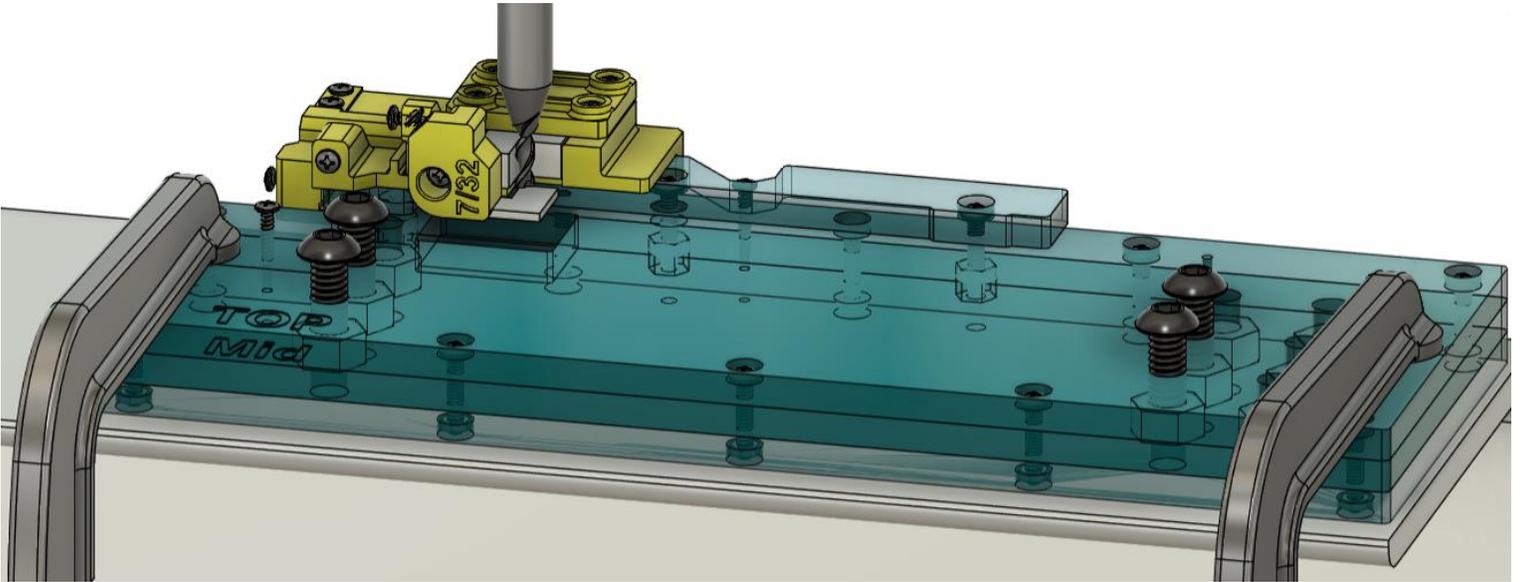
