

 <b>DALHOUSIE UNIVERSITY</b> <i>Inspiring Minds</i>  <b>Safe Work Instructions for Powered Mitre Cut Hack Saw</b> (Mitercut Model 220M)	<i>Policy Sponsor:</i>  Assistant Vice President Facilities Management	<i>Approval Date:</i>  November 2016
	<i>Responsible Unit:</i>  Trade Services	<i>Revisions:</i>  January 2018

<b>Known Hazards</b> <ul style="list-style-type: none"> <li>• Slipping or tripping</li> <li>• Loose clothing getting caught in moving parts</li> <li>• Long hair or jewellery getting caught in moving parts</li> <li>• Noise</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of eye injury</li> <li>• Falling objects</li> <li>• Failure to support heavy stock</li> <li>• Being cut on blade</li> <li>• Saw Head</li> <li>• Metal splinters, sharp edges and burrs</li> </ul>
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<b>Job Specific Training Requirements</b> <ul style="list-style-type: none"> <li>• Proper operation of equipment</li> <li>• Standard shop safety practices</li> </ul>
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<b>Applicable Regulations / Standards / Procedures</b>
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<b>Required Personal Protective Equipment</b> <ul style="list-style-type: none"> <li>• Safety footwear</li> <li>• Safety glasses and/or face shield</li> <li>• Hearing protection</li> </ul>	<ul style="list-style-type: none"> <li>• Close fitting protective clothing</li> <li>• Safety / work gloves</li> </ul>
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<b>Pre-Use Procedures</b> <ul style="list-style-type: none"> <li>• Only fully trained and qualified employees are to operate this equipment.</li> <li>• Ensure there no slip or trip hazards exist in the work area.</li> <li>• Check coolant tank and delivery system to ensure there will be sufficient flow of coolant.</li> <li>• Ensure the cutting table is free of filings or other debris.</li> <li>• Check to ensure the base is securely anchored to the floor.</li> <li>• Ensure that the saw is level.</li> <li>• Check the blade for damage or wear to teeth.</li> <li>• Ensure the blade is square to the bed and the stationary vise by using a machinist square. Realign if necessary.</li> <li>• Check the power cord and three prong plug to ensure they are not damaged in any way.</li> <li>• Check that all safety devices are in place.</li> </ul>
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- If the equipment is found to be faulty in any way it must not be used. Report equipment problems to your supervisor immediately. Tag equipment with a DO NOT USE tag until repairs have been completed.
- Ensure that moving parts are oiled with general machine oil on a regular basis.
- Keep away from all moving parts.
- Keep the work area and saw clean and ensure all obstacles are removed from the work area.
- Always support long or heavy stock in the front and rear of the saw.
- Provide warning markers to prevent other employees or persons from walking in to long pieces of stock mounted on cutting table.
- Ensure that stock is securely clamped in place before operating saw to cut stock.
- Always wear gloves and safety glasses when changing the saw blade.
- Always disconnect (lockout where necessary) the saw from the power supply when performing maintenance on this saw.
- Ensure that you use the proper saw, feed rate and the proper coolant.
- Ensure that any extension cord used 12 gauge.
- Always follow the manufacturer's recommendations regarding lubricants.

### **Blade Selection, Installation and Break In**

- Use premium quality saw blades to achieve the best cutting results.
- Only use the following blade size; 19 mm x 3048 mm (3/4 inch x 10 ft.(120 inches)).
- Always follow proper procedure for uncoiling blades. If in doubt contact the blade supplier for instructions.
- DO NOT uncoil the blade by throwing it into the air.
- Install and tension blades by following the directions provided in the manual.
- Check, using an accurate machine square, to ensure the blade is square to the bed and the stationary vise.
- The blade is always to be tensioned to 25,000 psi.
- Always follow proper blade break in procedures (found in the Owner's Manual) to maximize blade life.
- Follow the directions in the Owner's Manual to properly adjust blade speed to match the blade material type.

