

19" Rack Mount Board

Lafe Spietz

NIST

August 2024

Technical drawing of a rectangular plate with the following dimensions and specifications:

- Overall Dimensions:** 19.000 (width) x 4.000 (height).
- Top Edge:**
 - Left corner hole: 7/32" (0.219") drill size for 10-32 screws.
 - Right corner hole: 7/32" (0.219") drill size for 10-32 screws.
- Internal Features:**
 - Two vertical dashed centerlines.
 - Two horizontal dashed centerlines.
 - Four small holes (1/16" for wood screws) located at the intersections of the dashed centerlines.
 - Four larger holes (7/32" (0.219") drill size for 10-32 screws) located at the intersections of the dashed centerlines and the outer edges.
 - Four 1/8" 4-40 clearance holes located at the intersections of the dashed centerlines and the outer edges.
 - A central rectangular slot with a width of 1.000 and a height of 1.000.
 - A small rectangular slot on the right side with a width of 1.025 and a height of 1.000.
- Dimensions and Tolerances:**
 - Top edge: .500 (from left corner to first hole), 1.000 (between first and second holes), 1.000 (between second and third holes), 1.000 (between third and fourth holes), .500 (from fourth hole to right corner).
 - Bottom edge: .344 (from left corner to first hole), 4.250 (from left corner to second hole), 4.750 (from second hole to third hole), 4.466 (from third hole to right corner).
 - Right side: .187 (from top edge to bottom edge of central slot), 1.025 (from central slot to right edge).

→ | | ← .344

Slightly more than 2U Blank Rack Panel




Drill bits to use


- 1/16" bit: pilot holes and holes for wood screws.
- 1/8" bit: through holes for 4-40 screws
- 7/32" for 10-32 thumb screw clearance holes
- 5/32" to mill out slot for 4 wire header cable




4"x24"x0.5" White Oak Boards





Project Ready Wood | Plywood | Lumber | 
Turning Blanks | Pen Blanks | Handpicked

You are here: [Project Ready Wood](#) >> [White Oak](#) >> [1/2" White Oak 4" wide 24" long](#)



1/2" White Oak 4" wide 24" long

\$5.40/ea.

Add to Cart

1

White Oak is naturally rot-resistant and strong. These qualities make it a good choice for outdoor use. White Oak has traditionally been used to make railroad ties, fence posts, ships, and whiskey barrels. White Oak usually has a finer texture and more patterned grain than [Red Oak](#). See [Quarter Sawn White Oak](#) for a more stable option with straighter grain.

Project Ready These thin wood sheets are perfect for scroll sawing, laser cutting and engraving, thick veneers, and much more. Our Project Ready White Oak boards are kiln dried and surfaced and sanded to 150 grit on two sides.

Sizes are exact. | This is all solid White Oak hardwood, not plywood, and is not glued. | 100% satisfaction guaranteed.

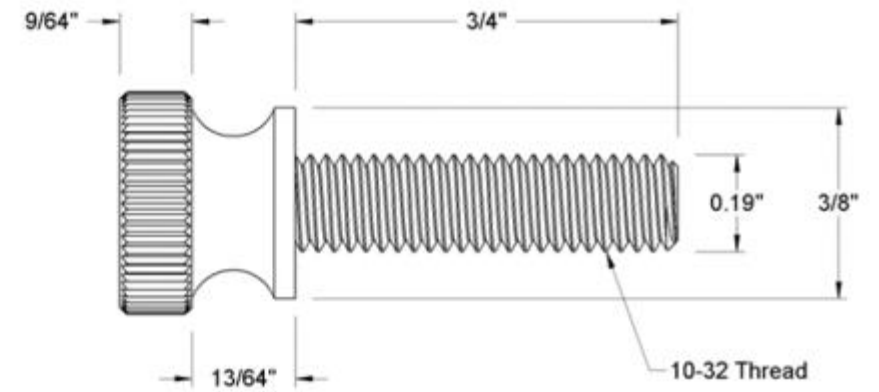
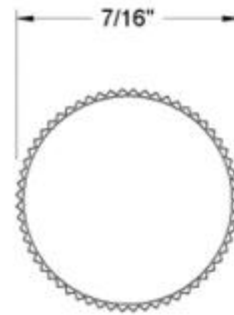
Item Specifications

Thickness (height)	Width	Length	Weight
0.5 inches	4 inches	24 inches	1.304 lbs.

