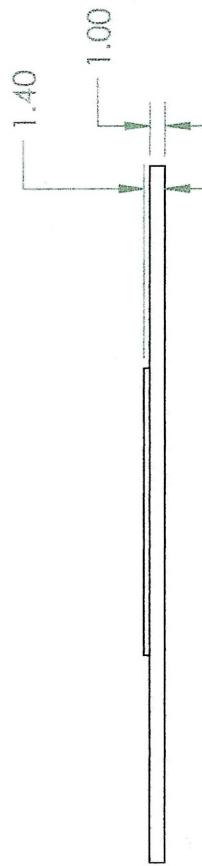


Notes: The flanges and pulley tooth profiles were 3D printed as two separate parts to reduce overhang errors during fabrication. The flanges and tooth profiles were mated using cyanoacrylate adhesive before they were press fit onto their respective axle.

Scale 2:1



Part Name: HTD 28T
Flange

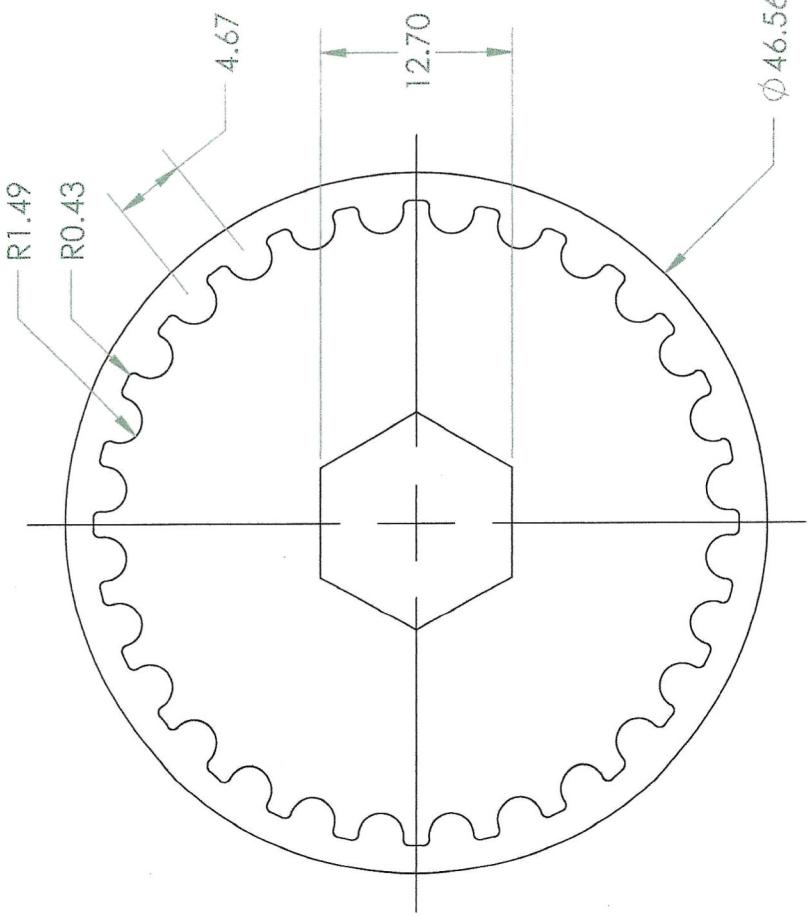
Date: 3/13/2025

Prepared By:
Maxx Ibarra

Prepared for:
ME 72 Vroombas

Rev 2 Units: mm
Tol: ± 0.125

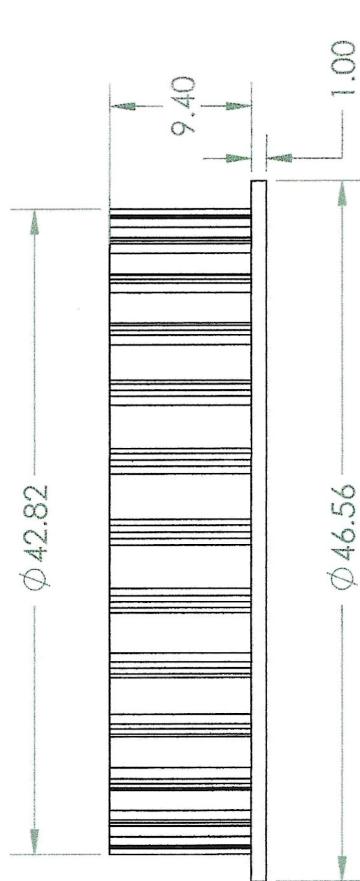
Material:
Markforged Onyx



Notes: The standardized HTD profile was used to create the tooth profile for 12, 18, 28, 30, and 36 tooth HTD pulleys. Pictured here is only the 28T pulley. Pulley diameters change between parts, but tooth geometry, pulley pitch, internal hex, and flange height are constant.

The completed part files were 3d printed on a Markforged 3D Printer using their Onyx material. The 12 tooth pulley was created using wire EDM on Aluminum stock instead.