## **Operational Procedures**

- Ensure the saw is properly connected to a fused disconnect that matches the rating on the equipment name plate.
- Turn the FED SPEED CONTROL VALVE clock wise to the Off position.
- Lift saw head high enough to clear the material to be cut.
- Place the material on the saw.
- Ensure that the blade is tensioned correctly. (See Section 9.2 of the Owner's Manual.)
- To maximize blade life use a blade that has at least three teeth in contact with the material at all times.
- Advance the material to the desired length past the cutting blade.
- Clamp material firmly making sure that material is level and square with the machine.
- Support the material if it overhangs the cutting table by any great amount.
- Alert other employees to the potential hazard created by the overhanging end(s) of the material with a warning sign or tap.
- Ensure that no one stands in front of the saw when it is started.
- Start the saw by depressing the START button.
- Lower the saw head by slowly opening the FED SPEED CONTROL VALVE until the desired rate is achieved.
- Ensure the coolant hose is directed onto the blade before starting cut.
- Keep clear of all moving machines parts.
- When the machine has finished cutting the blade will stop and the coolant pump will turn off.
- Turn Off equipment if finished.
- Turn Off equipment if you are going to clean the cutting table.
- Repeat the above steps to cut the required number of pieces.
- Remove accumulated swarf and filings from cutting table before cutting each new piece.
- NEVER leave the saw running when it is unattended.
- Always turn the saw OFF when finished cutting.

## **Clamping Material In Vise**

- Open vise wide enough to accommodate the material to be cut.

- Place material in vise and set at desired length.
- Adjust vise moving and engage vise push bar into vise rack.
- Turn vise tightening handle until material is firmly clamped.

### **Miter Cutting Procedures**

- Turn OFF Feed Shut-Off Valve.
- Make sure the saw is OFF.
- Lift saw head up to clear the blade from the bed and material.
- Loosen miter lock handle to free the saw head.
- Swing the saw head to the desired angle (From 0 degrees to 45 degrees) indicated on the miter angle scale.
- Tighten miter lock handle at required angle to lock the saw head.
- Check to ensure that everything is clear of the blade.
- You can now make your cut.

### **Vertical Cutting Procedures**

- Turn saw OFF
- Ensure that the saw is in the 0 degree miter cutting position.
- Lock the pivot tightening screw.
- Turn the feed speed control valve to zero.
- Make the saw head upper limit stop is extended.
- Lift the saw head until the saw head strikes the upper limit stop.
- Move the saw head upper limit stop by loosening the stop locking screw.
- Position yourself on the right hand side of the saw (motor end) and lift the saw slowly to the vertical position.
- CAUTION: Take extra care as the saw passes the pivot point since you will have to hold the saw back instead of lifting the saw.
- Unlock the pivot tightening screw and swing the head to the 45 degree position.
- Retighten the pivot tightening screw.
- Move the vise until closed with stationary vise, open approximately  $\frac{1}{4}$  inch.

- Remove payoff / vertical table from payoff use.
- Position blade into slot and lower leg into vise until stop plate on table rests on top of the stationary vise.
- Tighten vise.
- Position coolant hose and move guide arm to required position.
- Ensure everything is tight.
- Keep hands clear of saw blade.
- Turn the saw on and do a visually check to ensure everything is okay.
- You can now start your cut.

### **Horizontal Cutting Procedures**

- Turn OFF Saw.
- Unclamp vise, remove cutting table and re-install in the payoff position.
- Loosen pivot locking screw and reposition saw in 0 degree miter position.
- Tighten pivot locking screw.
- Open feed speed control valve.
- Push saw head over until its center of gravity passes the pivot point.
- Reposition yourself to the slide end and slowly pull down saw head until the saw head is full down.
- Reposition saw head upper limit stop so that it is extended and can be locked in position.
- You can now use the saw for doing horizontal cuts.

### **Additional Information**

- Raising the saw to the vertical cutting position and lowering it to the horizontal cutting position must be done as described in the Mitercut Model 220m manual.
- Follow manufacturer's instructions for miter, vertical and horizontal cutting.
- Cutting speeds must be adjusted as described in Section 11 of the owner's manual.
- Ensure that you clean the saw and the work area when you work is finished.