation is conducted to determine the effectiveness and practicality of the solutions. If necessary, further refinements, including additional solutions, are included after the evaluation.

WorkCover is aiming to harmonise industry solutions in conjunction with other occupational health and safety (OHS) jurisdictions to develop a common approach to control hazards.

The Industry Solutions Program identified that slashers can be hazardous to operate and that there is currently no practical guidance available in Australia for their design and use – hence this guide was developed.

Contributors to this guide include:

- Australian Workers Union NSW
- Daken Equipment Pty Ltd
- Farmsafe Australia
- Howard Australia Pty Ltd
- Jarrett Implements
- Kentan Machinery (FIMDA)
- Motor Traders Association NSW
- Nowra Tuck and Tractor Repairs (FIMDA)
- NSW Farmers Industrial Association
- Online Safety Systems
- R.H Bare Pty Ltd
- SafeWork South Australia
- Sherwood Machinery Pty Ltd
- Southern Cross Mowers Pty Ltd
- Tractor and Machinery Association of Australia
- Workplace Health and Safety Queensland, Department of Justice and Attorney-General
- WorkSafe Victoria
- WorkSafe Western Australia
- Workplace Standards Tasmania, Department of Justice.

This guide provides practical guidance for designers, manufacturers, suppliers and users of slashers. OHS legislation requires the control of risk to health and safety, and following this guide is a means to achieve such compliance.

## 2. SCOPE

The specifications in this guide apply to all trailed, semi-trailed, three-point linkage mounted or multi-linkage mounted slashers, with one or more blade assemblies of over 750 mm (29.5 inch) blade tip circle diameter and designed for slashing grass and other regrowth or crop residue.

This guide also covers used slashers for resale.

This guide excludes:

- turf-care equipment
- self-propelled slashers, mowers or mowing machines
- drum, disc or flail mowers
- reach mowers.

## 3. DEFINITIONS

For the purpose of this guide, the following definitions apply:

<b>Competent person</b>	for any task means a person who has acquired through training, qualifications or experience, or a combination thereof, the knowledge and skills to carry out that task.
<b>Discharge</b>	the area of a slasher where the cut material exits the cutting chamber.
<b>Guard</b>	a barrier that prevents or minimises inadvertent contact with hazards.
<b>Inadvertent contact</b>	contact between a person and a moving machinery part, or other type of hazard, resulting from the person's unplanned actions during normal operation or servicing.
<b>Intake</b>	the area of a slasher where the material that is to be cut enters the cutting chamber.
<b>OEM</b>	'Original Equipment Manufacturer', one that produces, manufactures or assembles original products or devices incorporated into the slasher at first point of sale.
<b>PTO</b>	'Power take-off', an external shaft on the rear of a tractor, which provides rotational power to the slasher.
<b>Tractor</b>	a powered vehicle primarily designed to haul and provide power for agricultural or horticultural machinery or implements by way of a power take-off rotating shaft or other mechanical means, but does not include earthmoving machinery or a passenger vehicle.

## 4. DESIGN

OHS legislation places obligations on designers to identify hazards and control the risks associated with the design, manufacture, supply and use of plant. The designer must where reasonably practicable design-out any risks associated with the use of the slasher or, where not reasonably practical to do so, provide means to control the risks.

The designer must provide information to the manufacturer that includes advice on the:

- purpose for which the slasher is designed
- limitations on its use
- testing and inspections to be carried out on the slasher
- installation, commissioning and dismantling
- operation, maintenance, transport and storage
- systems of work necessary for the safe use of the slasher
- knowledge, training and skills necessary for undertaking inspection and the testing of the slasher.

The following sections provide advice on the specific hazards associated with slashers that must be addressed in the design.

### 4.1 GUARDING

#### 4.1.1 General

The designer must design the slasher to:

- prevent people from inadvertently contacting the cutting elements when the slasher is operated according to the manufacturer's instructions
- control the risk of materials or objects being ejected from the slasher during operation.