Scale 2:1



Part Name: HTD 28T Pulley

Prepared By:
Maxx Ibarra

Rev 2 Units: mm
Tol: ±0.125

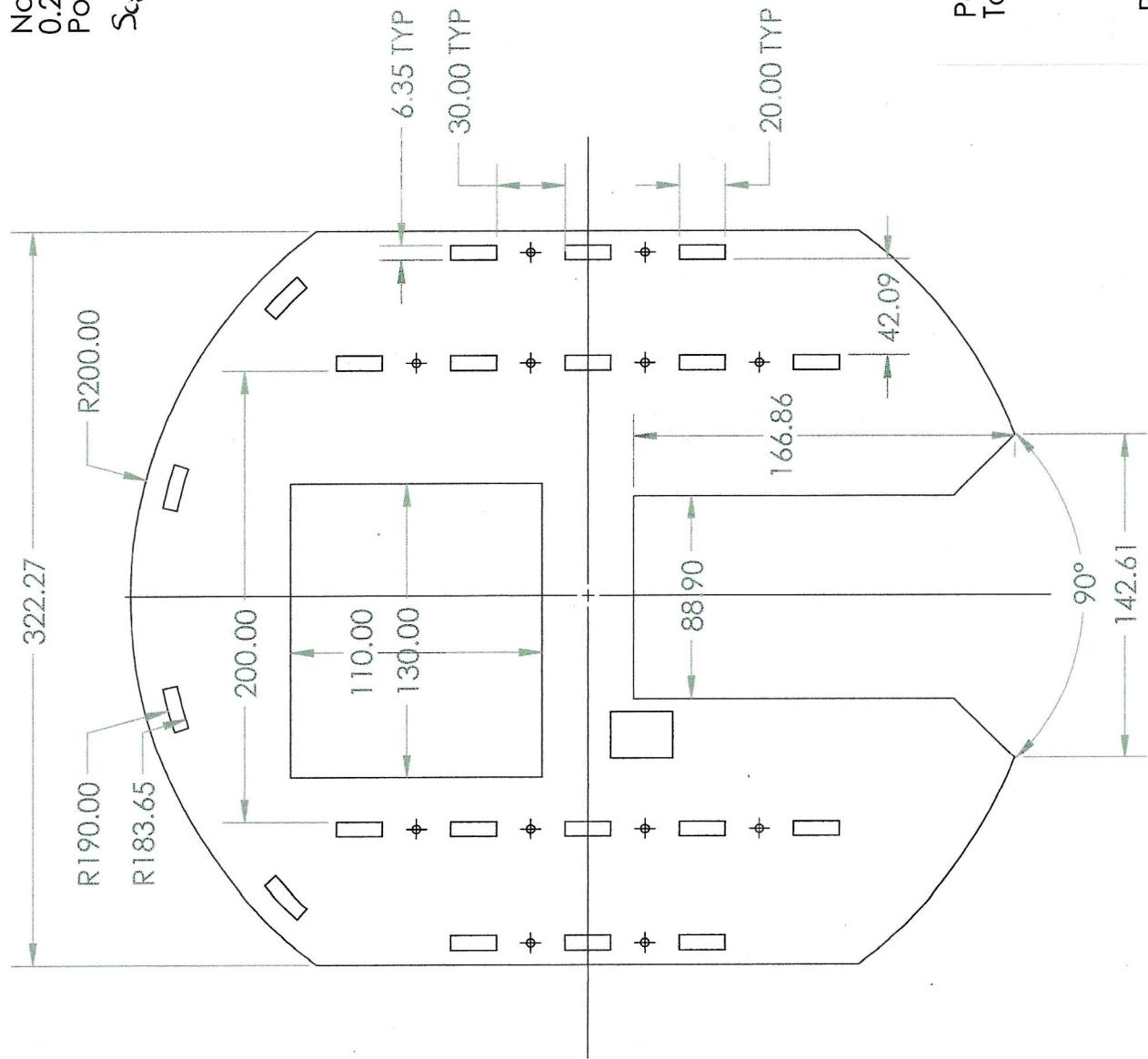
Date: 3/13/2025

Prepared for:
ME 72 Vroombas

Material:
Markforged Onyx