Surfacing: Sanded to 150 grit on two sides.

<https://ocoochhardwoods.com/detail/?i=124wo>

Knurled Brass Thumb Screws to Mount in Panel



<https://www.mcmaster.com/92421A645/>

Rack Mount Nuts



Quality Products. Service Excellence.

10-32 Rack Rail Clip Nuts 1421N Series



Clip Nuts (Also known as Speed nuts or Timmerman nuts) are a great alternative to **Cage Nuts** and have many more uses. Whether your rack has non-threaded round holes or square, clip nuts are an easier solution to speed up your installation.

Features

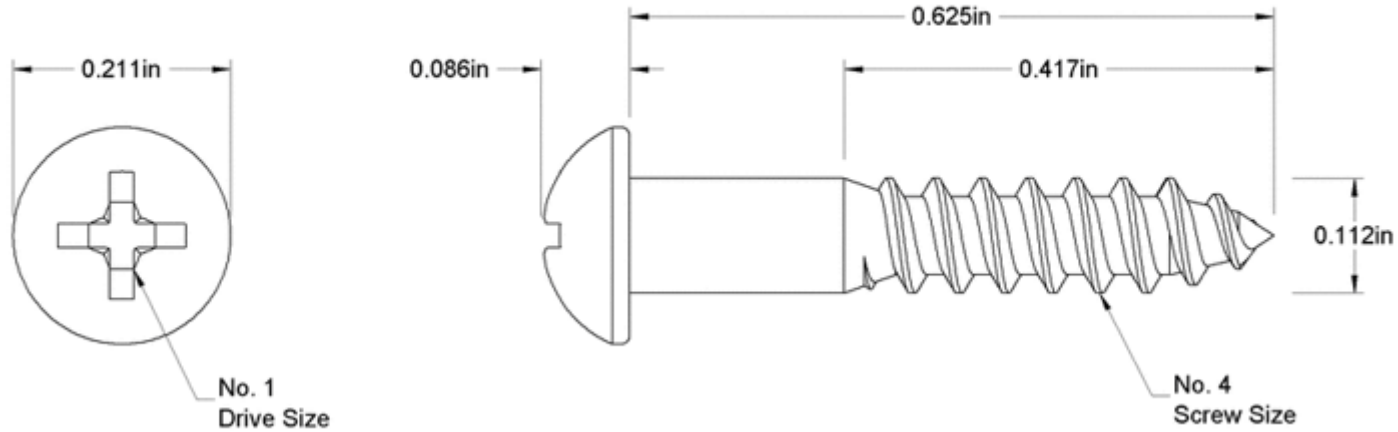
- 10-32 clip nuts for non-threaded rack rails.
- Heat-treated by means of austempering.
- Available in black or plated steel finish.
- Ships in a clam shell or resealable jar, depending on quantity.

Specifications

- Constructed of SAE 1050-1065 spring steel.
- Recommended torque spec 31.4 +/- 20% inch-lbs
- For use with 0.069-0.079" panel thickness.
- Hardness: HRC 38-42.
- Maximum load rating will vary depending on rail mounting and cabinet load rating.
- 1421NP are zinc plated CR3.

<https://www.mouser.com/ProductDetail/Hammond-Manufacturing/1421NP25?qs=yc9RBI4tIALvGirsWAVfbg%3D%3D>

Wood screws



<https://www.mcmaster.com/98685A540/>



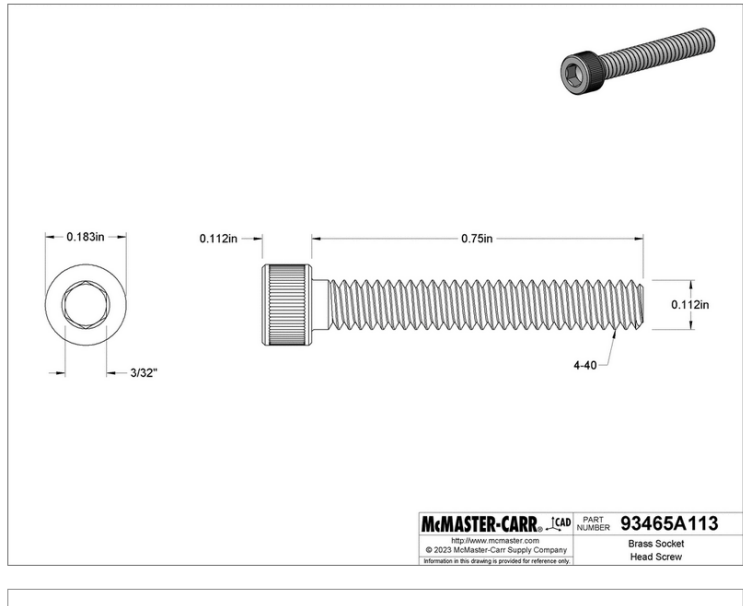
4-40 Brass screws and washers

McMASTER-CARR.