All slashers must be designed, manufactured and supplied with appropriate guarding, as outlined in this guide. However, for special applications, such as in vineyards or pasture topping where the cuttings are required to be directed in a specific manner adjustable guarding may be required. This guarding should be able to facilitate the use of the slasher in these special applications but it must be returned to its normal operating configuration when not used in this manner. Information must be supplied on alternative control measures that provide an equivalent level of safety when it is used in this special application.

#### 4.1.2 Inadvertent contact

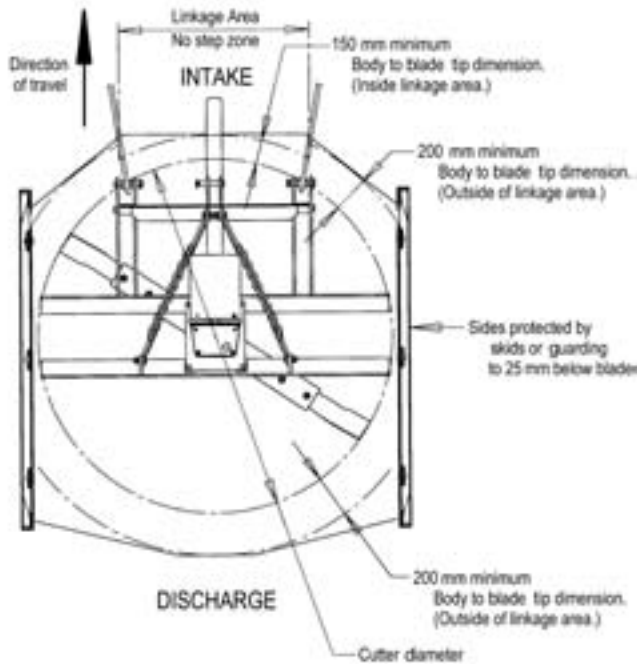
The slasher must be designed or guarded so that any inadvertent contact with the cutting elements, at both the intake and discharge areas, is controlled when the slasher is operated according to the manufacturer's instructions.

To prevent inadvertent contact with the cutting blades:

- vertical side guards (skids) must be provided and must extend at least 25 mm below the blade plane
- all other areas of the slasher body (including any metal extension) must extend no less than 200 mm out from the blade tip, except for a three-point

linkage mounted and PTO-driven slasher, where the section of the slasher body that is directly between the linkage mounting points can be reduced from 200 mm to 150 mm, to help prevent damage to the PTO safety cover (see figure 1). For movable mounts, this reduction only applies to this section that remains between the mounting points throughout the range of movement.

No-one should be within the linkage arms while the PTO is engaged.



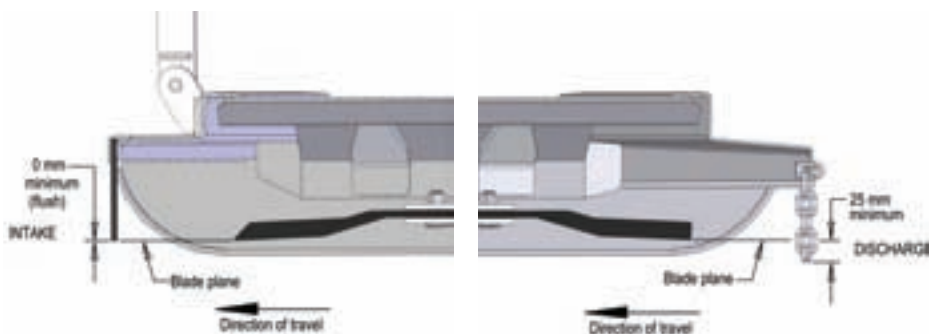
**Figure 1: Minimum guarding dimensions to prevent inadvertent contact.**

#### 4.1.3 Projectiles

Deflectors, chain curtains, or other suitable guarding, must be mounted at the intake and discharge areas of the slasher, to deflect projectiles towards the ground and minimise the potential of someone being struck by material while the slasher is in operation (see figure 2).