Notes: This part is cut on a waterjet from a
0.25" thick piece of High-Density
Polyethylene.

Scale 1:3



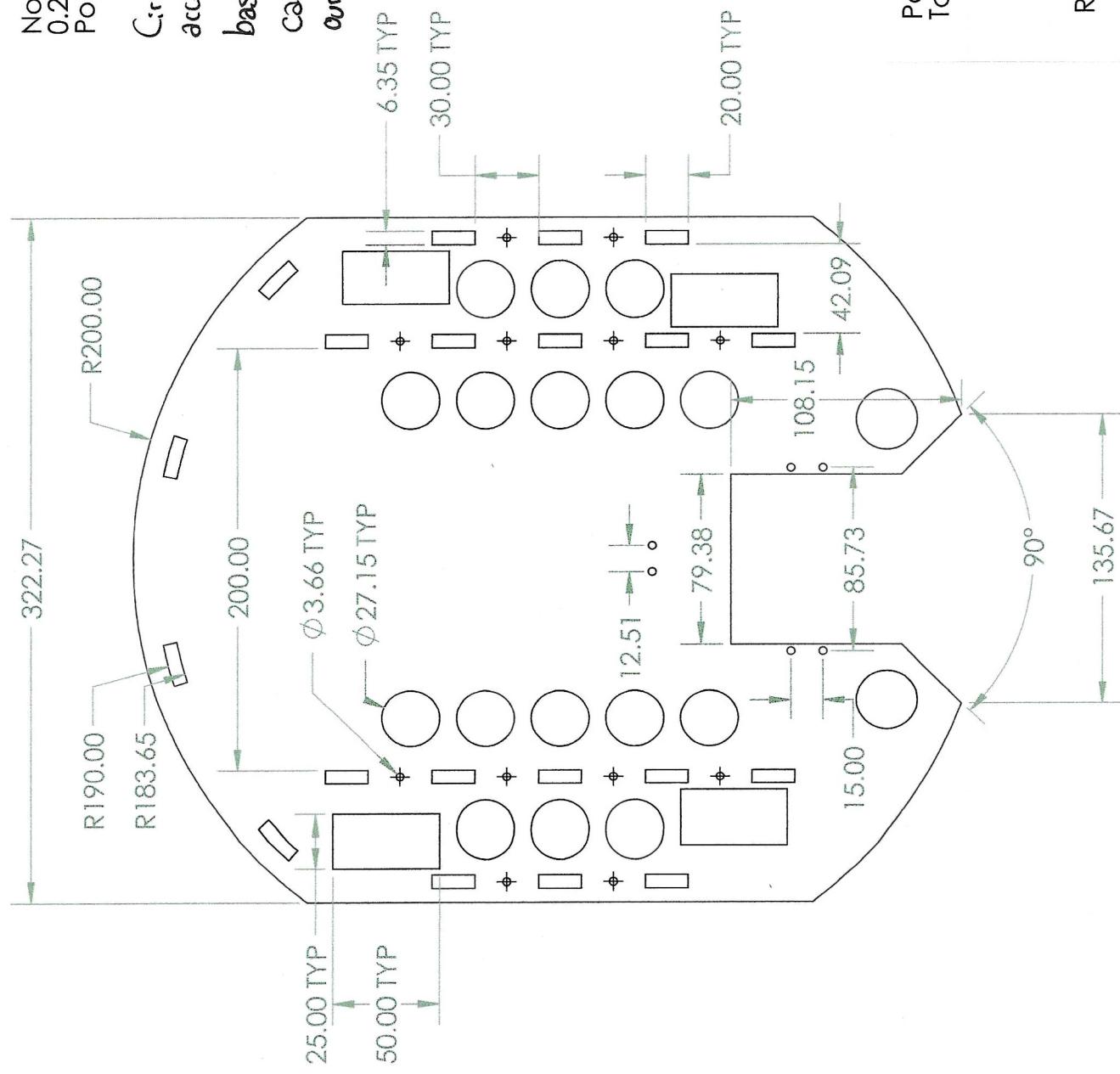
Notes: This part is cut on a waterjet from a 0.25" thick piece of High-Density Polyethylene.