Search

Brass Socket Head Screw

4-40 Thread Size, 3/4" Long



\$11.99 per pack of 10
Delivers Monday
93465A113

☐ Packs of 10

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3-D Solidworks Download

Learn more about our [Solidworks Add-in](#)

Head Type	Socket
Socket Head Profile	Standard
Drive Style	Hex
System of Measurement	Inch
Thread Direction	Right Hand
Thread Size	4-40
Screw Size Decimal	0.112"
Equivalent	
Thread Type	UNC
Thread Fit	Class 3A
Length	3/4"
Threading	Fully Threaded
Thread Spacing	Coarse
Head	
Diameter	0.183"
Height	0.112"
Drive Size	3/32"
Material	Brass
Tensile Strength	50,000 psi
Hardness	Rockwell B55
RoHS	Not Compliant
REACH	REACH (EC 1907/2006) (01/23/2024, 240 SVHC) Compliant
DFARS	Specialty Metals COTS-Exempt
Country of Origin	United States
USMCA Qualifying	No
Schedule B	741533.8550
ECCN	EAR99

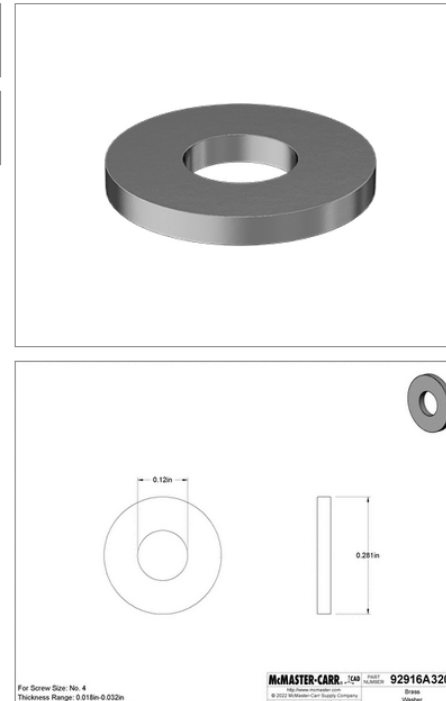
McMASTER-CARR. PART NUMBER **93465A113**
http://www.mcmaster.com
© 2023 McMaster-Carr Supply Company
Brass Socket Head Screw
Information in this drawing is provided for reference only.

McMASTER-CARR.

Search

Brass Washer

for Number 4 Screw Size, 0.12" ID, 0.281" OD



\$4.86 per pack of 100
Delivers Monday
92916A320

☐ Packs of 100

ADD TO ORDER

3-D Solidworks Download

Learn more about our [Solidworks Add-in](#)

Material	Brass
For Screw Size	No. 4
ID	0.120"
OD	0.281"
Thickness	0.018" to 0.032"
Washer Type	Flat
System of Measurement	inch
Hardness	Rockwell B80
RoHS	RoHS 3 (2015/863/EU) Compliant
REACH	REACH (EC 1907/2006) (08/14/2023, 235 SVHC) Compliant
DFARS	Specialty Metals COTS-Exempt
Country of Origin	United States
USMCA Qualifying	No
Schedule B	741521.0000
ECCN	EAR99