In a stationary position, the guarding must, as a minimum:

- extend down to the cutting blade plane at the intake
- extend at least 25 mm below the cutting blade plane at the discharge
- not be able to make contact with the cutting blade.



**Figure 2: A typical conveyor belt-style debris guard at front and a chain-style debris guard at the rear.**

At the intake and discharge areas of a slasher, with a cutting diameter of **1550 mm or less**, the guarding must use either:

- steel chain that has a minimum link diameter of 6 mm
- multi-ply reinforced belting (rubber) that has a minimum thickness of 6 mm
- a durable material that provides an equivalent level of guarding and returns to its original shape and position after impact.

At the intake and discharge of a slasher, with a cutting diameter **greater than 1550 mm**, the guarding must use either:

- steel chain that has a minimum link diameter of 8 mm
- multi-ply reinforced belting (rubber) that has a minimum thickness of 8 mm
- a durable material that provides an equivalent level of guarding and returns to its original shape and position after impact.



**Figure 3: Chain curtain, using continuous chain, looped (top and bottom) and fixed to the supporting structure by welding. Alternative methods of securing chain, such as slots and retaining rod or wire, are also suitable.**

Where chains are used as a means of guarding, drop chains should be looped at the bottom to ensure guard integrity and to assist the guarding to return to the drop position. Single-link chain drop is not acceptable, except where individual drops are linked, at or near the bottom, by flexible steel-wire rope, to ensure they return to the drop position. There should be no gaps in the guarding – ie adjacent chain drops should be in contact.

#### **4.1.4 Power take-off (PTO) shafts**

PTO shafts must be guarded in accordance with AS 1121.4 *Agricultural tractor power take-off Part 4 – Guards for power take-off drive shafts – strength and wear tests and acceptance criteria*, or equivalent international standards, ISO 5674 and SAE 522.1.

To minimise the risk of damage to the PTO shaft guards, the slasher should include a means to support the PTO shaft when it is disconnected from the tractor (see example in figure 4). The support should not be capable of becoming entangled in the PTO drive shaft when in use. For slashers up to and including 30kW (40hp), this support may not be required.





*Figure 4: Hook-style PTO support.*

#### **4.1.5 Clutches, drive belts, pulleys, chains, sprockets and drive shafts**

Clutches, drive belts, pulleys, chains, sprockets, drive shafts, and other nip, shear and crush points, must be guarded. This guarding must include 'back guarding', to prevent inadvertent contact from behind.

Guards that need to be opened or removed during maintenance should be fastened so they cannot be opened or removed without the use of tools – eg screwdriver or spanner.

## **4.2 COMPONENT DESIGN**

### **4.2.1 General**

All components must be of a structural integrity that enables them to withstand the forces imposed on the slasher during operation and transport.

### **4.2.2 Blade**

The blade is a safety critical component of the slasher and should meet the following minimum specifications:

- steel – grade 1050 or higher, silicon manganese, boron or equivalent
- hardness between 35 and 45 Rockwell 'C'
- width of the material surrounding the blade-mounting hole, at least half the hole's diameter, when measured from any point on the hole's circumference.

Each blade should be permanently marked with the batch identification code and the blade specifications certified by the blade manufacturer for each batch supplied.

### 4.2.3 Cutting head and blade-fastening systems

The cutting head must be a two-bar design to sandwich the top and bottom of the cutting blades, or a single bar/disc of sufficient structural integrity to withstand operating conditions.

Ensure the fastening system, which is used to attach the cutting blades, will last at least as long as the blades themselves.

The design of the blade-fastening system must take into consideration the blade, the blade's tip speed, and likely shock loads during use.

Fastening bolts should retain the blade if the mounting plate is damaged or deflected during use. A self-locking nut, or castellated nut and split pin, should be used to prevent the fastening bolts from vibrating loose.

Typically, 18 mm (3/4 inch) grade 8.8 (SAE grade 5) bolts are used for 2-3 kg blades.

The blade-fastening system must have a wear collar, or hardened bush, to prevent the premature wear of the blade-fastening bolt.