YP

Circular holes in this plate $\phi 27.15$ accept Neodymium magnets press fit basis of Shaft H7 PC. This diameter calibrated to our particular magnets & our particular waterjet.

YP

Current hole placement not reflected by this drawing. Current view depicts updated hole placement to improve traction. The plate was also cut from $1/8"$ aluminum plate rather than HDPE. This change also caused a change in the jockey height on all transmission plates.

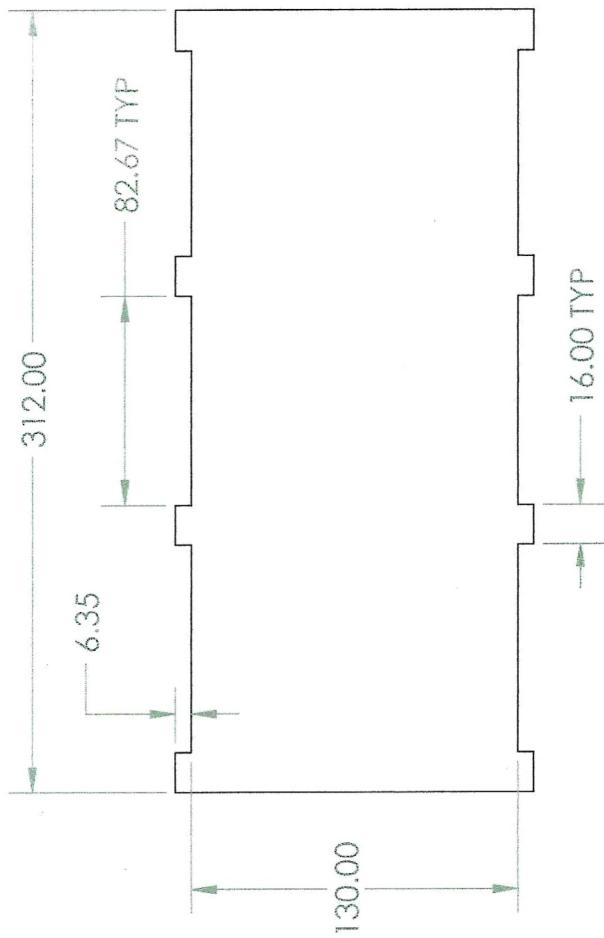


Part Name: Chassis
Top Plate

Date: 3/13/2025

Prepared By:
Maxx Ibarra
Prepared for:
ME72 Vroombas

Rev 3	Units: mm Tol: ± 0.125	Material: High Density PE
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Notes: This part is cut on a waterjet from a 0.25" thick piece of High-Density Polyethylene.