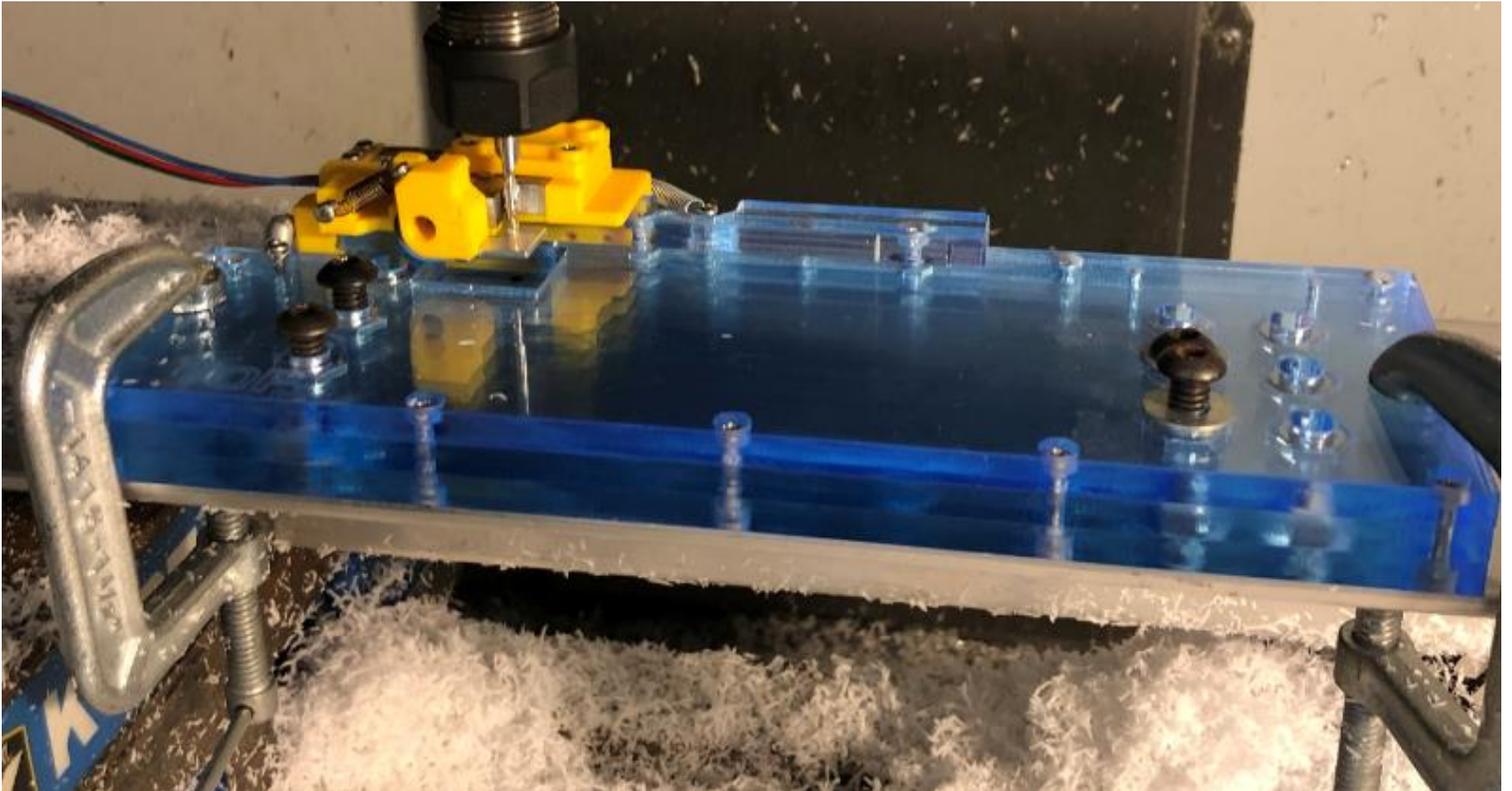


