Serious Injury Alert
in the use of certain
Technology Plant and Equipment

Working and learning with plant and machinery in technology involves particular risks to staff and students. Plant is defined in the OHS (Plant) Regulations (1995) in part as fixed powered machinery. It does not include portable power tools or hand operated machines. However, similar hazards and risk levels encountered with fixed plant can exist with their use. Use of plant and other equipment can result in serious injury – maiming, limb loss and other permanent impairment to students and staff.

A review of recently reported accidents in technology studies, undertaken by Department of Education's (DoE's) Technology Safety Panel, indicated that the use of the following machines has been associated with serious injury to staff and students (maiming and amputation of fingers):

- Pedestal/Bench grinders
- Circular Saw/Rip Saw/Table Saw
- Cold metal drop saws including high revving and fibre wheel saws.

This information should not be interpreted as a comprehensive guide to risk management or plant safety in the technology areas. The following link provides a more complete list of resources needed to achieve compliance with safety requirement: [http://www.eduweb.vic.gov.au/hrweb/ohs/accp/plantm.htm](http://www.eduweb.vic.gov.au/hrweb/ohs/accp/plantm.htm). If this Alert conflicts with other information, the Alert applies, e.g. 1 mm grinder clearance.

Powered machinery is associated with potentially high impact injury because of the high energies involved, the lack of adequate isolation from moving parts and the skills required to safely harness this energy in using the equipment.

**Guarding**

It is critically important that principals ensure that technology machines (fixed & portable) are effectively guarded and operated safely.

All workshop machinery must have in place guarding which isolates moving parts and the point of operation from direct contact with the operator. Individual sheets detailing correct guarding for pedestal grinders, circular saws/rip saws/table saws and cold metal drop saws are attached.

It is recommended that these sheets are copied and displayed in the technology area within viewing distance of the machine operator.

**Machine Guarding - Monitoring and Maintenance**

It is important that guarding is set in the correct position at all times when the machine is used. To ensure this situation is maintained at all times, the Technology Coordinator should ensure an appropriately trained member or members of staff are delegated the responsibility for monitoring and maintaining machine guarding.

**Decommissioning Poorly Designed Machinery**

If a machine’s design does not enable it to be effectively guarded, then the machine should be immediately decommissioned and disposed of.

**Operator and supervisor competence**

It is important that no person is allowed to operate or supervise operation of a machine without the necessary skill, competence and maturity. Students should be individually tested for their knowledge of the machine, machinery risks, and risk controls including the appropriate guard settings before being tested in the actual use of the machine.

All supervisors of machinery should be trained in the safe use of machinery before being permitted to supervise or instruct students in machine safety and use.


**Protective Apparel**

No person should operate machinery without the appropriate personal protection. The required protective apparel for pedestal grinders, circular saws/rip saws/table saws and cold metal drop saws are attached for your information.
**Technology Safety Panel**

This Panel has been asked to review current safety controls in technology areas using wood, metal and plastics. The Panel will make recommendations to DoE based on this review.

**Further support**

Under the OHS Act (2004) and the *OHS (Plant) Regulations (1995)*, DoE must provide and maintain plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health. To support this outcome, DoE has provided a range of policy guidance and direct support to schools to assist in preventing and managing OHS risk in technology areas including:

- Curriculum guidance through the *Student Safety Guidelines – Technology CD*. This CD was distributed originally to secondary schools in 2003 as part of the *Science in Schools Initiative*. Additional copies are available through School Innovation in Teaching Program – Science, Mathematics and Technology. Contact Christine Pinto 03 9637 2481 for further copies.
- *Guide to Setting and Guarding Machinery CD* distributed as part of the Noel Arnold and Associates audit
- OHS school audits by Noel Arnold & Associates and helpline support ph 03 9890 8811
- Funding support for OHS short course training in technology allocated to regions annually.
  - Contact your regional office

Secondary schools should continue to closely monitor and review their health and safety risk management practices in technology areas. For further information and assistance on this matter contact Noel Arnold and Associates on 03 9890 8811.

For further information about OHS policy in technology contact Employee Health Branch ph 03 9367 3946.
All workshop machinery must have in place guarding which isolates moving parts and the point of operation from direct contact with the operator.

The correct placement of guards is very important. They must be well maintained so that they can be readily and precisely adjusted.

**GRINDER GUARDING**
PERSONAL PROTECTIVE EQUIPMENT

All operators must wear eye protection in the form of Standards Australia approved safety glasses or face shields. The wearing of Safety shoes should be encouraged.

Students should also be strongly encouraged to wear an apron or coveralls to protect their clothes. No dangling or loose items of clothing or hair. Wash hands after use.
GUARDING

All workshop machinery must have in place guarding which isolates moving parts and the point of operation from direct contact with the operator. Circular saws must be guarded in three ways:

1. Guards for parts below the table. All moving parts fully enclosed.
2. A riving knife at the back of the saw blade above the table.
3. A guard covering that part of the saw blade above the table.

Guards should be:-

- rigid to prevent them touching the saw blade.
- strong so that an accidental knock will not displace or bend them.
- easy to adjust so that they can be set correctly.
- well maintained to keep them easy to adjust, i.e. clear of sawdust, rust and dirt.
- regularly checked so that defects like stiff handles are quickly discovered and rectified.
- set as close as practicable to the timber being cut.

Remember that the teeth of the saw blade may cause injury even if the blade is stopped!
GUARD

Guard capable of covering all of the saw blade above the table when saw is full height

Rigid, strong easy to adjust well maintained

Guard adjusted to suit work being cut

Defects reported promptly and rectified quickly

Saw enclosed below bench

Copyright© 2000, Department of Education, Training and Employment, South Australia. Disclaimers
PERSONAL PROTECTIVE EQUIPMENT

All operators must wear eye protection in the form of Standards Australia approved safety glasses or face shields. While it is strongly suggested that all students wear hearing protection while in the workshop environment, hearing protection is mandatory for the saw bench operator. The wearing of Safety shoes should be encouraged.

Students should also be strongly encouraged to wear an apron or coveralls to protect their clothes. No dangling or loose items of clothing or hair. Wash hands after use.
Cold Saw: Guarding

**GUARDING**

All workshop machinery must have in place guarding which isolates moving parts and the point of operation from direct contact with the operator.

The correct operation of guards is very important. The guards should be designed to automatically move into place as the saw is operated completely covering the blade in the rest position. Work-pieces must be secured in the purpose built quick action vice common to all machines. Free-hand cutting is not permitted.

![Diagram of Cold Saw with guards](image)
PERSONAL PROTECTIVE EQUIPMENT

All operators must wear eye protection in the form of Standards Australia approved safety glasses or face shields. It is also strongly suggested that all students wear hearing protection while in the workshop environment.

Gloves should be worn when using this machine.

Operators should wear a protective apron or overalls.