After cutting deburring, the piece is heat formed to the necessary curvature.

These dimensions may need filing or further editing to fit properly into the waterjet base and top plates. After two other attempts we believe these numbers are compatible with our design.

Scale 1:3

Part Name: Chassis
Rear Plate

Prepared By:
Maxx Ibarra

Rev 3 Units: mm
Tol: ± 0.125

Date: 3/13/2025

Prepared for:
ME72 Vroombas

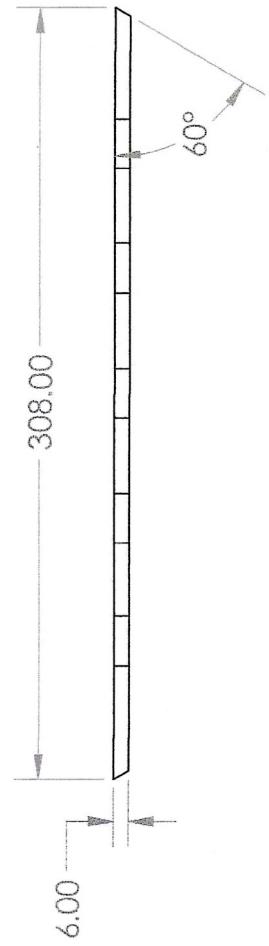
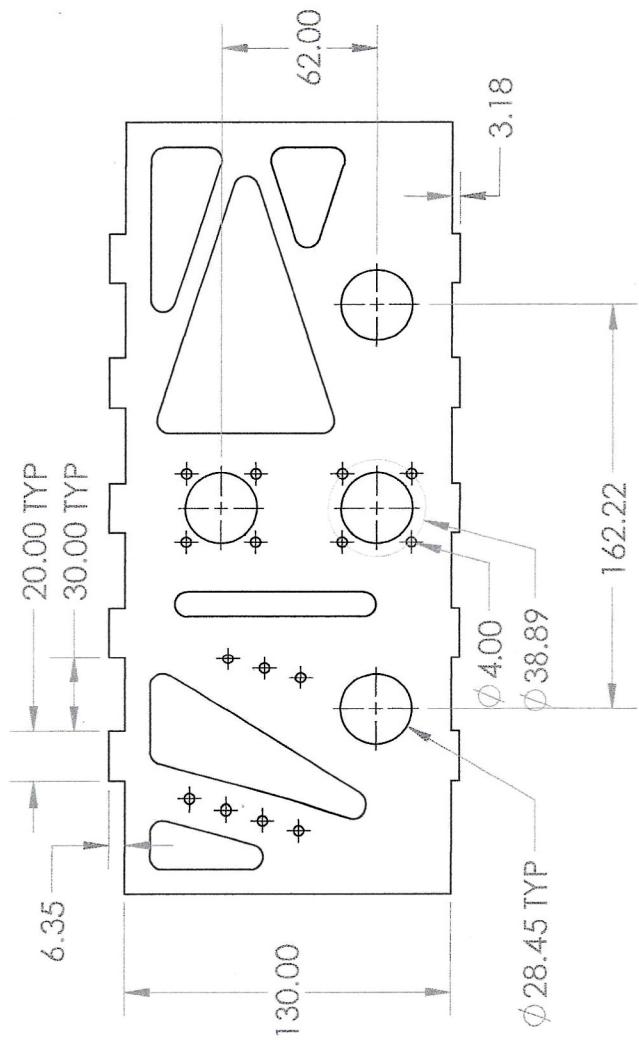
Material:
High Density PE

Notes:

The following 4 parts resemble each other quite closely & are most easily made on the waterjet. It is recommended each part is labelled with an "IR" after cutting to ensure proper assembly. Similarly, the other parts should be labelled OR, IL, or OL. Cut the main geometry on the water jet.

