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| **SAFE WORK PROCEDURE**  **CNC Router Table** | **Insert Reference**  **Code: e.g.UBC-RMS-**  **OHS-SWP14-001** |
| **Engineering Design Center-Room 211** | Effective date: September 4,2015  Review date: Date reviewed  Supersedes: Previous version |

**CNC Router Table Safety**

# 1. SCOPE

This SWP applies to all authorized operators of the CNC Router table in the room 211, EDC**.**

**2. PURPOSE**

The SWP provides guidance for the safe use and controls needed for operating the CNC Router Table.

# 3. BACKGROUND

The CNC router is a computer controlled cutting machine for cutting various materials, such as wood, composites, plastics, and foams. CNC stands for computer numerical control. Working with some of these materials can poses serious risks including generating combustible particulate solids and impose serious inhalation hazards.

# 4. RESPONSIBILITY

It is the responsibility of all authorized operators to have read and thoroughly understood this SWP and demonstrated competency to their team captain, faculty supervisor, and/or APSC Safety & Facilities Officer.

1. **TRAINING REQUIRED**

Access to EDC room 211 is limited to student team member who have completed the EDT Safety Orientation, WHMIS, and Bullying & Harassment Awareness courses. Due to the additional hazards present, access also requires completion of recognized UBC shop safety training (e.g. MECH Shop Safety, Engineering Physics SMS). This piece of machinery requires specific training. Please contact Applied Science Safety and Facilities Officer, Richard Colwell.

# 8. HAZARDS

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| * Respiratory hazards - work piece dust generation | * Hearing injuries | * Ejected swarf/chips |

# 9. CONTROLS (for above listed hazards)

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| * Particulate filter respirator - during operation | * Safety Glasses |
| * Long/ loose hair must be contained | * No loose - fitting clothing |
| * Rings and jewelry must not be worn | * Hearing protection |

1. **PRE PROCEDURE SET-UP**

• Always keep the area around the machine clear of obstacles.

• Always stack material where you can reach it but where it is clear of the moving parts of the machine.

• Always check that tools are sharp and set correctly.

• Always check that the correct tool data is entered into the CNC program.

• Always make sure that no body parts are inside the CNC "cage" while the machine is in operation.

• Always ensure that the “cage” is closed and the dust collection system is active before starting the machine.

• Always make sure that all work and fixtures are clamped securely before the starting machine.

• Always make sure spindle direction is correct for right-hand or left-hand operation.

• Consider a dry run to ensure the program is correct.

• Always follow board policy on correct procedures when handling or lifting parts or tooling.

• DO NOT USE COMPRESSED AIR FOR CLEANING! Compressed air can cause fine dust to jam the axis of the table thus cause serious damages.

**PROCEDURE**

• Always eye protection and closed-capped boots.

• Do NOT use materials harder than MDF since the machine does not have spindle rate control.

• Wood, foam and MDF boards can often create fine sawdust, so make sure you wear safety goggles, as well as a half-mask to cover your nose and mouth. Masks need to be properly fit-tested before using the machine.

• Never wear baggy clothes, neckties, and jewelry.

• Only wear gloves when your machine is not in operation and you are handling materials.

• If your machine is loud, wear hearing protection such as soundproof buds or headphones to prevent damages to your ears.

# 12. POST PROCEDURE/TAKE DOWN

• Remember to completely power of the machine before deciding to clean it or perform maintenance.

• The area around the machine should be clear of oil and coolant spills. Keep the surrounding area free from obstructions.

• When finished, always clean debris from inside the machine before using it again. Avoid letting chips build up in the machine as these can prevent the rotor from moving.

• DO NOT USE COMPRESSED AIR FOR CLEANING! Compressed air can cause fine dust to jam the axis of the table thus cause serious damages.

# 13. EMERGENCY PROCEDURES

• During operation, touch any key on the keyboard or click "pause" to stop the axis. Turn off the router quickly if there is any unexpected motion.

• In the event of a serious injury, call 911 (students) or 2-4444 (staff and faculty). Refer to the First Aid information sheet posted above the sink.

• In the event of a minor injury, refer to the First Aid information sheet posted above the sink and contact the local First Aid Attendant.

# 14. OTHER IMPORTANT INFORMATION

Contact the APSC Safety & Facilities Officer (room 235) about any concerns with the condition of the workspace.

# 15. REVIEW AND RETENTION

This SOP is reviewed annually or whenever deemed necessary by the responsible departmental representative in Risk Management Services.

# 16. DOCUMENT APPROVAL SIGNATURES

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| **Initial Creation Date:** | |  |  |
| **History:** | |  |  |
| **Revised By:** | |  |  |
|  | Creator | Management | Unit Head |
| Name | [name] | [name] | [name] |
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