CNC Mill Fixture



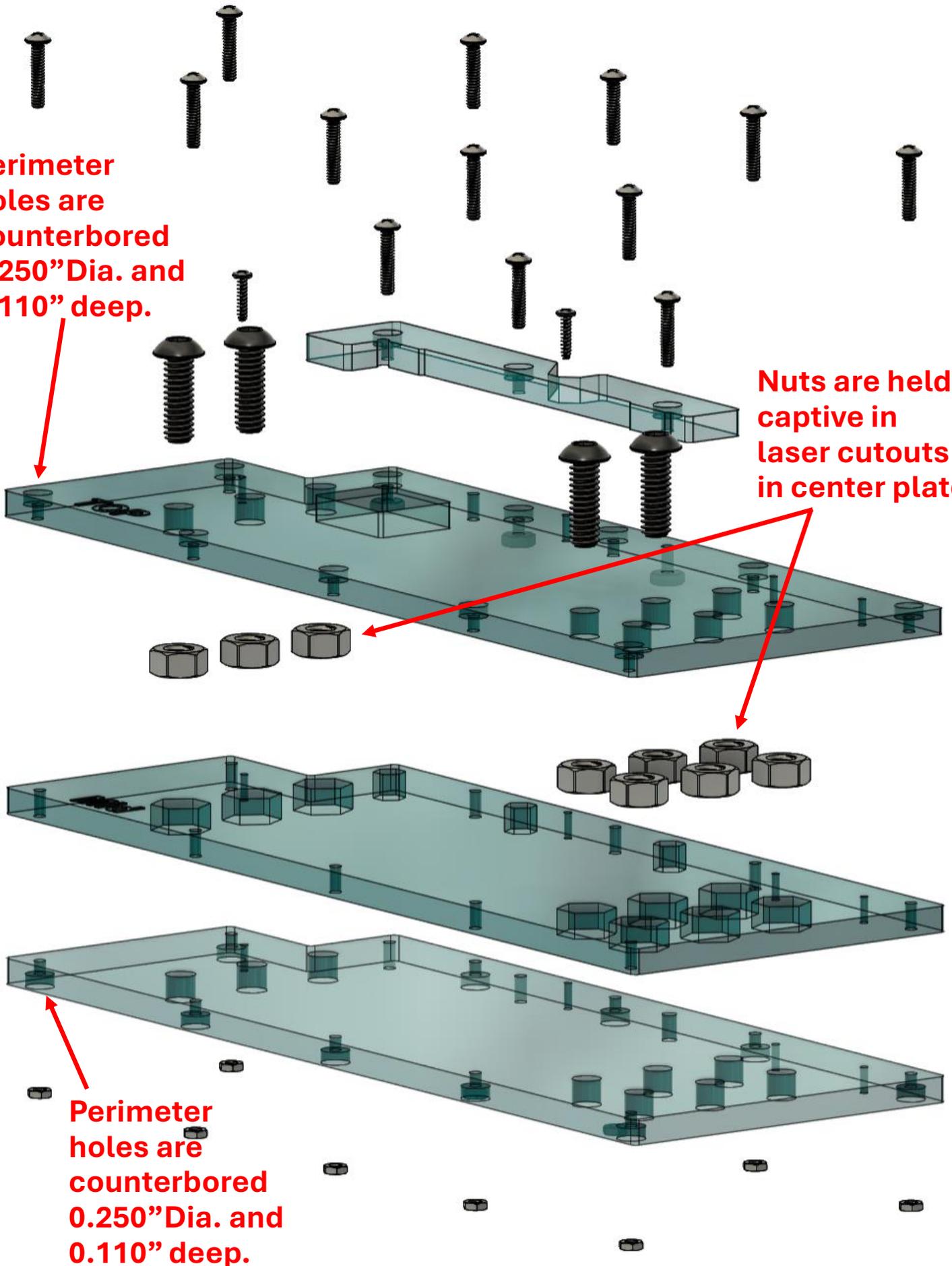
Fixture with Home Finder on Haas mill. The axes were jogged until the end mill is in a fixture home position.