Final steps for machining are completed on a mill, simple tapping & threading of holes on the unchanneled 6mm faces, & also reaming the largest 4 holes for the 1.125" bearings.

Scale 1:3



Part Name: Inner Right
Transmission Plate

Prepared By:
Maxx Ibarra

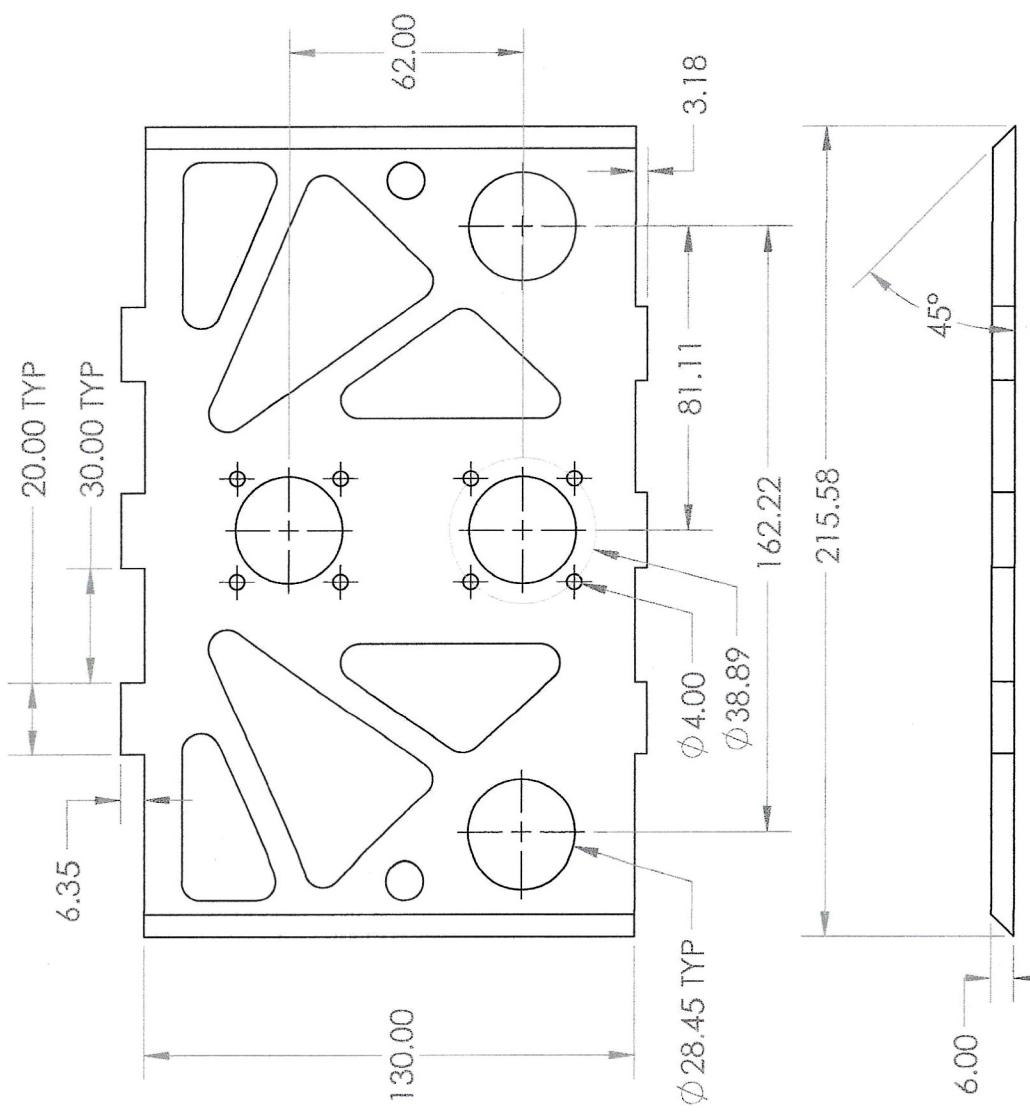
Date: 3/13/2025

Prepared for:
ME72 Vroombas

Rev 3 Units: mm
Tol: ± 0.125

Material:
6061-T6 Aluminum

Notes: Scale 1:2



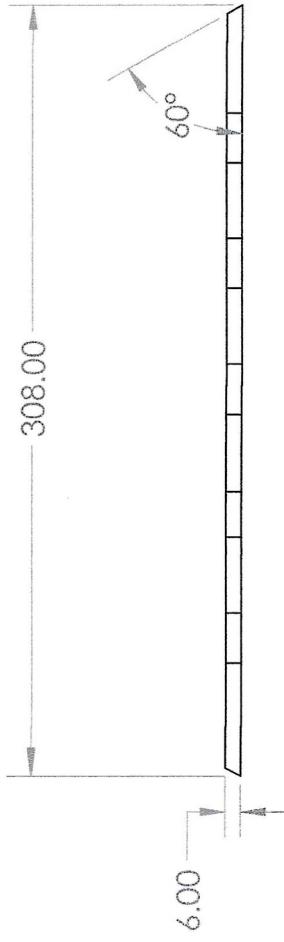
