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| 1. Hazard Management Details – General | | |
| **Plant/Equipment Item: CNC Router** | **Make/Model No.:** | **Serial No.:** |
| **School / Work Location:** | **Region:** | |
| **Name of Person(s) Conducting Activity:** | | **Date Conducted:** |
| **CNC Router  100_0870** | **Description of Use:**  A computer numerical control (CNC) router is used for cutting wood, plastic, or metal.  It consists of a router on three racks allowing for movement in the X, Y, and Z axes. The machine utilises many different parts to create different effects in the material being worked.  The CNC machine is fully computer controlled and programmable with user interaction only required when setting up the cutting piece and installing the work piece. | **Summary of Key Risks:**  **(refer to appropriate subsections)**   * Entanglement * Impact and cutting * Electricity * Noise * Slips/trips/falls * Temperature * Other (dust) |

Plant and Equipment Risk Management Form

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| 2. Documentation | | |
| **Relevant Legislation/Standards** | **Y / N** | **Comments** |
| **Is plant required to be registered?** | Y  N |  |
| **Is a user license required?** | Y  N |  |
| **Key Reference material** |  | AS 4024.3101 Safety of machinery - Materials cutting - Milling machines (including boring machines) - Safety requirements  AS/NZS 3760 In service safety inspection and testing of electrical equipment  AS 4024.1 Safety of machinery |
| **Plant Documentation** | **Y / N** | **Comments** |
| **Are operator’s manuals accessible?** | Y  N |  |
| **Is this a restricted use item?** | Y  N |  |
| **Does this item require safe use documents/test?** | Y  N |  |

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| 3. Hazard Identification | |  | | | | |
| **Hazards Inspected** | | **Risk Assessment** | | | **Description of Risk** | **Control Measures** |
|  | | **Cons** | **Like** | **Risk**  **Level** |  |  |
| **ENTANGLEMENT**  Can anyone’s hair, clothing, gloves, cleaning brushes, tools, rags or other materials become entangled with moving parts of the plant or materials? | Y  N | Moderate | Unlikely | Medium | Long hair, loose clothing, rags, cleaning brushes and jewellery could become entangled in the moving parts of the equipment. | Ensure hair, loose clothing, rags and jewellery is kept clear of moving parts when in use.  Aprons can be used to restrict loose clothing.  Hair ties/hair nets can be used to secure long hair.  Ensure inappropriate jewellery and accessories (e.g. bracelets) are not worn when operating equipment. |

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| Hazards Inspected | | Risk Assessment | | | Description of Risk | Control Measures |
|  | | **Cons** | **Like** | **Risk**  **Level** |  |  |
| **IMPACT AND CUTTING**  Can anyone be crushed/cut/struck etc. due to: |  |  |  |  | The moving cutter presents a significant risk to an operator’s hands and body parts. | Ensure operator’s hands and body parts are kept clear of moving parts during operation and maintenance.  Ensure work pieces are appropriately secured prior to operation.  Ensure appropriate PPE is worn whilst operating the equipment (e.g. eye protection)  Ensure operator receives appropriate instruction before attempting to use any CNC equipment. |
| * Material falling off the plant? | Y  N |  |  |  |
| * Uncontrolled/unexpected movement of plant/load? | Y  N |  |  |  |
| * Lack of capacity to slow, stop or immobilise plant? | Y  N |  |  |  |
| * The plant tipping or rolling over? | Y  N |  |  |  |
| * Parts of the plant disintegrating or collapsing? | Y  N | Moderate | Rare | Low |
| * Contact with moving parts during testing, inspection, operation, maintenance, cleaning or repair? | Y  N | Moderate | Possible | Medium |
| * Being thrown off or under the plant? | Y  N |  |  |  |
| * Contact with sharp or flying objects? (e.g. work pieces being ejected) | Y  N | Moderate | Possible | Medium |
| * The mobility of the plant? | Y  N |  |  |  |
| * Inappropriate parts and accessories being used? | Y  N |  |  |  |
| * Other | Y  N |  |  |  |