Exploded view of Fixture

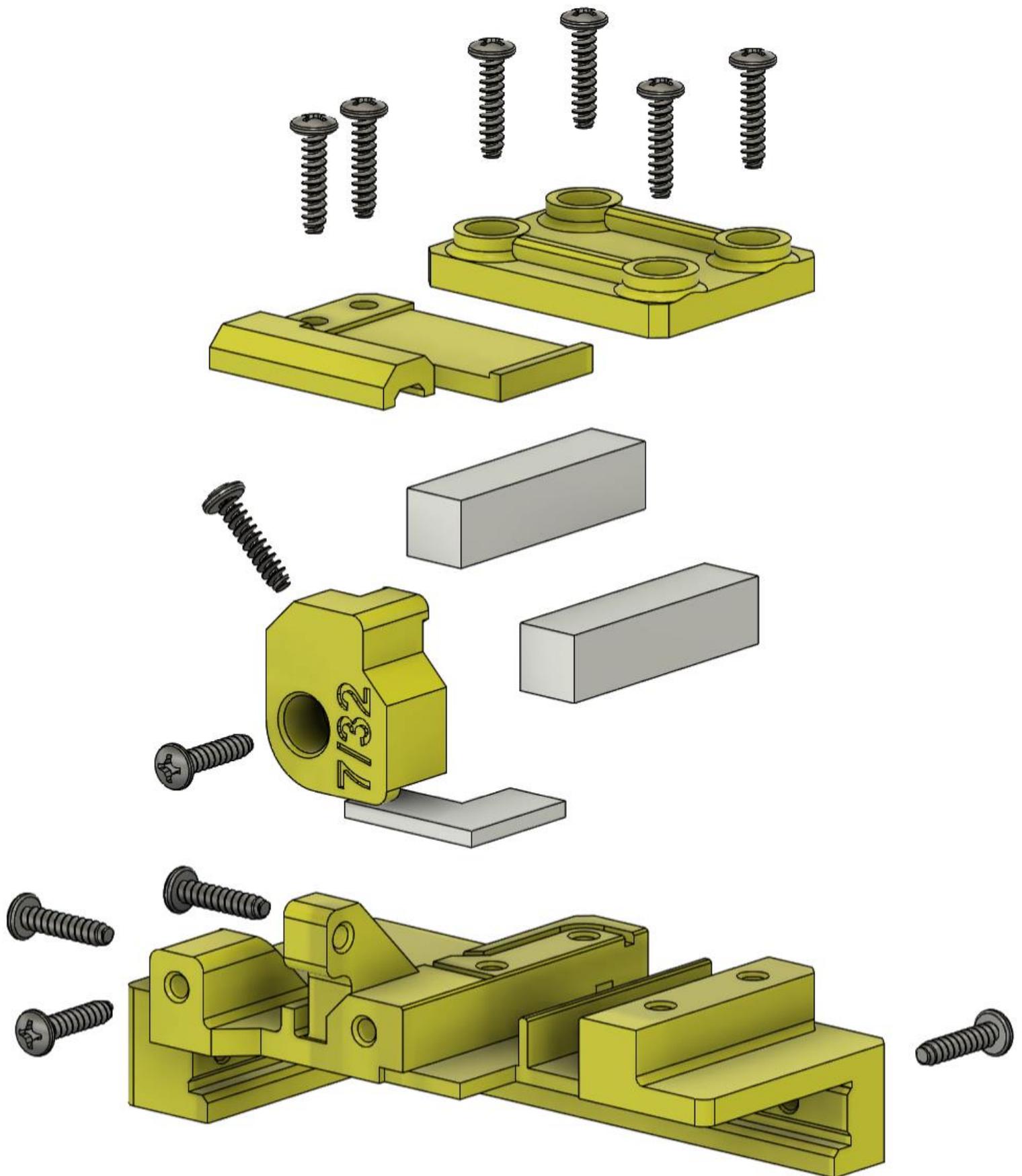
Perimeter holes are counterbored 0.250" Dia. and 0.110" deep.