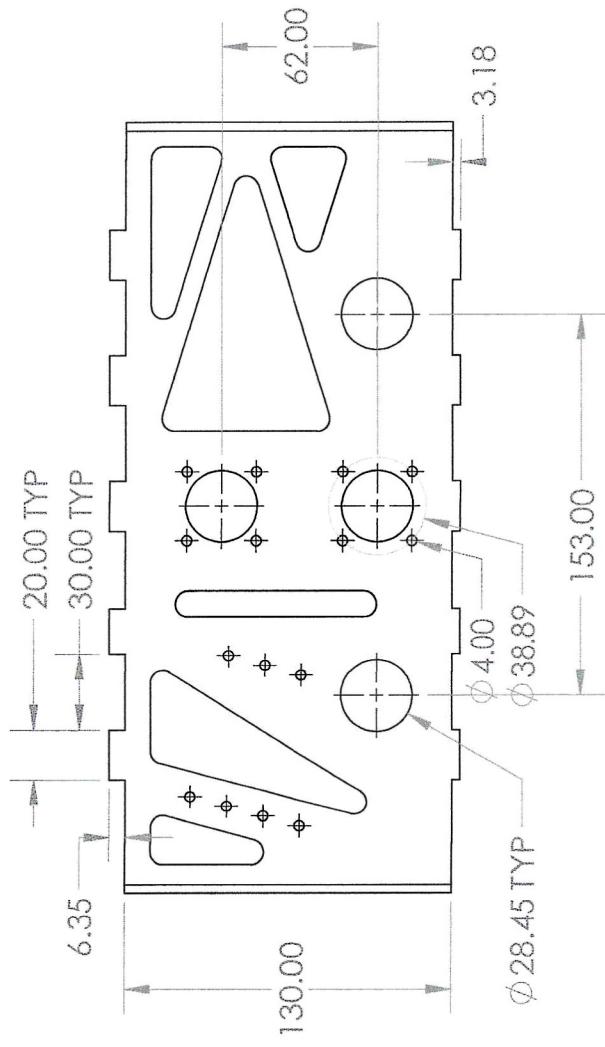
Part Name: Outer Right Transmission Plate	Date: 3/13/2025
Prepared By: Maxx Ibarra	Prepared for: ME72 Vroombas
Rev 3	Units: mm Tol: ± 0.125

Material:
6061-T6 Aluminum

Further Notes:

The geometry on the left side of this drawing of Inner Right plate is unused in this version of the drawing/assembly. It was previously intended to mount the shooter but is no longer used. Recommended: Change geometry to minor right side for weight reduction's sake.