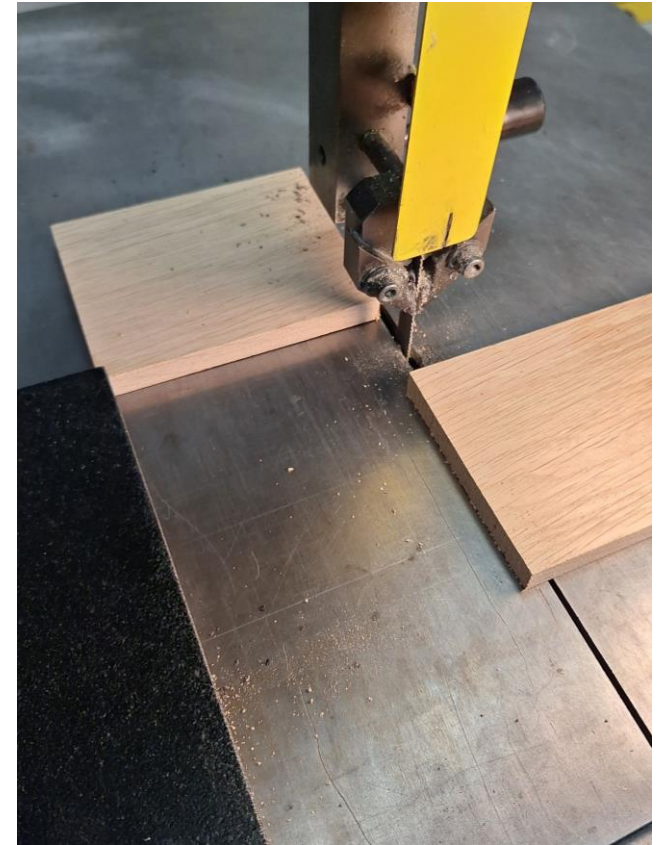
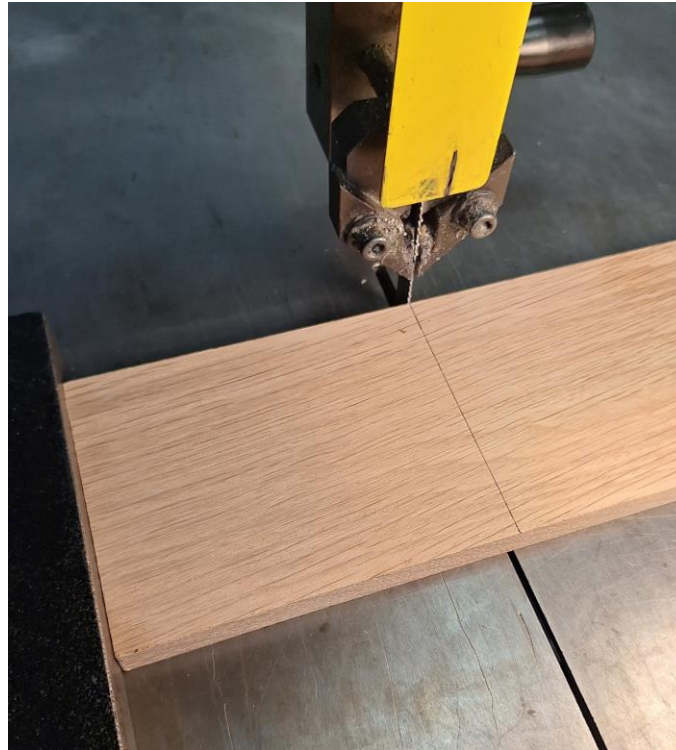
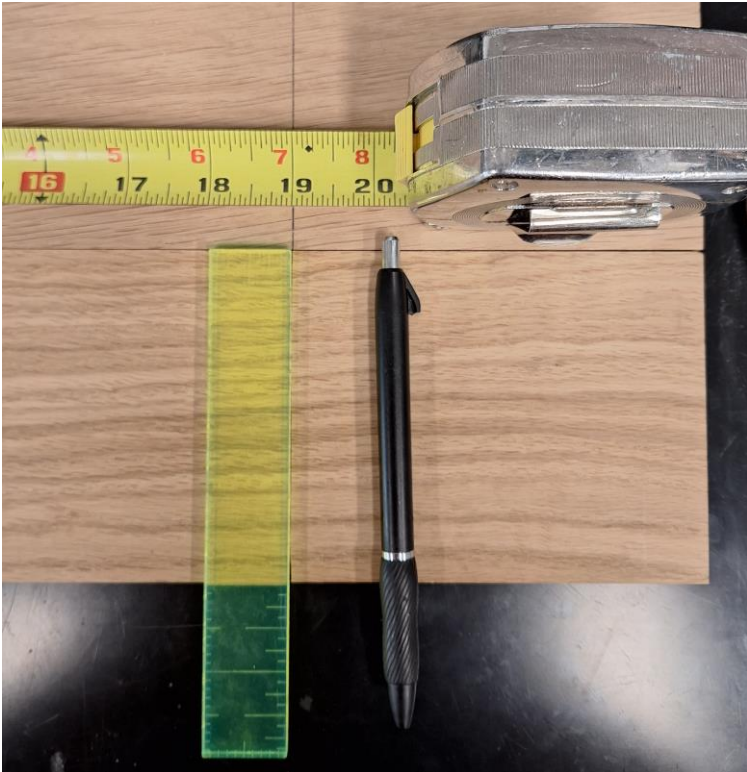
Use these washers to evenly distribute the load under bolt or screw heads and nuts when fastening. They can also act as spacers.