The cutting head must be retained by a system that is capable of supporting it when in an unbalanced condition. A self-locking nut, or castellated nut and split pin, should be used to prevent it vibrating loose.

## 4.3 HYDRAULIC SYSTEMS

New hydraulic hoses must have a safety factor of 4:1 – ie the minimum burst pressure of the hose must be four times greater than the maximum working pressure. All hydraulic hoses must be in good condition and serviceable.

## 4.4 SAFETY SIGNS/DECALS

Every slasher should prominently display pictorial and/or written signs warning against the serious safety risks. Examples (see appendix A) of these signs include:

- No passengers
- Read and understand instructions before using machine
- Eye and hearing protection
- Keep bystanders clear
- Avoid contact with moving parts
- Maximum PTO speed
- Ejected debris.

Symbols should conform to AS 1319 *Safety signs for the occupational environment*, words must be in English and units in metric.

## 5. MANUFACTURERS

### 5.1 MANUFACTURER'S RESPONSIBILITIES

OHS legislation places obligations on manufacturers to identify hazards and control the risks associated with the manufacture, supply and use of plant. The manufacturer must ensure all relevant advice provided by the designer is incorporated into the manufacture of the slasher.

The manufacturer must ensure that the slasher conforms to this guide, or provide an equivalent or higher level of safety.

A manufacturer must provide those who have responsibilities under the legislation with all available information about the slasher that enables them to fulfil their responsibilities with respect to identifying hazards and controlling the risks associated with the manufacture, supply and use of the slasher. This includes advice on the:

- purpose for which the slasher is designed
- limitations on its use
- testing and inspections to be carried out on the slasher
- installation/commissioning and dismantling
- operation, maintenance, transport and storage
- systems of work necessary for the safe use of the slasher
- knowledge, training and skills necessary for undertaking inspection and the testing of the slasher.

The manufacturer's identification details, model or serial number, maximum PTO rpm and the year of manufacture, should be accessible, and clearly and permanently marked or displayed on the main body of the slasher.

### 5.2 MANUFACTURER'S INSTRUCTIONS

The manufacturer must provide documented operator instructions in English and they must clearly specify all information outlined in section 5.1.

As a minimum, the instructions should include information about:

- tractor requirements – eg weight, power and PTO rpm
- slasher capabilities – eg environmental factors, such as terrain and types of vegetation
- installation and uncoupling
- operation
- storage
- transportation
- inspection and maintenance requirements
- safety guarding
- personal protective equipment (PPE).

The manufacturer should provide practical means for communicating their instructions, such as an instructional DVD or web based information, in addition to the documented operator instructions.

### 5.3 RETENTION OF INSTRUCTIONS

The slasher must have affixed to the main body a permanent weatherproof receptacle (see example in figure 5), in which a copy of the operating instructions can be stored and kept in good condition. The receptacle must be labelled accordingly.



*Figure 5: A weatherproof receptacle.*

## 6. SUPPLIERS

### 6.1 SUPPLIER'S RESPONSIBILITIES

The supplier includes anyone involved in the supply, sale, transfer, lease or hire of plant that is used in a workplace.

OHS legislation places obligations on suppliers to identify hazards and control the risks associated with the supply and use of slashers. They must ensure that any slasher, manufactured after the commencement of this guide, conforms to the requirements outlined herein, particularly if imported from abroad, or from another State or Territory, as the manufacturer may not be aware of these requirements – see sections 5.1 and 5.2.

The checklist in appendix B assists the supplier to check whether they are complying with this guide. This guide can be used to assist you in complying with those requirements.

Note: Slashers first manufactured prior to the commencement of this guide may not comply with the requirements herein. However, this guide should still be used to assist you in meeting the risk control obligations in the OHS legislation. Where compliance with the requirements in this guide is not reasonably practicable other measures should be implemented to control the identified risks.

