Project Deliverable C: Design Criteria and Target Specifications

1. List of Prioritized Design Criteria

	Design Specification	Relation	Value	Units	Verification method
	Functional Requirements				
1.	Adjustable Steel cut-out jig. varies in increments of ¼ inch	=	1 ¾ to 2 ¾	Inch	Analysis, Test
2.	Reduce time	<	30	Minutes	Test
3.	Simple/ non-clunky	=	yes	N/A	Test
4.	Attaches to the door	=	yes	N/A	Test
	Constraints				
1.	Cost	=	100	$	Estimate
2.	Weight	=	yes	N/A	Test
3.	size	=	1/32	Inch	Test
4.	Does not damage the door	=	yes	N/A	Test
5.	Durable in harsh Environment	=	yes	N/A	Test
	Non-Functional Requirements				
1.	Aesthetics	=	yes	N/A	Test
2.	Product life/ Resilience	>	1	years	Extended Testing / Feedback
3.	Flash bolt inserted from top/bottom of the door	=	12	inch	Test

2. Technical Benchmarking

Specifications	**Company**		
	Norfield	N/A	Trend
Cost (incl. tax)	$901.30 (CAD)	$39.12 (CAD)	$178.90 (CAD)
Material	Aluminum	Plastic	Laminate
Door Thickness Range	1-3/8” to 2-1/4”	1.38” to 1.73”	1.18” to 3.15”

Horizontal Adjustability System	4 screws with turning knobs	2 sliding clamps	2 clamps and screws (screwdriver needed)
Vertical Adjustability	none (must be placed at end of door)	movable	movable
Thickness Centering Mechanism	none	none	Has ruler for centering
Router Template	for flush bolt	for door lock	for lock face
Image			
Link	https://norfield.com/7500-700-7-flush-bolt-fixture.html	https://www.ebay.ca/itm/354202858932	https://www.thewoodworkermag.com/new-adjustable-lock-jig

3. Target specifications

The client requires the jig to be accurate to at least 1/32 of an inch. Additionally, the jig must be durable, so it lasts for at least one year without needing to be repaired or replaced. To ensure durability, the jig should be made from corrosion-resistant materials, such as steel or aluminum.

Regarding the functionality of the jig, it should measure exactly 12” from the top/bottom of the door. The jig should also be adjustable to fit doors with widths from 1 ¾” to 2 ¾”. Further, the jig should align the flush bolt exactly in the center of the door’s width and cost no more than $100 (CAD).

4. Client Meeting Reflection

Deliverable B allowed us to organize our thoughts and ideas after meeting with the client. Asking questions after their presentation allowed our team to clarify many unknowns and provided insight on specific parameters, wants, and needs. Parameters of the flush bolt were provided in the meeting (always 6-3/4” by 1”). We also gained insight on specifics of their factory operations. Knowing that the environment the jig will be used in is dusty, our team decided that an adhesive would not work for our jig and rather it would need to be clamped to the door. However, the clamp must not damage the door. The main issue with the client’s current jig is the application process is tedious and lengthy. Currently it takes 30 minutes for the flush bolt cut-out and a steady hand as well as attention to detail. Ideally our jig will reduce the time spent on the cutout and will be easier to use. This jig must be adjustable to fit door thicknesses between 1-3/4” to 2-3/4” and have adjustable backsets.