Nuts are held captive in laser cutouts in center plate.



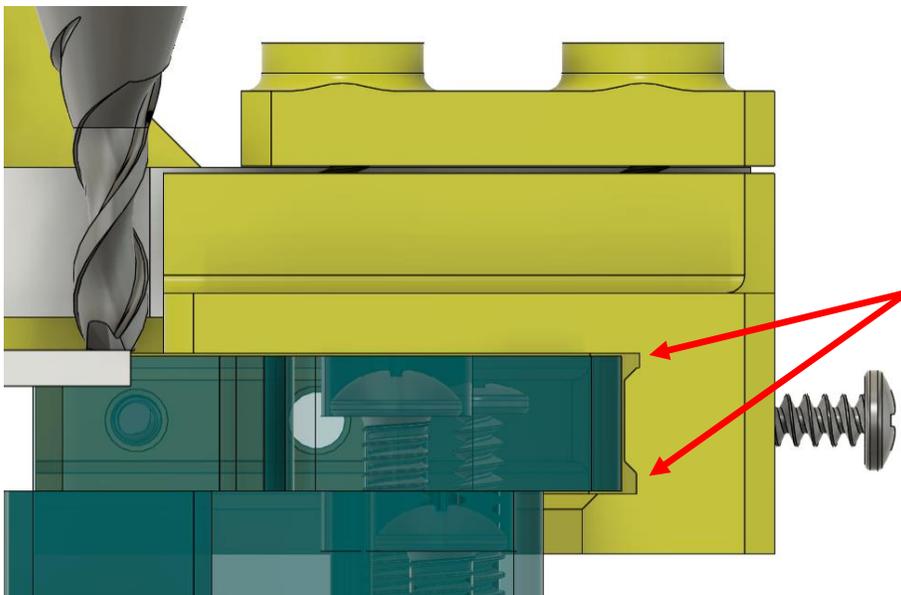
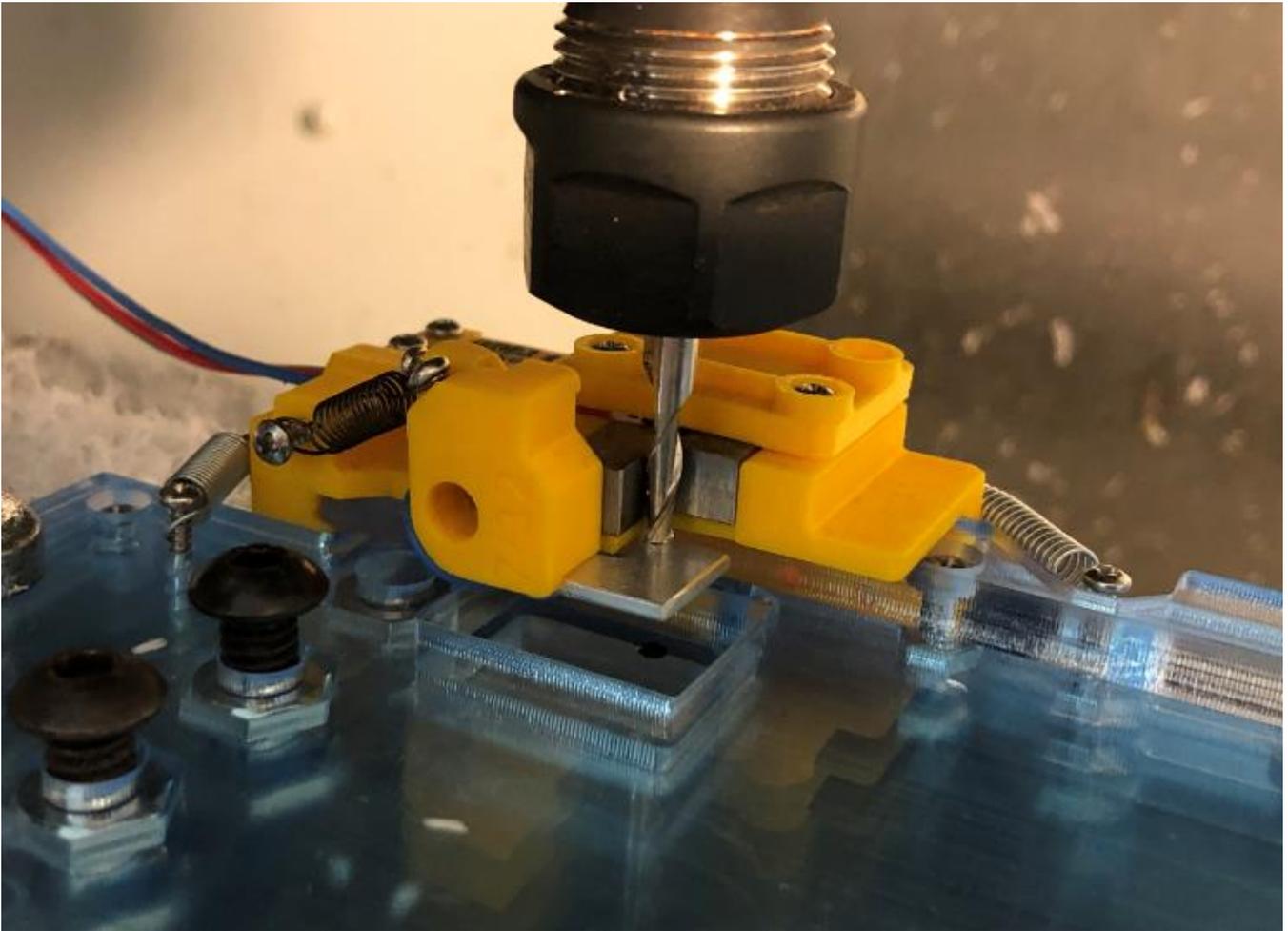
Perimeter holes are counterbored 0.250" Dia. and 0.110" deep.

Exploded view of Home Finder



Home Finder

The Home Finder is attached to the fixture and has three contact points (one for each axis) that report when touched by the tool. The spring mounting of the Home Finder and the pivoting of the Z-Axis contact allow for over-travel without damage.



