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| CARVEY CNC machine Safe Operating Process | | | | | | | |
| This Safe Operating Process (SOP) is to be used in conjunction with any legislation, operating manuals, Australian or International Standards or task relevant training. | | | | | | | |
| **Description of the Work:** | | | | | | | |
| Operate the Carvey CNC machine in the Library MakerSpace to complete projects. | | | | | | | |
| **Personal Protective Equipment Required:** *remove any which are not relevant* | | | | | | | |
|  | Safety glasses may be required for some operations. | | |  | | Safety gloves may be required for some operations. | |
|  | Safety guard / Carvey Lid must be used at all times. | | |  | | Hearing protection may be required for some operations. | |
|  | Face masks must be used at when opening the device. | | |  | | Long and loose hair must be contained. | |
| **Potential Hazards** | | | | | | |
| * Wet surfaces and electricity | | | | | * Fine particles when lid is opened after a project | |
| * Using non approved materials could cause toxic fumes or damage the CNC machine - Absolutely no PVC (including vinyl), metal (including aluminium, or circuit boards), foam, treated or glued wood, ceramics, | | | | | * Cuts from sharp tool bits * Pinching hazard and finger jams form lid | |
| **Pre-Operational Safety Checks:** | | | | | | |
| * Make sure you have completed the CARVEY induction. * Only use approved materials on the CARVEY. Obtain approval from a MakerSpace technician for use of any material not supplied by the MakerSpace. * Never attempt to cut magnesium or any other flammable material. Sparks or fire may occur if used. * Do not use Carvey with liquid materials or any materials containing liquid. * Do not attempt to cut anything bigger than the cutting bed - width (X-axis): 11.3 inches / 30 cm, Depth (Y-axis): 8 inches / 20 cm, Height (Z-access): 1.5 inches (3,81 cm) . * Ensure the material is clamped securely under the smart clamp and AT LEAST 2 other Carvey clamps. If you have trouble fastening your project ask a makerspace technician. * In Easel, ensure that there are no collisions with your model and clamps. The “step over height” machine setting under advanced can aid with this. * Use the ‘tab’ feature in easel to keep pieces secured during a cut-through operation. * Check that the cutting tool is in good condition (not burned, blunt or snapped). * Ensure that the collet is tightly secured and the correct cutting bit is installed. * Check that no tools are present in the Carvey cabinet. | | | | | | |
| **Operational Safety Checks:** | | | | | | |
| * Ensure the lid is closed (carvey should not operate if lid is is open) * Do not move the material or print bed during cutting operations. * Do not initiate movement of the cutting head whilst any foreign objects are close to or in machine (clothing, fingers hair). * Do not place fingers or tools inside the router while parts are cutting. | | | | | | |
| **Post-Operational Safety Checks:** | | | | | | |
| * Enrue you are wearing a face mask and glasses when you open the Carvey lid. Particles may be floating in the air. * Vacuum dust and debris BEFORE removing your part. * Do not move print bed or print head by hand. * Exercise caution when handling material around sharp cutting tools - especially when removing your project from CARVEY * Never touch tools immediately after cutting operations as they may be hot. * Do not use liquid or aerosol cleaners to clean the inside of Carvey’s work area. * Remove the tool/drill bit, clamps and leave the cabinet clean before leaving the MakerSpace. * Return any tools used in the project to the appropriate storage. | | | | | | |
| **Housekeeping:** | | | | | | |
| * Return PPE equipment to PPE storage | | | | | | |
| * Clear residue and debris from the workspace and place waste in appropriate bins | | | | | | |
| **Maintenance & Cleaning** | | | | | | |
| Daily / after each project   * Vacuum inside the carvey * Clear carvey and workspace of any residue or debris and place waste in appropriate bins   Weekly   * Inspect and replace carving bits when necessary. (MS Technician) * Dust / wipe down the Carvey cabinet (MS Technician)   Quarterly or as required   * Clean under metal skid plates when necessary ( MS Technician ) * Replace waste board when necessary. (MS Technician ) * Tension or replace Carvey’s X and Y-Axis belts when they stretch or break. (MS Technician ) * Clean and service the smart clamp or replace if necessary. ( MS Technician ) | | | | | | |
| **Assessed by:** | | Charles Barnett | | | | |
| **Date of Assessment:** | | | **18 July 2018** | | | |