### 6.2 USED EQUIPMENT

Regulatory jurisdictions may have different requirements for the sale or transfer of used plant. See your workplace regulator for specific information on the sale or transfer of used plant in your State or Territory. This guide can be used to assist you in complying with those requirements.

### 6.3 PROVISION OF INFORMATION

The manufacturer's instructions and all other information relevant to the safe use of the slasher, must be provided at its point of supply.

## **6.4 PRACTICAL SAFETY INFORMATION**

The supplier should establish a means to instruct, at the point of supply, those who purchase a slasher on its safe use. This may include a DVD, an instructional session, or an explanation of the manufacturer's instructions.

## **6.5 MODIFICATIONS**

Anyone who modifies a slasher assumes the role and responsibilities of the designer and manufacturer. As a general rule, modifications should not be done and, if they are, they must be done by a competent person and based on a risk assessment. Before any modifications are done, contact the manufacturer or supplier.

When modifications are carried out, review the safety instructions and revise them where necessary.

# **7. USE**

## **7.1 EMPLOYER/CONTROLLER RESPONSIBILITIES**

OHS legislation places obligations on the employer, or the controller of the slasher, to identify the hazards and control the risks associated with the use of the slasher in their workplace, and to do so in accordance with the manufacturer's instructions.

When purchasing a slasher:

- ensure the manufacturer's instructions are provided at the point of purchase
- ensure the slasher conforms to this guide
- discuss your needs with the supplier, to ensure the slasher is compatible with the power of your tractor, and is appropriate for the intended application – consider the speed of your tractor's PTO and its compatibility with the slasher's gearbox
- seek practical advice and instruction from the supplier on the use and limitations of the slasher.

If you are hiring, leasing or borrowing a slasher on a temporary basis, get safe use instructions from the person supplying it.

## **7.2 SAFETY INSTRUCTIONS**

The employer must provide safety instructions to all those involved in using a slasher. A copy of the safety instructions must be kept in good condition with the slasher.

Generally, the safety instructions should be the manufacturer's instructions. Any variations from the manufacturer's instructions must be based on a risk assessment, and must not remove any of the safety features nor expose anyone to risks.

### **7.3 SUPERVISION, INSTRUCTION AND TRAINING**

The employer must provide safe systems of work, adequate supervision, instruction and training to all those involved in using a slasher. They must be instructed in the safe operation of the slasher, including hazards specific to the workplace, including the terrain, stability of the tractor, working environment and the like. The employer should ensure that everyone achieves a level of understanding that enables them to safely and competently operate the slasher.

### **7.4 OPERATION**

Prior to use, the slasher should be inspected to ensure it is working correctly. All safety features must be included in this inspection. If any safety feature is not working correctly, the slasher must not be used. The slasher must be operated according to the manufacturer's instructions.

The operator must ensure that no-one is exposed to risks arising from the slashing operation. Additional safety controls may be required when operating in the vicinity of people or traffic – eg alongside highways, roads or other public areas.

Where adjustable guarding is provided, for special applications such as vineyards and pasture topping, and the guarding is no longer effective, appropriate control measures must be implemented. These controls must ensure that the risk of injury is eliminated or controlled. Before using a slasher in an application other than outlined above, the guards must be readjusted so as to be effective.

### **7.5 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Prior to use, a risk assessment must be undertaken to determine the appropriate PPE required. Any identified PPE must be provided by the employer and must be used by those involved in the operation and maintenance of the slasher. Examples of PPE are appropriate footwear, and hearing and eye protection.

### **7.6 STORAGE AND TRANSPORT**

When not in use, the slasher must be transported and stored according to the manufacturer's instructions.

Requirements may differ when transporting a slasher within a property and on a public road – you must comply with all statutory requirements.

### **7.7 INSPECTION, MAINTENANCE AND REPAIR**

- The slasher must be inspected according to the manufacturer's instructions, prior to use.
- All problems identified must be rectified, prior to use.
- The slasher must be maintained according to the manufacturer's instructions.
- Replacement parts must be to the original manufacturer's specifications, or their equivalent.
- For replacement hydraulic hoses, the safety factor of 4:1 applies – see section 4.3.
- Safety signs and decals should be legible, maintained and, where necessary, replaced.
- Repairs should be carried out by a competent person.

