# Safe work procedure

**1. Completed by:** Andrew McVicar  
**Staff number:** 1121632

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<table>
<thead>
<tr>
<th>Faculty/Division: Division of Natural Sciences, Faculty of Science</th>
<th>School/Unit: Schools of Biological Sciences, Chemistry, Molecular Bioscience, Physics.</th>
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<tbody>
<tr>
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<td>Current Version: Issue date: 9th August 2013</td>
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## 2. Safe work procedure title and basic description of activity

**Title:** Milling Machine  
**Description of activity:** Milling of metals and plastics

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## 3. List hazards and risk controls as per risk assessment

<table>
<thead>
<tr>
<th>Associated risk assessment number: RA-Workshop-001.</th>
<th>Potential hazards</th>
<th>Controls</th>
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</thead>
<tbody>
<tr>
<td><strong>Machinery Location:</strong> All workshops</td>
<td>Hair/clothing getting caught in moving machine parts.</td>
<td>Long hair to be tied back. Avoid wearing loose fitting clothing.</td>
</tr>
<tr>
<td></td>
<td>Eye injuries.</td>
<td>Wear fully protective glasses at all times. Where required, use a coolant best suited for both the job and the operator.</td>
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<tr>
<td></td>
<td>Skin irritation.</td>
<td>Regularly clear table machine with hook and brush.</td>
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<td></td>
<td>Metal splinters and burs.</td>
<td>Replace cutters regularly to minimise risk of cutter shattering.</td>
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<tr>
<td></td>
<td>Shattered cutter.</td>
<td>Awareness of materials more likely to cause flying debris, and thus awareness of nearby co-workers.</td>
</tr>
<tr>
<td></td>
<td>Flying debris.</td>
<td>Not used in cutting conditions that generates sparks.</td>
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<tr>
<td></td>
<td>Use of kerosene as a cutting lubricant.</td>
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</tbody>
</table>

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## 4. List resources required including personal protective clothing, chemicals and equipment needed

**PERSONAL PROTECTIVE EQUIPMENT**

- Safety glasses must be worn at all times in work areas.  
- Sturdy footwear must be worn at all times in work areas.  
- Long and loose hair must be contained.  
- Close fitting/protective clothing must be worn.  
- Gloves must not be worn.  
- Rings and jewelry must not be worn.

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## 5. List step by step instructions or order for undertaking the task

**PRE-OPERATIONAL SAFETY CHECKS**

- Ensure material to be cut poses no hazard. For unusual materials consult the manufacturers' Material Safety Data Sheets (MSDS) for specific technical data and precautionary measures.  
- Locate and ensure you are familiar with all machine operations and controls.  
- Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.  
- Ensure there is adequate lighting and ventilation in the area of operation.  
- Check workspaces and walkways to ensure no slip/trip hazards are present.  
- Ensure that all machine slides and moving parts are clean, correctly adjusted and lubricated.  
- Ensure a suitable cutter (in good condition) is fitted and is securely mounted.
OPERATIONAL SAFETY CHECKS

✓ Keep clear of moving machine parts.
✓ Follow correct clamping procedures. Keep overhangs as small as possible and check work piece is secure.
✓ Use only properly fitting tee slot bolts or nuts in the tee slot grooves on the table to hold vice/accessories/work piece.
✓ Ensure that the vertical head (if used) has been set square to the machine table.
✓ Check that all appropriate fasteners including swivelling head and/or table, vice/accessory/work piece mounting bolts, etc are tightened properly.
✓ Ensure that machine slides and/or quill not being used are locked.
✓ Set the direction of spindle rotation and the correct speed to suit the cutter diameter and the material.
✓ Select a suitable feed rate.
✓ Ensure that feed control is in neutral before starting machine.
✓ Use cutting fluid or coolant on the work piece and cutting tool where appropriate.
✓ Feed the work piece against the rotation of the cutter.

DON'T

✗ Do not use faulty equipment. Immediately report suspect machinery.
✗ Do not try to lift machine accessories or work pieces that are too heavy for you.
✗ Do not use rags near rotating cutters, tooling or machine parts.
✗ When using unbalanced tooling, such as boring heads etc, take care not to start the machine at a high speed. Start the machine initially at a low speed to assess the effect of the out of balance and progressively increase the speed.
✗ Never leave the machine running unattended.
✗ Do not use compressed air for cleaning the machine.

6. List emergency shutdown procedures
Hit Emergency Stop button.

7. List Emergency procedures for how to deal with fires, spills or exposure to hazardous substances
Should kerosene be used and a spark generated with a resultant fire, if manageable, extinguish with nearby extinguisher. Otherwise raise alarm and evacuate. Kerosene spills would be small volumes only (<50mL) thus managed with a local spill kit of vermiculite. All decanting from 20L drums is conducted in the chemistry store with all appropriate facilities in place for this task (eg: ventilation, bunding, spark-free environment).

8. List Clean up and waste disposal requirements
Wearing gloves, remove swarf and clean down mill after each use, as well as intermittently during the job. Where appropriate, swarf is retained for metal recycling, otherwise, all debris to general waste.

9. List legislation used in the development of this SWP

10a. List competency required – qualifications, certificates, licensing, training - e.g. course or instruction:
Metal Trades Craftman's Certificate, or equivalent.

10b. List competency of Assessor
David Beech – Senior Technical Officer (Physics) – BSc (Eng)

11. Supervisory approval, And review

Supervisor: Gemma Thompson

Responsibility for SWP review: Gemma Thompson

Signature:

Date of review: 9th August 2013

12. SWP Sign off sheet

SWP name and version:
In signing this section the assessor/authoriser agrees that the following persons are competent in following this SWP:

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date Competent</th>
<th>Name of Assessor/Authoriser</th>
<th>Assessor/Authoriser signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew McVicar</td>
<td></td>
<td>9th August 2013</td>
<td>David Beech</td>
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<tr>
<td>Marcel Kaegi</td>
<td></td>
<td>9th August 2013</td>
<td>David Beech</td>
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<tr>
<td>Rattan Bhandari</td>
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<td>9th August 2013</td>
<td>David Beech</td>
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<tr>
<td>Ces Delapez</td>
<td></td>
<td>9th August 2013</td>
<td>David Beech</td>
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<tr>
<td>Michael Paterson</td>
<td></td>
<td>6th October 2011</td>
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<tr>
<td>Terry Pfeiffer</td>
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<td>6th October 2011</td>
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