

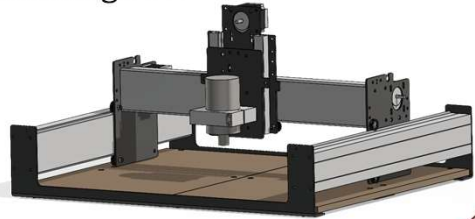
Safeguarding CNC Router

Team 514

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Objective

- Manage safety concerns
- Increase safety of user while machine is running
- Mitigate concerns of user not wearing PPE



Background

- Method of precise machining using computers to control the cutting of material
- **CNC Router:**
Cuts/carves shapes into various materials via a rotating cutting tool

Critical Targets

Function	Target	Metric
Halt Projectiles	$\geq 4,000$ N	Impact Force
Create no interference	Fully Operable	User observation
Limit access while running	2 ± 0.2 mm	Clearance

Concept Selection Characteristics

- Impact force on walls
- Clearance for body parts and dust particles
- Limited access to the machine while running
- Disassembly time for maintenance and maneuverability
- Displacement due to vibration

Hazards



Moving Parts



Projectiles

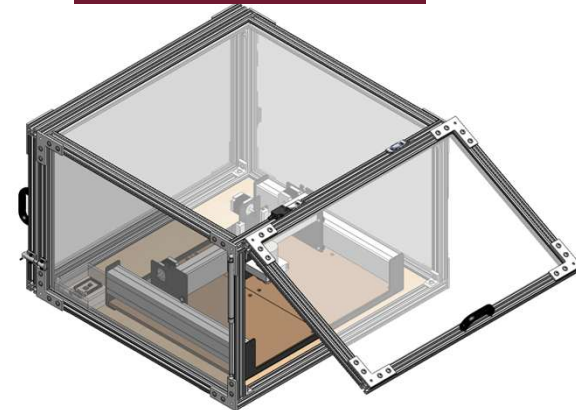


Impalement



Dust & Particulates

Current Concept



Future Work

- Create seal along openings
- Getting materials
- Vacuum attachment
- Testing targets and metrics
- Constructing final design