- When suspending the slasher for maintenance or repair, whether attached to the tractor or suspended in another way, adequate safety stands must be used to prevent inadvertent lowering of the slasher.

## 7.8 MODIFICATIONS

A slasher should not be modified or altered. However, if it is necessary to make modifications, they must be done by a competent person and based on a risk assessment. All modifications must comply with this guide. Before any modifications are done, contact the manufacturer or supplier.

Anyone who undertakes modifications subsequently assumes the role and responsibilities of the designer and manufacturer. This does not include shortening a PTO shaft and cover (as per manufacturer's instructions) when first installing the slasher on a tractor.

The instructions relating to the slasher and its use may need to be revised following a modification.

## APPENDIX A – SAFETY SIGNS/DECALS

A slasher should clearly display pictorial and written signs warning against the serious safety risks outlined in this guide. Examples of safety signs are illustrated below.



## APPENDIX B – PRE-PURCHASE CHECKLIST

Use the following checklist when purchasing a slasher, to ensure it complies with the safety features outlined in this guide. Use it before purchasing your slasher.

Note: Slashers first manufactured prior to the commencement of this guide may not comply with the requirements herein. However, this guide should still be used to assist you in meeting the risk control obligations in the OHS legislation. Where compliance with the requirements in this guide is not reasonably practicable other measures should be implemented to control the identified risks.

Tick 'YES' or 'NO' against each item. If all 'YES' answers, your slasher should enable you to meet your legal safety obligations. If you answer 'NO' to any question, address the issue to ensure that you comply with those obligations.

ITEM	YES	NO	COMMENT
Is the slasher appropriate for your needs?			
Is the slasher compatible with your tractor – eg PTO speed?			
Is the slasher designed or guarded to prevent inadvertent contact with the cutting elements, as shown in section 4.1.2? (ie vertical side guards (skids) extend 25 mm below blade plane. Elsewhere the slasher body extends 200 mm out from the blade tip, except for between the three point linkage mounts where it can be reduced to 150 mm)			
Are there deflectors, chain curtains or other suitable guarding, mounted at the intake and discharge of the slasher to deflect projectiles? (See section 4.1.3)			
For slashers of 1550 mm width or less, is the intake and discharge guarding: <ul style="list-style-type: none"> <li>a minimum 6 mm diameter steel chain or 6 mm thick multi-ply reinforced rubber?</li> <li>an equivalent type of durable material that will return to its original shape after impact? (See section 4.1.3)</li> </ul>			
For slashers greater than 1550 mm width, is the intake and discharge guarding: <ul style="list-style-type: none"> <li>a minimum 8 mm diameter steel chain or 8 mm thick multi-ply reinforced rubber?</li> <li>an equivalent type of durable material that will return to its original shape after impact? (See section 4.1.3)</li> </ul>			
Is the PTO shaft guarded, in accordance with AS1124, part 4? (See section 4.1.4)			
Are drive belts, pulleys, chains, sprockets and drive shafts fully guarded, including 'back guarding', to prevent inadvertent contact from behind? (See section 4.1.5)			
Do hydraulic hoses have a safety factor of 4:1? (See section 4.3)			
Are safety signs positioned on the slasher, warning of the serious safety risks? (See section 4.4 and appendix A)			
Are the manufacturer's instructions provided in English? (See section 5.2)			
Is a weatherproof receptacle for the storage of instructions provided with the slasher? (See section 5.3)			
Are manufacturer's instructions provided by the supplier? (See section 6.3)			
Is information provided on safe storage and transport of the slasher? (See section 7.6)			
Is inspection, maintenance and repair information provided with the slasher? (See section 7.7)			



## APPENDIX C – FOR FURTHER INFORMATION

### WorkCover NSW

- Visit [workcover.nsw.gov.au](http://workcover.nsw.gov.au)
- Call the WorkCover Assistance Service on **13 10 50**
- Call the WorkCover Publications Hotline on **1300 799 003**
- Visit your nearest WorkCover office
- For technical specifications on slashers, contact your local manufacturer.