Copper, brass, and silicon bronze washers are corrosion resistant in wet environments, nonmagnetic, and electrically conductive.

<https://www.mcmaster.com/93465A113/>

<https://www.mcmaster.com/92916A320/>

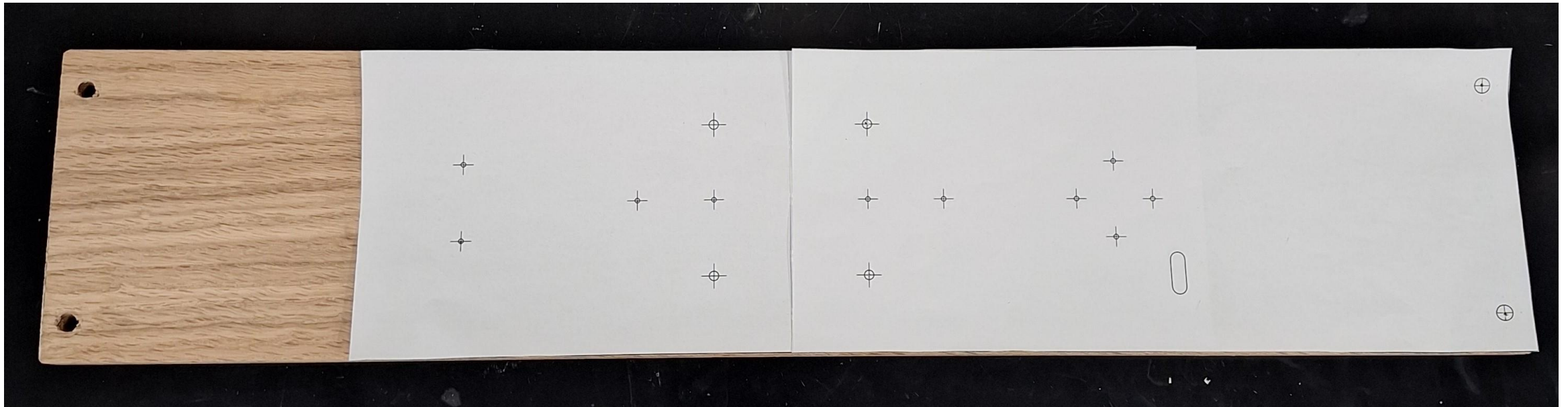
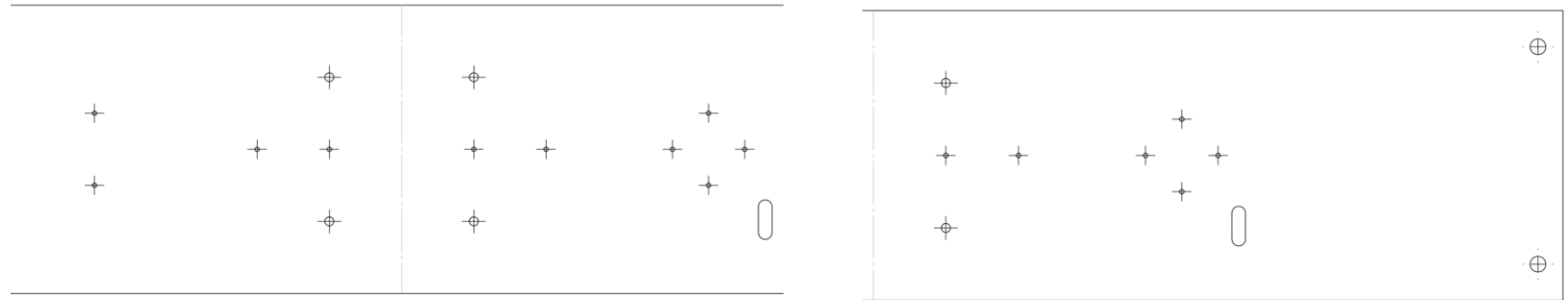
Cut board off at 19 inches



