

Deliverable C

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Design Criteria

Highest priority (5)

- Jig should be reusable
- Jig should be durable
- Clamp should have a way to lock in place so the user can have their hands free
- Jig should be able to complete process in under 30 minutes

Pretty High Priority (4)

- Jig should be cost-efficient
- Jig holes should be precise and leave little room for error
- Clamp should be soft in order not to damage wood
- Clamp should not have any sharp edges in order not to damage wood

Medium Priority (3)

- Jig should not be complex (ease of use)
- Jig should guide the drill bit

Not Urgent Priority (2)

- Jig should be lightweight

Good to Have But Unneeded (1)

- Either make different jigs for different hinge sizes or a jig that is adjustable

Technical Benchmarking

- We want our locking and adjusting mechanisms of the clamp to be similar to a caliper
- We want to use a foam like material on the clamp to not damage the door
- Steel would be good for the jig because it is easy to weld and lightweight

Products that target satisfies interpreted need

- **Drill Guide:** What is a drill guide, a drill guide is a tool used to aid and guide workers when drilling holes. They consist of a base or frame with slots that guide the drill bit. They have an adjustable mechanism for setting holes and angles. Some are fixed, some are adjustable. Our groups aim to incorporate the adjustable mechanism and drill guide slot into a jig we are designing.
- **C -Clamp :** A C-Clamp is a clamp that utilizes a C shape and a stationary jaw and a movable jaw. Can be adjusted by the threaded screw once tightened it creates compression and holds the piece in place.
- **Socket Wrench Sets:** Socket wrench has a set of interchangeable socket heads, these sockets can be used for different sizes and types of nuts and bolts. We aim to integrate this function into our jig so it can have different faces for different drill hole configurations and sizes.

Target Specification of Product

1. Target Weight:
 - a. Max Weight: 160g
 - b. Min Weight: 140g
2. Target dimensions(Width X Height)
 - a. Max(Width X Height): (5.5" x 5.5")
 - b. Min(Width X Height): (5" x 5")
3. Target Efficiency:
 - a. User should take 10 minutes max to get used to it
 - b. Whole drilling and threading process should take less than 30 minutes

Adjusted Design Criterias

- During the client meeting, we learned that our jig needs to be simple
- During the client meeting, we learned that our clamps should not have any sharp edges
- During the client meeting, we learned that our clamp should be padded so the door does not get damaged

Client Meeting reflection

During our meeting with our clients from AMBICO, there was a significant emphasis on the need for a durable and efficient product. The jig should be designed to be efficient and easy to use. Warehouse workers aim to be productive, and a jig should not have a steep learning curve or require a lot of time to set up, as this can lead to reduced production levels in the warehouse.