##

**POWER HACKSAW**

## Power Hacksaw (3).jpgScope

This document is to be completed for staff and student use of machinery, plant and equipment as a part of a school curriculum activity or program.

Refer to the [ITD Guidelines](http://education.qld.gov.au/health/pdfs/healthsafety/itd-staff-guidelines.pdf) for further staff advice on the risk management process for practical ITD curriculum activities in schools.

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| Plant/Equipment Description:  |
| Teachers/Leaders:  |
| Room Locations:  |
| Assessment Date:  | Review Date:  |

*N.B. This assessment can remain active for up to 5 years. However, an annual monitoring and review process should be undertaken and recorded – refer to the last page of this document.*

*Below are the details of the manufacturing or production processes attributed to this item of equipment categorised by their assessed inherent risk levels (refer to the Equipment/Process Risk Matrix). The actions required for approval for each level of inherent risk are mandatory.*

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| --- | --- | --- |
| **Inherent Risk Level** | **Details of Processes** |  **Action Required/Approval** |
|  🗹 | **Medium** | * When cross/angle cutting square section metals into specific lengths.
* When cross/angle cutting plate metals held vertically or horizontally in the machine vice.
 | * Document controls in planning documents and/or complete this *Plant Risk Assessment*.
* Consider obtaining parental permission.
 |
| 🗹 | **High** | * When cutting round bar and/or angled iron.
* When straight cutting flat plate into the blade with the blade in the vertical position.
 | * A *Plant Risk Assessment* is required to be completed.
* Principal or Classified Officer

(i.e. DP, HOD, HOC, HOSES) approval prior to conducting this activity is required.* Obtaining parental permission is recommended.
 |
| 🗹 | **Extreme** | * When cutting odd shapes and round bar with the blade in the vertical position.
* When performing any cutting operation that may involve larger sections of work that cannot be clamped in the machine vice. They may possibly need to be securely held by a gloved hand. (NB: This would be an unusual and very uncommon requirement.)
 | * Consider alternatives to using the plant/equipment.
* A *Plant Risk Assessment* is required to be completed.
* Principal approval prior to conducting this activity is required.
* Parental permission must be obtained for student participation.
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Minimum standards

| Minimum qualifications and experience *Listed below are the general “minimum” recommendations for the management of this Plant/Equipment.*🗹 *Indicate the minimum management controls.*  |
| --- |
|  [ ]  Registered teachers with experience, ability and competency in the safe use of this plant/equipment  *(indicate one or more of the following):*[ ]  Specific knowledge of the safe and correct use of this plant/equipment[ ]  Experience (i.e. previous involvement and familiarity) in the safe use of this plant/equipment[ ]  Demonstrated expertise, ability and competency with this plant/equipment[ ]  Documented qualifications relating to the use of this plant/equipment (e.g. in a staff profile) **OR** [ ]  An adult staff member or leader, other than a registered teacher, with:[ ]  Expertise in the safe and correct use of this plant/equipment[ ]  Documented qualifications that demonstrate experience, ability and competency in the safe use of this plant/equipment. |
|  [ ]  Will any ITD staff require initial and/or ongoing training for the safe use of this plant/equipment?If yes, give details:  |
|  [ ]  Will students be operating this plant/equipment?If yes, state how student use of this plant/equipment will be managed (e.g. Workshop Safety Induction)Give details:  |
|  Further information if required:  |
|  |
|  Minimum control requirements  |
|  Supporting documentation available in the school on this plant/equipment includes: [ ]  Operators Manual[ ]  Safe Operating Procedures (SOP)[ ]  Equipment Maintenance Records (EMR)[ ]  A process for recording student safety induction e.g. Student induction register [ ]  A process for recording staff training and experience, e.g. ITD Staff induction register |
|  [ ]  All guards are in place and in good working order for this plant/equipment  |
|  [ ]  Safe Working Zones are defined for this plant/equipment (e.g. yellow lines and/or appropriate signage)  |
|  [ ]  Suitable personal protective equipment (PPE) is available to be used by all operators |
|  [ ]  This plant/equipment complies with relevant safety standards |
|  Further information if required:  |

Hazards and control measures

*Listed below are indicative hazards/risks and suggested control measures. These are by no means exhaustive lists. Add details of any other hazards/risks or additional controls you intend to implement.*

🗹 *Indicate the control measures adopted. Detail their implementation and any additional controls required.*

| **Hazards/Risks** | **Hierarchy of Recommended** **Control Measures** | **Yes** | **No** | **Details of how this will be implemented***(and any additional controls)* |
| --- | --- | --- | --- | --- |
|  **Exposure to Rotating** **or Moving Parts:*** **Entanglement and**

**Entrapment**Could hair, clothing, ties, jewellery or other materials become entangled with moving parts of plant or materials in motion?* **Striking**