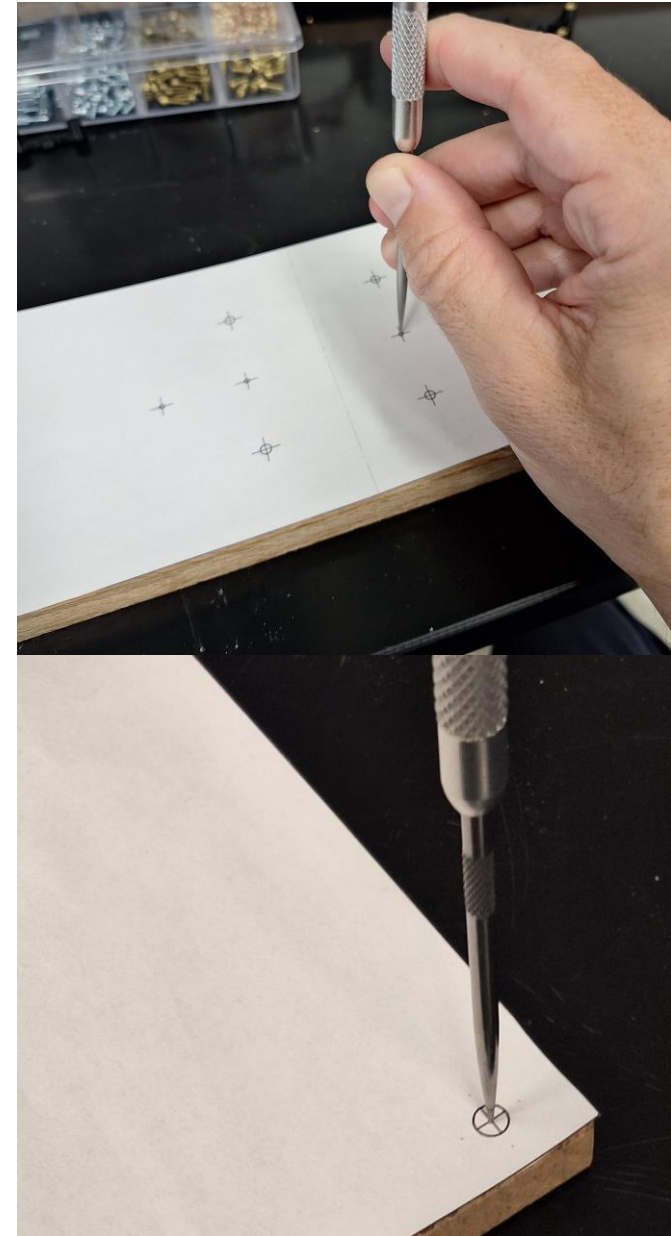
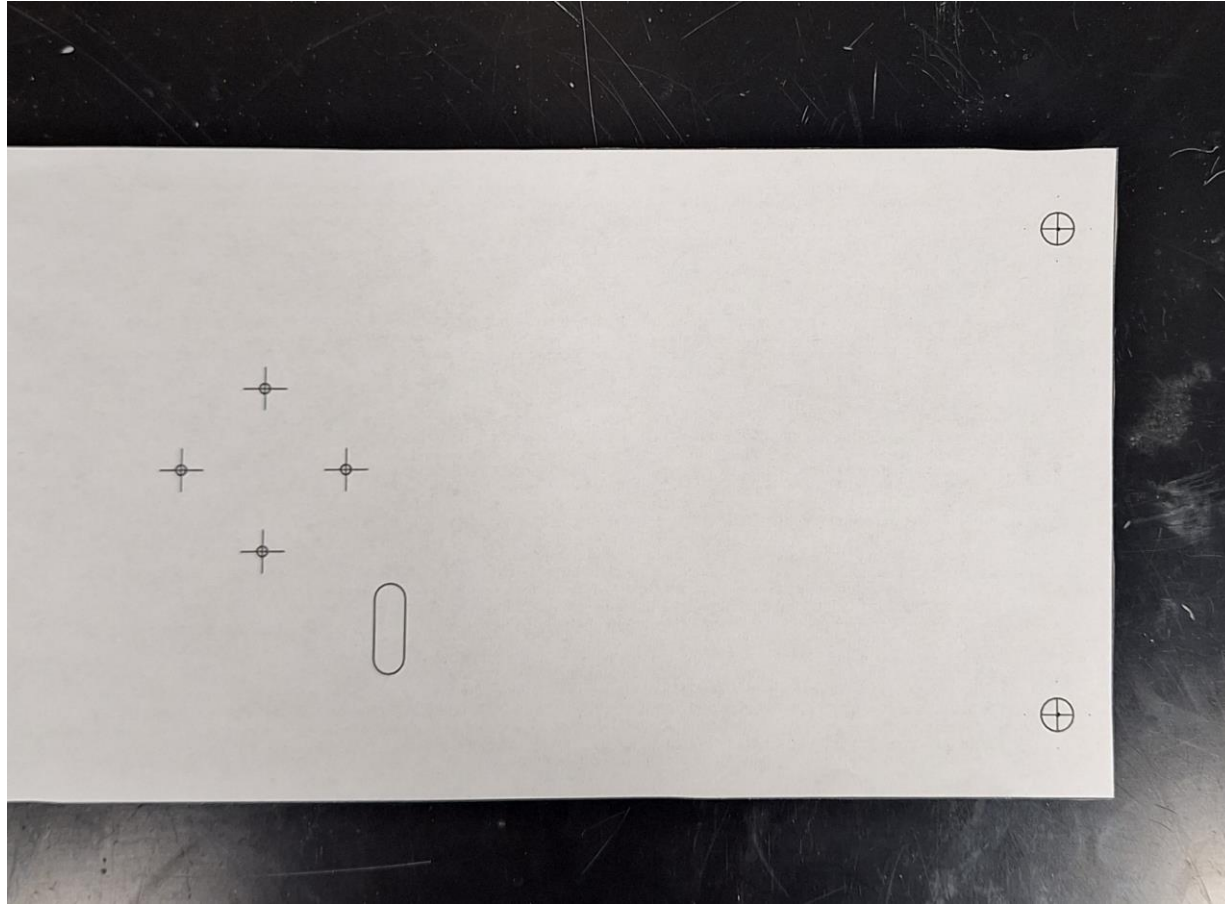
Sand or file edges