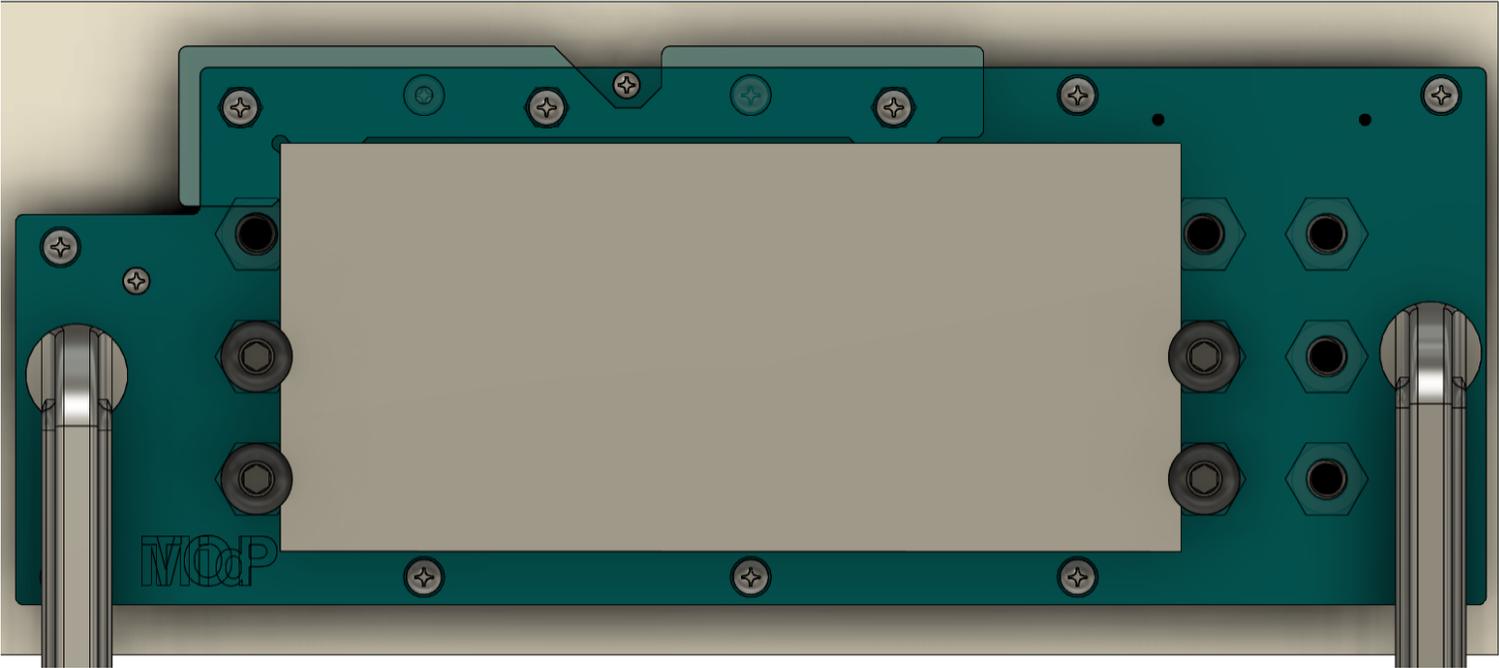
Note the inset regions where the slot in the Home Finder contacts the edge of the acrylic. This ensures there is no unintentional fillets that would prevent the surfaces from being in full contact.

Work Fixturing

Here is work secured in the fixture with hex drive button head screws after milling is complete.

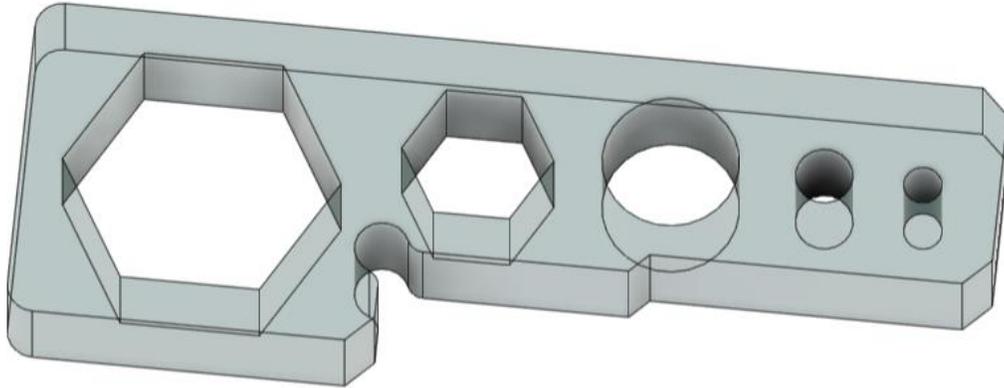


This shows the work secured against the rear guide.