Could anyone be struck by moving objects such as the work piece being ejected, or by the unexpected or uncontrolled movement of the plant or work piece? * **Crushing and**

**Pinching**Could anyone be crushed or pinched due to falling uncontrolled or unexpected movement of plant or its load tipping or rolling over, or contact with moving parts during testing, inspection or maintenance?* **Shearing**

Can body parts be cut off between two parts of the plant, or between a part of the plant and the work piece or structure? * **Cutting, Stabbing**

**and Puncturing**Can anyone be cut, stabbed or punctured by coming into contact with moving plant or parts, or objects such as ejected work piece or waste? | 1. Where possible, potentially hazardous plant, machinery and processes, including the power hacksaw, are substituted or replaced with less hazardous alternatives.
 | [ ]  | [ ]  |  |
| 1. All necessary power hacksaw guards and safety devices are in place protecting workers from the cutting blade and other rotating and moving parts.
 | [ ]  | [ ]  |  |
| 1. Micro switches are fitted that cut off power when covers or guards are opened.
 | [ ]  | [ ]  |  |
| 1. “Lock Out” or warning “Danger” tags are affixed to all power hacksaws under repair or maintenance preventing workers from using the equipment.
 | [ ]  | [ ]  |  |
| 1. Staff and student training is provided to minimise exposure to these hazards.
 | [ ]  | [ ]  |  |
| 1. Safe operating procedures (SOPs) for all metal cutting bandsaws are available and clearly displayed.
 | [ ]  | [ ]  |  |
| 1. “Safe Working Zones” around all power hacksaws are clearly defined by yellow safety lines (or similar).
 | [ ]  | [ ]  |  |
| 1. Emphasis is placed on the requirement for plant operators to remove all jewellery, tuck in loose clothing and tie back long hair.
 | [ ]  | [ ]  |  |
| 1. All appropriate and approved personal protective equipment (PPE) is used where required.
 | [ ]  | [ ]  |  |
| **Slips, Trips, Falls** **and Abrasions:**Can anyone using the plant or in the vicinity of the plant, slip, trip or fall due to the working environment or other factors?e.g. Poor housekeeping, dust on floors, slippery or uneven work surfaces, power cables across work areas causing injuries and abrasions? | 1. Slip resistant flooring is encouraged. Regular checks are made for unsafe wear and damage. Inspections are made for any power leads or coolant hoses, etc.
 | [ ]  | [ ]  |  |
| 1. Procedures are in place for the disposal of all waste materials around the power hacksaw.
 | [ ]  | [ ]  |  |
| 1. Staff training is provided to minimise exposure to these hazards.
 | [ ]  | [ ]  |  |
| **Environmental:*** **Noise**

Is it likely that the normal operation of this plant will produce excessive noise levels?* **Dust, Fumes and Vapours**

Is it likely there will be airborne dust particles, toxic fumes or volatile vapours produced and therefore be present in the workspace?* **Lighting**

Is there insufficient lighting to operate this plant in a safe manner? Is there a possible strobe lighting effect caused by faulty fluorescent tubes in the workspace?* **Temperature**

Is the ambient room temperature too extreme and therefore likely to cause the operator discomfort or lack of concentration? | 1. All power hacksaws are regularly maintained to help minimise the risk of exposures to these hazards.
 | [ ]  | [ ]  |  |
| 1. All power hacksaw maintenance is documented in a register (EMRs).
 | [ ]  | [ ]  |  |
| 1. Exposure to noisy ITD workshop environments is monitored and evaluated regularly for all workers.
 | [ ]  | [ ]  |  |
| 1. Engineering controls (or physical changes) such as mandatory machinery guarding or any protective safety screens and enclosures are in place in all workspaces and all in good working condition.
 | [ ]  | [ ]  |  |
| 1. Staff and student training is provided to minimise exposure to these hazards.
 | [ ]  | [ ]  |  |
| 1. All ducted waste and fume extraction systems are connected and operational, fully maintained and cleaned as required.
 | [ ]  | [ ]  |  |
| 1. All coolant (metal cutting fluid) systems are connected and operational, fully maintained and cleaned as required.
 | [ ]  | [ ]  |  |
| 1. Good lighting is provided to all workspaces and this is maintained on a regular basis. Fluorescent tubes are checked and replaced as required.
 | [ ]  | [ ]  |  |
| 1. All appropriate and approved personal protective equipment (PPE) is used where required.
 | [ ]  | [ ]  |  |
| **Electrical:**Can the operator be injured by electrical shock due to working near or contacting with damaged or poorly maintained live electrical conductors such as power outlets, extension leads, safety switches, starters and isolators or casual water on the floor near plant and machinery?  | 1. All power hacksaws have a wall or machine mounted isolating switch that disconnects all motive power.
 | [ ]  | [ ]  |  |
| 1. All power hacksaws are fitted with a Direct on Line (DOL) Start/Stop switch (red and green buttons).
 | [ ]  | [ ]  |  |
| 1. Emergency stop buttons are mounted prominently where necessary.
 | [ ]  | [ ]  |  |
| 1. “Lock Out” or warning “Danger” tags are affixed to all power hacksaws under repair or maintenance preventing workers from using the equipment.
 | [ ]  | [ ]  |  |
| 1. Visually checks are made of all electrical switches, plugs and power leads, etc.
 | [ ]  | [ ]  |  |
| 1. Electrical safety inspections, testing and tagging, etc. are completed regularly as per guidelines for the power hacksaw.
 | [ ]  | [ ]  |  |
| 1. Electrical maintenance on all plant and equipment, including the power hacksaw, is documented in EMRs.
 | [ ]  | [ ]  |  |
|  **Exposure:*** **Friction**

