DEPARTMENT OF MECHANICAL ENGINEERING

<table>
<thead>
<tr>
<th>Name of SOP</th>
<th>P3 CNC Machine (Using Dremel tool made at McMaster)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Date</td>
<td>April 15, 2004  Rev. January 21, 2008</td>
</tr>
<tr>
<td>Author</td>
<td>Joe Verhaeghe</td>
</tr>
<tr>
<td>Reason for SOP</td>
<td>Risk of eye injury Pinch points</td>
</tr>
<tr>
<td>Approved by (supervisor)</td>
<td>Ron Lodewyks</td>
</tr>
<tr>
<td>Date reviewed by JHSC</td>
<td>February 13, 2008</td>
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Definitions

<table>
<thead>
<tr>
<th>Terms</th>
<th>acronyms</th>
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<tbody>
<tr>
<td>RMM</td>
<td>RMM – Risk Management Manual</td>
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<tr>
<td>JHSC</td>
<td>JHSC - Joint Health and Safety Committee</td>
</tr>
<tr>
<td>Chair</td>
<td>Chair - Chair of Mechanical Engineering</td>
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<tr>
<td>EOHSS</td>
<td>EOHSS - Environmental Occupational Health &amp; Safety Service</td>
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Requirements

Applicable OHSA regulations and / or codes of practice.
1. OHSA code.
2. McMaster University Risk Management Policies

Training and competency.
1. Training provided by technical staff in the Mechanical Engineering Department.
2. Competency is shown by the individual after training.

Description of the Task

<table>
<thead>
<tr>
<th>Location and time of work</th>
<th>JHE-B109</th>
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<tbody>
<tr>
<td>Individuals and skills required</td>
<td>Students</td>
</tr>
<tr>
<td>Equipment and supplies required</td>
<td>CNC Machine (Dremel tool)</td>
</tr>
<tr>
<td></td>
<td>CNC Machine Amplifier</td>
</tr>
<tr>
<td></td>
<td>Dell PC</td>
</tr>
<tr>
<td>Personal protective equipment required</td>
<td>Protective eyeglasses</td>
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Sequential steps to complete the work safely.

CAUTION: Keep clear of moving parts. Wear eye protection

1. Put on safety glasses.
2. Ensure “MAIN POWER” is “OFF”  
3. Ensure “SPINDLE POWER” is “OFF”  
4. Set “AMPS ENABLE CONTROL” switch to “DISABLE”  
5. Ensure Dremel tool “SPEED” is set to 2 or 3  
6. Ensure cutting tool is inserted correctly and tight  
7. Ensure Dremel tool power cord is clear of any moving parts and cutting area.  
8. Loosen all 3 “WORKPIECE CLAMP” thumbscrews and remove left thumbscrew.  
9. Insert workpiece underneath “WORKPIECE CLAMP”  
10. Tighten all 3 “WORKPIECE CLAMP” screws  
11. Close access door  
12. Ensure computer is turned on and is ready to run program  
13. Turn “MAIN POWER” switch “ON”  
14. Turn “SPINDLE POWER” switch “ON”  
15. Set “AMPS ENABLE CONTROL” switch to “ENABLE”  
16. Run program and proceed with cutting.  
17. Repeat the procedure for sequential workpieces
Contingency Plan and Reporting

Accident / injury response

1. Apply first aid as required
2. Notify Mechanical Engineering technical staff immediately
3. For all injuries complete a “Injury/Incident Report” and provide a copy to the Chair and EOHSS
5. In case of critical injury notify EOHSS immediately, ext 24352

Spill response none

Equipment shutdowns. None

Environmental Responsibility

Waste disposal procedures

1. Use wet/dry vacuum to clean cuttings from CNC machine after vacuuming. Remove the power head from vacuum to allow the water to evaporate

Building air quality

References (OHSA/ regulations, EPA and Municipal environmental regulations, McMaster University Program/ Policy, Material Data Sheets (MSDS).

1. RMM #301 Standard Operating Procedure
2. RMM #300 Safety Orientation and Training Program
3. RMM #310 Eye Protection
4. RMM #309 Laboratory safety manual

Distribution

1. Trained teaching assistant who is the lab operator
2. Technical Staff of Mechanical Engineering
3. Mechanical Engineering Chair
4. Faculty of Engineering JHSC