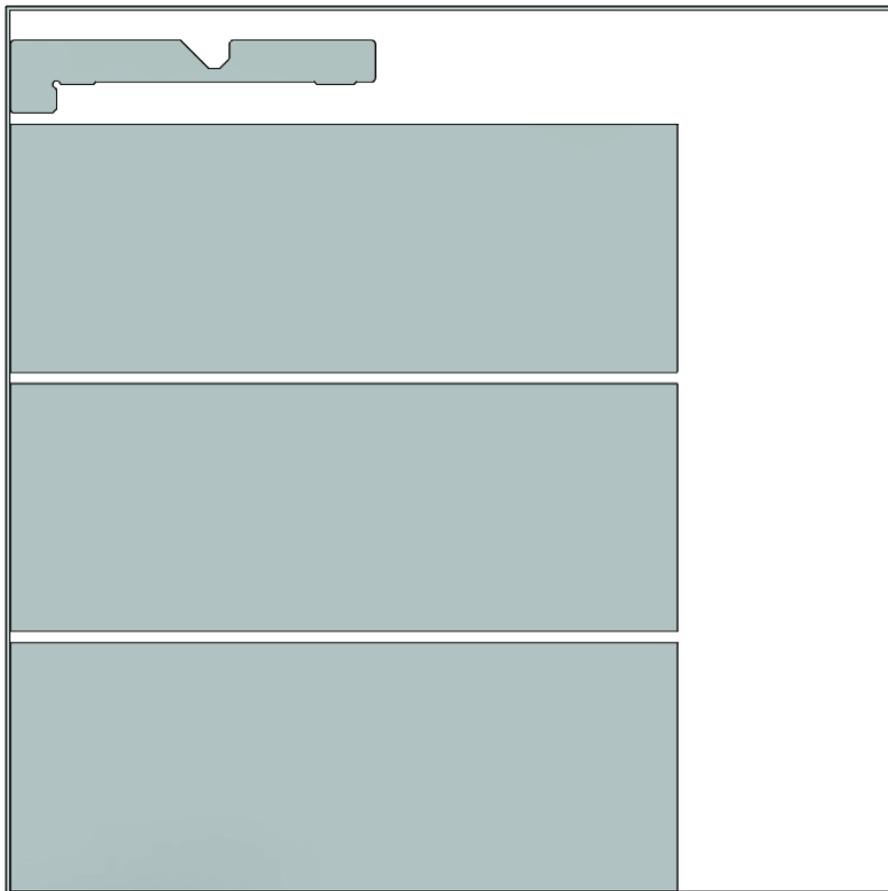
Test Part

This part was designed to be laser cut to verify dimensions. The part contains any holes used in the design. After laser cutting this part, dimensions were adjusted to account for slightly oversized holes.



Layout Part

A this rectangular frame was created to represent a 12"x12" piece of acrylic, which is a common size sold. Design considerations included ensuring that all the acrylic parts could be cut from a single 12"x12" piece.



BOM (Bill Of Materials)

Line	Qty	Type	Description	Part Num	Price
1	13	screw	4-40 9/16"L PanHead 18-8SS	91772A111	\$4.64(100)
2	14	screw	#2 3/8"L SheetMetal Blunt RoundHead 18-8SS	92525A118	\$4.71(100)
3	4	screw	1/4-20 3/4L ButtonHead HexDrive BlackOxide	91255A540	11.83(50)
4	9	nut	1/4-20 7/16W 7/32H Steel ZincPlated	90473A029	4.58(100)
5	10	nut	4-40 3/16"W NarrowProfile Steel ZincPlated	90760A005	\$2.83(100)
6	3	nut	4-40 1/4"W Steel ZincPlated	90480A005	\$1.10(100)
7	2	key	Machine 1/4"x1/4" -0.002"/+0.000" 1"L 1018-1045 Steel	98870A205	\$4.30(10)
8	1	plate	Acrylic 0.25" Laser Cut TopPlate		
9	1	plate	Acrylic 0.25" Laser Cut MidPlate		
10	1	plate	Acrylic 0.25" Laser Cut BotPlate		
11	1	plate	Acrylic 0.25" Laser Cut EdgeGuide		
12	1	printPLA	HomeFinder-Base		
13	1	printPLA	HomeFinder-ZMount		
14	1	printPLA	HomeFinder-Top		
15	1	printPLA	HomeFinder-LabelMount		
16	1	printPLA	LabelMount		