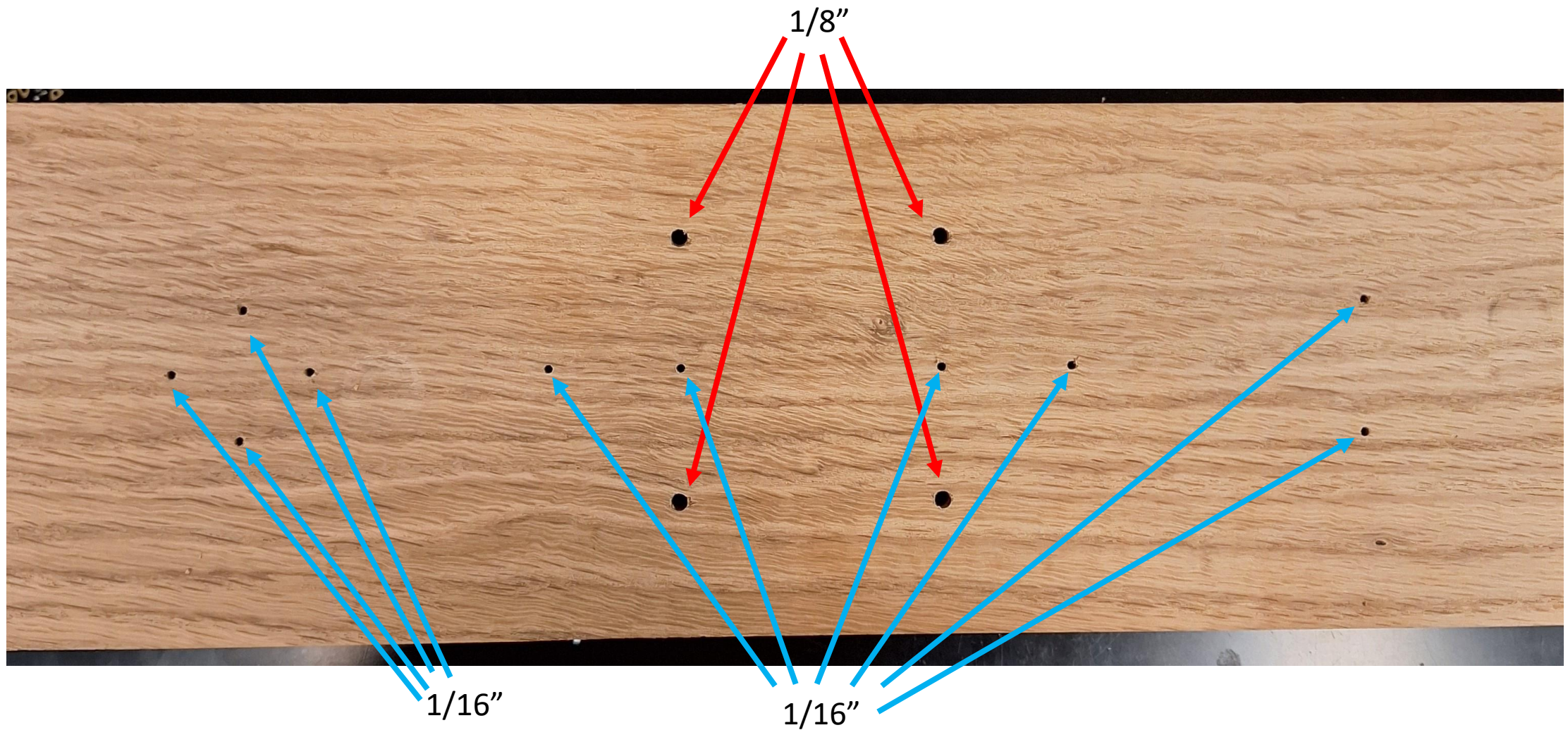
Print Templates And use for Hole Punches



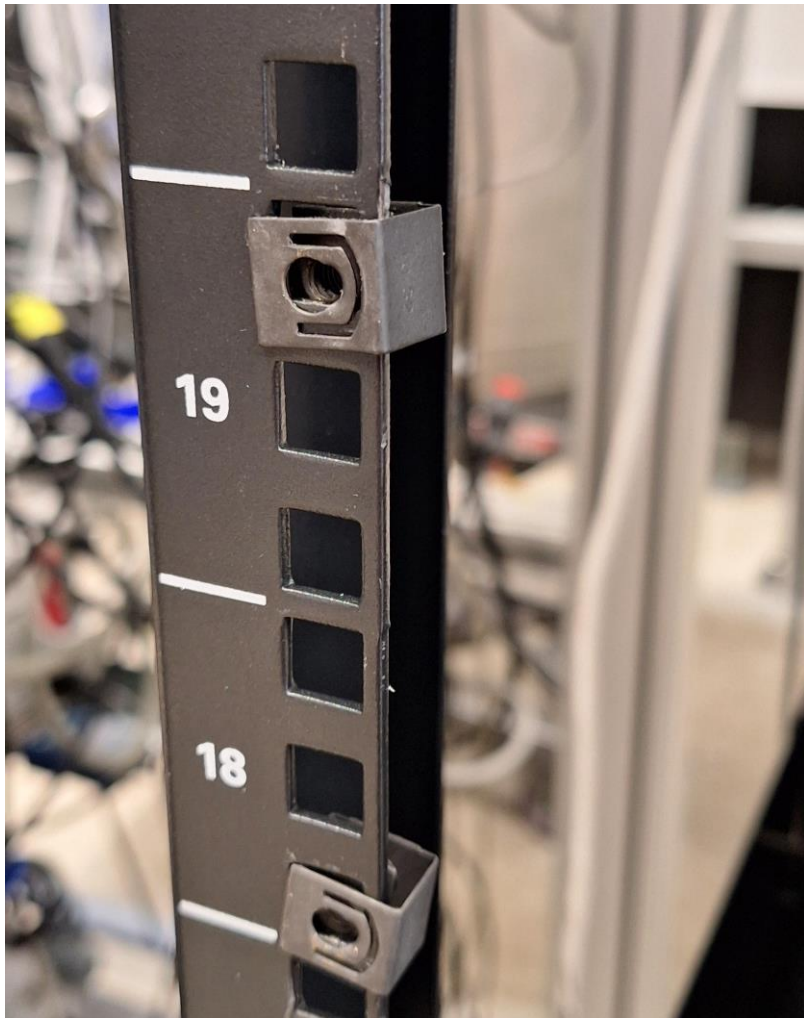
Punch hole locations with sharp object



Drill pattern in center of board



Rack, nut and thumb screw detail





Hand-drilled cutout for 4 pin connector



Full assembly with Bud Box and 3d printed parts