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| Hazards Inspected | | Risk Assessment | | | | Description of Risk | Control Measures |
|  | | **Cons** | **Like** | **Risk**  **Level** |  | |  |
| **SHEARING**  Can anyone’s body parts be sheared between two parts of plant, or between a part of the plant and a work piece or structure? | Y  N |  |  |  |  | |  |
| **PRESSURISED CONTENT**  Can anyone come into contact with fluids or gases under high pressure, due to plant failure or misuse of the plant? | Y  N |  |  |  |  | |  |
| **ELECTRICITY**  Can anyone be injured or burnt due to: |  |  |  |  | Damaged or frayed electrical cords would pose an electrical hazard. | | Operator to check for damaged electrical cords prior to use.  Ensure equipment is regularly serviced, tested and tagged and appropriate isolation procedures (i.e. lock out tags) are in place. |
| * Live electrical conductors? (e.g.exposed wires) | Y  N |  |  |  |
| * Working in close proximity to electrical conductors? | Y  N |  |  |  |
| * Access to electricity? | Y  N |  |  |  |
| * Damaged or poorly maintained electrical leads, cables or switches? | Y  N | Major | Unlikely | Medium |
| * Water near electrical equipment? | Y  N |  |  |  |
| * Lack of isolation procedures? | Y  N |  |  |  |
| * Other | Y  N |  |  |  |

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| Hazards Inspected | | Risk Assessment | | | Description of Risk | Control Measures |
|  | | **Cons** | **Like** | **Risk**  **Level** |  |  |
| **ERGONOMICS**  Can anyone be injured due to: |  |  |  |  |  |  |
| * Poorly designed workstation? | Y  N |  |  |  |
| * Repetitive body movement? | Y  N |  |  |  |
| * Constrained body posture or the need for excessive effort? | Y  N |  |  |  |
| * Design deficiency causing psychological stress? | Y  N |  |  |  |
| * Inadequate or poorly placed lighting? | Y  N |  |  |  |
| * Does the plant impact on the surrounding workplace and create potential hazards? (Consider potential impact on the design and layout of the workplace) | Y  N |  |  |  |
| * Is the location of the plant inappropriate? (Consider potential effects due to environmental conditions and terrain) | Y  N |  |  |  |
| * Other | Y  N |  |  |  |

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| Hazards Inspected | | Risk Assessment | | | Description of Risk | Control Measures |
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| **RADIATION**  Can anyone using the plant, or in the vicinity of the plant suffer injury or illness due to exposure to radiation in the form of any of the following:   * infra-red radiation * ultra violet light * microwaves | Y  N |  |  |  |  |  |
| **NOISE**  Can anyone using the plant, or in the vicinity of the plant, suffer injury due to exposure to noise? | Y  N | Moderate | Unlikely | Medium | Operation of the plant equipment can result in high noise levels. | Ensure operator wears appropriate hearing protection (e.g. earplugs, earmuffs) whilst operating the equipment. |
| **VIBRATION**  Can anyone be injured or suffer ill health from exposure to vibration? | Y  N |  |  |  |  |  |
| **FRICTION**  Can anyone be burnt due to contact with moving parts, materials or surfaces of the plant? | Y  N |  |  |  |  |  |
| **SUFFOCATION**  Can anyone be suffocated due to lack of oxygen, or atmospheric contamination? | Y  N |  |  |  |  |  |
| **CONDITION**  Is a hazard likely due to the age and condition of the plant? (*Consider how hard the machine has been worked, and whether it is used constantly or rarely).* | Y  N |  |  |  |  |  |
| Can anyone be injured as a result of the plant not serviced appropriately and/or maintained in line with manufacturer’s recommendations? | Y  N |  |  |  |

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| Hazards Inspected | | Risk Assessment | | | Description of Risk | Control Measures |
|  | | **Cons** | **Like** | **Risk**  **Level** |  |  |
| **SLIPS/TRIPS/FALLS**  Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to: |  |  |  |  | Poor housekeeping allowing the build-up of waste materials or failure to immediately clean up spills could result in a slip hazard.  Inappropriate placement of objects (e.g. electric cord, spare materials, bags, etc) in the immediate vicinity of the plant equipment may result in a trip hazard. | Ensure appropriate cleaning and housekeeping standards are maintained at all times to minimise the risk of a slip, trip or fall. |
| * Uneven, slippery or steep work surfaces? | Y  N |  |  |  |
| * Poor housekeeping, e.g. spillage in the vicinity? | Y  N | Minor | Possible | Medium |
| * Obstacles being placed in the vicinity of the plant? | Y  N | Minor | Possible | Medium |
| * Inappropriate or poorly maintained floor or walking surfaces (i.e. lack of a slip-resistant surface, unprotected holes, penetrations or gaps?) | Y  N |  |  |  |
| If operating or maintaining plant at height can anyone slip, trip or fall due to: |  |  |  |  |
| * Use of work platforms, stairs or ladders? | Y  N |  |  |  |
| * Lack of guardrails or other suitable edge protection? | Y  N |  |  |  |
| * Other | Y  N |  |  |  |