Is the plant likely to generate heat by friction? Could the plant operator accidentally come into contact with moving materials or machinery components resulting in friction burns to the skin, particularly hands?* **Hazardous**

 **Substances**Is it likely that the plant operator or others nearby in the workspace could be exposed to hazardous or toxic chemicals such as oils, hydraulic fluids, greases, coolants, volatile vapours, fumes or dust particulates? | 1. All power hacksaws are regularly maintained to help minimise the risk of exposures to these hazards.
 | [ ]  | [ ]  |  |
| 1. All power hacksaw maintenance is documented in a register (EMRs).
 | [ ]  | [ ]  |  |
| 1. Any hazardous waste materials or toxic dusts and fumes resulting from this metal machining process are monitored and managed.
 | [ ]  | [ ]  |  |
| 1. Staff and student training is provided to minimise exposure to these hazards.
 | [ ]  | [ ]  |  |
| 1. “Safe Working Zones” around all power hacksaws are clearly defined by yellow safety lines (or similar).
 | [ ]  | [ ]  |  |
| 1. All appropriate and approved personal protective equipment (PPE) is used where required.
 | [ ]  | [ ]  |  |
|  **Ergonomics and** **Manual Handling:**Can the plant be safely operated, in a suitable location, providing clear and unobstructed access? Poorly designed work stations often necessitate teachers and students performing manual tasks involving heavy lifting and lowering, pushing, pulling or carrying, etc. Such tasks then contribute to a range of musculoskeletal sprains and strains for workers.  | 1. All power hacksaws and work benches are planned and adjusted to a comfortable work height thus minimising any unsafe or excessively strenuous manual tasks.
 | [ ]  | [ ]  |  |
| 1. Sufficient workspace is provided in all practical classrooms to help ensure unobstructed, safe operation.
 | [ ]  | [ ]  |  |
| 1. “Safe Working Zones” are clearly defined around all fixed plant including power hacksaws. Floors are free of excessive wood dust, waste materials and other extraneous objects.
 | [ ]  | [ ]  |  |
| 1. Staff training is provided with regard to manual handling techniques and procedures to minimise exposure to these hazards.
 | [ ]  | [ ]  |  |
|  **Explosion and Fire:**As a consequence of using this particular item of plant and equipment, could anyone be injured by the release of stored energy triggered by volatile, explosive substances such as stored gasses, vapours or liquids?  | 1. Fire extinguishers of the correct type are readily available in all workspaces and positioned near exit doorways.
 | [ ]  | [ ]  |  |
| 1. Staff training is provided regarding procedures for the correct and appropriate use of fire safety equipment.
 | [ ]  | [ ]  |  |
| 1. Exits from buildings and other work areas are defined and access to them kept clear of obstructions.
 | [ ]  | [ ]  |  |
| 1. Safety signage is posted clearly denoting the location of all fire safety items and emergency exits.
 | [ ]  | [ ]  |  |

| **Other Hazards/Risks** | **Additional Control Measures***These would relate to the specific student needs, locations and conditions in which you are conducting your activity.* |
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| **Approval** |
| Submitted by:       | Date:       |
| **[ ]**  | Approved as submitted. |
| **[ ]**  | Approved with the following condition(s):      |
| **[ ]**  | Not Approved for the following reason(s):      |
| By:       | Designation:       |
| Signed: | Date:        |

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| ITD staff members involved in the use of this risk assessment and the associated plant and equipment: |
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 | *Signature:*  ……………………………….. *Date:**Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:*  |

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| **Monitoring and Review***This Plant & Equipment Risk Assessment is to be monitored and reviewed annually for a further four (4) years.* |

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| **Review 1:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* ITD staffing details at this school have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

|  |  |  |
| --- | --- | --- |
| **Review 2:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* ITD staffing details at this school have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

|  |  |  |
| --- | --- | --- |
| **Review 3:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* ITD staffing details at this school have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

|  |  |  |
| --- | --- | --- |
| **Review 4:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* ITD staffing details at this school have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |