

# Department of Mechanical Engineering

## Makerspace Safe Operating Procedure

### CNC Router

#### PRE-OPERATIONAL SAFETY CHECKS:

Ensure you are familiar with CNC 'nesting' and 'tool-pathing' software functionality. 2. Locate & ensure you are familiar with the operation of the ON/OFF and emergency stop controls. 3. Ensure that the guard door and safety devices are in position and secured. 4. Only machine materials that are suitable for this routing process. 5. Ensure that the router cutting bit size conforms to specifications. The machine must be isolated while any adjustments are made to the cutter head of tool array. 6. Ensure all cutters are sharp and free of resin build-up or wear. 7. Adjust the waste collector shroud and coolant system correctly for maximum efficiency. 8. Be aware of any other personnel in the immediate vicinity and ensure the area is clear before using this equipment. 9. Familiarize yourself with all electrical and mechanical operations and controls, including any handheld keypad interface remote control.

#### OPERATIONAL SAFETY CHECKS:

1. Never attempt to program this CNC machine without proper training. 2. Never pre-program any CNC router to perform operations beyond the capacity of the machine. 3. Confirm all CNC programming instructions for the router. 4. Ensure the work piece is securely held flat to the vacuum pads within the machine. 5. Ensure that the tool bit array tracking remains unobstructed during the routing operation. 6. Never leave the CNC router in operational mode while unattended.

**CAUTION: DO NOT** use this machine unless a teacher has instructed you in its safe use and operation and has given permission Safety glasses must be always worn in work areas. Long and loose hair must be contained or restrained. A mask must be worn when excessive airborne dust or toxic vapors are created. Appropriate footwear with substantial uppers must be worn. Rings and jewelry must not be worn near moving machinery components. Close fitting, protective clothing or a workshop apron is encouraged.

#### HOUSEKEEPING:

1. Leave the machine in a tidy, clean, and safe manner. 2. Return all tools and accessories to their proper place. 3. Be sure the area around machine is clean of all obstacles. 4. When finished, press e-stop and power off. 5. Leave it better than you found it.

## Potential Hazards

Impact, pinch, and crush points

Failure or malfunction

Entanglement and entrapment

Control errors

Manual handling

Dusts and fumes

Electrical components

Eye injury

By signing this document, I, \_\_\_\_\_, agree to abide by I agree to use makerspace responsibly in accordance with the rules, policies, and guidelines in this document.

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MEDDL User

Date

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MEDDL Makerspace

Date