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| Hazards Inspected | | Risk Assessment | | | | Description of Risk | | Control Measures |
|  | | **Cons** | | **Like** | **Risk**  **Level** |  | |  |
| **FIRE AND EXPLOSION**  Can anyone be injured by fire? | Y  N |  | |  |  |  | |  |
| * Can anyone be injured by explosion of gases, vapours, liquids, dusts, or other substances? | Y  N |  | |  |  |
| **TEMPERATURE/MOISTURE**  Can anyone come into contact with objects athigh or low temperatures? | Y  N | Minor | | Possible | Medium | Work and cutting pieces may get hot. | | Allow work and cutting pieces to cool prior to handling. |
| * Can anyone suffer ill health due to exposure to high or low temperatures? | Y  N |  | |  |  |
| * Can anyone be injured or suffer ill health due to exposure to moisture? | Y  N |  | |  |  |
| **OTHER** Can anyone be injured or suffer ill health from exposure to: |  |  | |  |  | Dust and vapours generated from the work process may be hazardous to health. | | Ensure appropriate control measures are implemented (e.g. local exhaust system, face masks, good housekeeping practices etc.). |
| * Chemicals? | Y  N |  | |  |  |
| * Toxic gases or vapours? | Y  N |  | |  |  |
| * Fumes / Dusts? | Y  N | Moderate | | Unlikely | Medium |
| * Other? (please specify) | Y  N |  | |  |  |
| **4. Risk Assessment Signoff** | | | | | | | | |
| Authorised By: | | | Signature: | | | | Date: | |

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| Consequence - Evaluate the consequences of a risk occurring according to the ratings in the top row  |  |  |  | | --- | --- | --- | | Descriptor | Level | Definition | | **Insignificant** | **1** | No injury | | **Minor** | **2** | Injury/ ill health requiring first aid | | **Moderate** | **3** | Injury/ill health requiring medical attention | | **Major** | **4** | Injury/ill health requiring hospital admission | | **Severe** | **5** | Fatality |   3. Risk level - Calculate the level of risk by finding the intersection between the likelihood and the consequences   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Likelihood | Consequence | | | | | | **Insignificant** | **Minor** | **Moderate** | **Major** | **Severe** | | **Almost Certain** | Medium | High | Extreme | Extreme | Extreme | | **Likely** | Medium | Medium | High | Extreme | Extreme | | **Possible** | Low | Medium | Medium | High | Extreme | | **Unlikely** | Low | Low | Medium | Medium | High | | **Rare** | Low | Low | Low | Medium | Medium | | Likelihood - Evaluate the likelihood of an incident occurring according to the ratings in the left hand column  |  |  |  | | --- | --- | --- | | Descriptor | Level | Definition | | **Rare** | **1** | May occur somewhere, sometime (“once in a life time / once in a hundred years”) | | **Unlikely** | **2** | May occur somewhere within the Department over an extended period of time | | **Possible** | **3** | May occur several times across the Department or a region over a period of time | | **Likely** | **4** | May be anticipated multiple times over a period of time  May occur once every few repetitions of the activity or event | | **Almost Certain** | **5** | Prone to occur regularly  It is anticipated for each repetition of the activity of event |   4. Risk Level/Rating and Actions   |  |  | | --- | --- | | Descriptor | Definition | | **Extreme:** | Notify **Workplace Manager and/or Management OHS Nominee** immediately. Corrective actions should be taken immediately. Cease associated activity. | | **High:** | Notify **Workplace Manager and/or Management OHS Nominee** immediately. Corrective actions should be taken within 48 hours of notification. | | **Medium:** | Notify **Nominated employee, HSR / OHS Committee**. Nominated employee, OHS Representative / OHS Committee is to follow up that corrective action is taken within 7 days. | | **Low** | Notify **Nominated employee, HSR / OHS Committee**. Nominated employee, HSR / OHS Committee is to follow up that corrective action is taken within a reasonable time. | |