### SafeWork South Australia

GPO Box 465  
Adelaide SA 5001  
Help Centre: 1300 365 255  
Website: [www.safework.sa.gov.au](http://www.safework.sa.gov.au)

### Workplace Health and Safety Queensland, Department of Justice and Attorney-General

GPO Box 69  
Brisbane QLD 4001  
Workplace health and safety infoline: 1300 369 915  
Electrical Safety infoline: 1300 650 622  
Website: [www.worksafe.qld.gov.au](http://www.worksafe.qld.gov.au)

### Workplace Standards Tasmania, Department of Justice

PO Box 56  
Rosny Park TAS 7018  
Telephone: 03 6233 7657  
Email: [wstinfo@justice.tas.gov.au](mailto:wstinfo@justice.tas.gov.au)  
Website: [www.wst.tas.gov.au](http://www.wst.tas.gov.au)

### WorkSafe Victoria

Advisory Service  
222 Exhibition Street  
Melbourne VIC 3000  
Telephone: 03 9641 1444  
Toll free: 1800 136 089  
Email: [info@worksafe.vic.gov.au](mailto:info@worksafe.vic.gov.au)  
Website: [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au)

### WorkSafe Western Australia

1260 Hay Street  
West Perth WA 6005  
Telephone: 08 9327 8777  
Toll Free: 1300 307 877  
Email: [safety@commerce.wa.gov.au](mailto:safety@commerce.wa.gov.au)  
Website: [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au)

## STATE OHS LEGISLATION

For specific OHS State requirements, refer to:

### New South Wales

- *Occupational Health and Safety Act 2000*
- *Occupational Health and Safety Regulation 2001*

### Queensland

- *Workplace Health and Safety Act 1995*
- *Workplace Health and Safety Regulation 2008*

### South Australia

- *Occupational Health, Safety and Welfare Act 1986*
- *Occupational Health, Safety and Welfare Regulations 1995*

### Tasmania

- *Workplace Health and Safety Act 1995*
- *Workplace Health and Safety Regulations 1998*

### Victoria

- *Occupational Health and Safety Act 2004*
- *Occupational Health and Safety Regulations 2007*

### Western Australia

- *Occupational Safety and Health Act 1984*
- *Occupational Safety and Health Regulations 1986*

## AUSTRALIAN STANDARDS

Australian Standards can be purchased from SAI Global. Contact the Customer Service Centre on **13 12 42** or visit [www.saiglobal.com/shop](http://www.saiglobal.com/shop)

Check if any updates or additions to the Australian Standards have been made.

AS 1121	2007	<i>Agricultural tractor power take-offs, Part 4: Guards for power take-off (PTO) drive shafts – Strength and wear tests and acceptance criteria</i>
AS 1319	1984	<i>Safety signs for the occupational environment</i>
AS 4024	2006	<i>Safety of machinery – series</i>

## INTERNATIONAL STANDARDS

ISO 500-1	<i>Agricultural tractors – rear-mounted power take-off types 1, 2 and 3 – Part 1: General specifications, safety requirements, dimensions for master shield and clearance zone</i>
ISO 500-3	<i>Agricultural tractors – rear-mounted power take-off types 1, 2 and 3 – Part 3: Main PTO dimensions and spline dimensions, location of PTO</i>
ISO 5673-1	<i>Agricultural tractors and machinery – Power take-off drive shafts and power-input connection – Part 1: General manufacturing and safety requirements</i>
ISO 5674	<i>Tractors and machinery for agriculture and forestry – Guards for power take-off (PTO) drive-shafts – Strength and wear tests and acceptance criteria</i>
SAE 522.1	<i>Tractors and machinery for agriculture and forestry – Guards for power take-off (PTO) drive-shafts – Strength and wear tests and acceptance criteria</i>





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