Scale 1:3



Part Name: Inner Left
Transmission Plate

Date: 3/13/2025

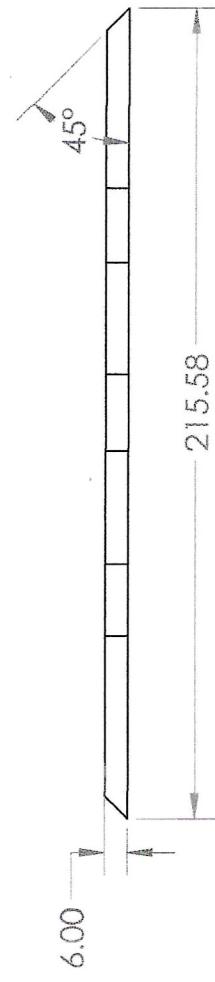
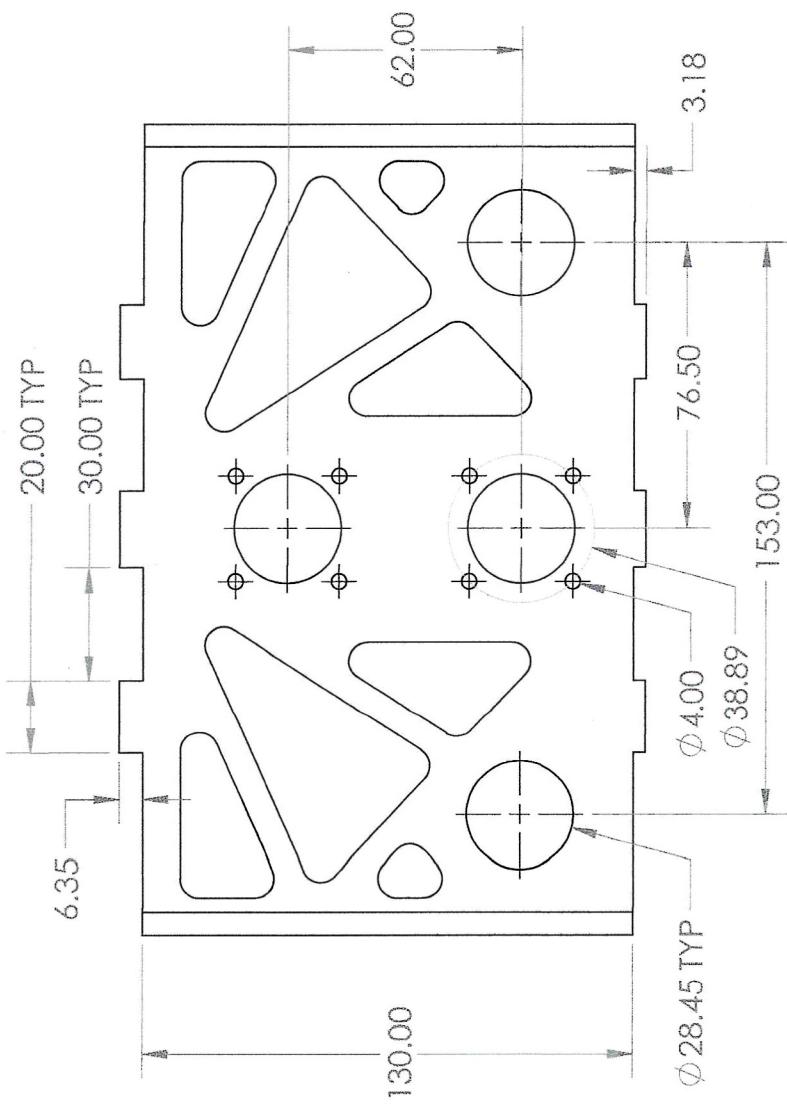
Prepared By:
Maxx Ibarra

Prepared for:
ME72 Vroombas

Rev 3 Units: mm
Tol: ± 0.125

Material:
6061-T6 Aluminum

Notes: Scale 1:2



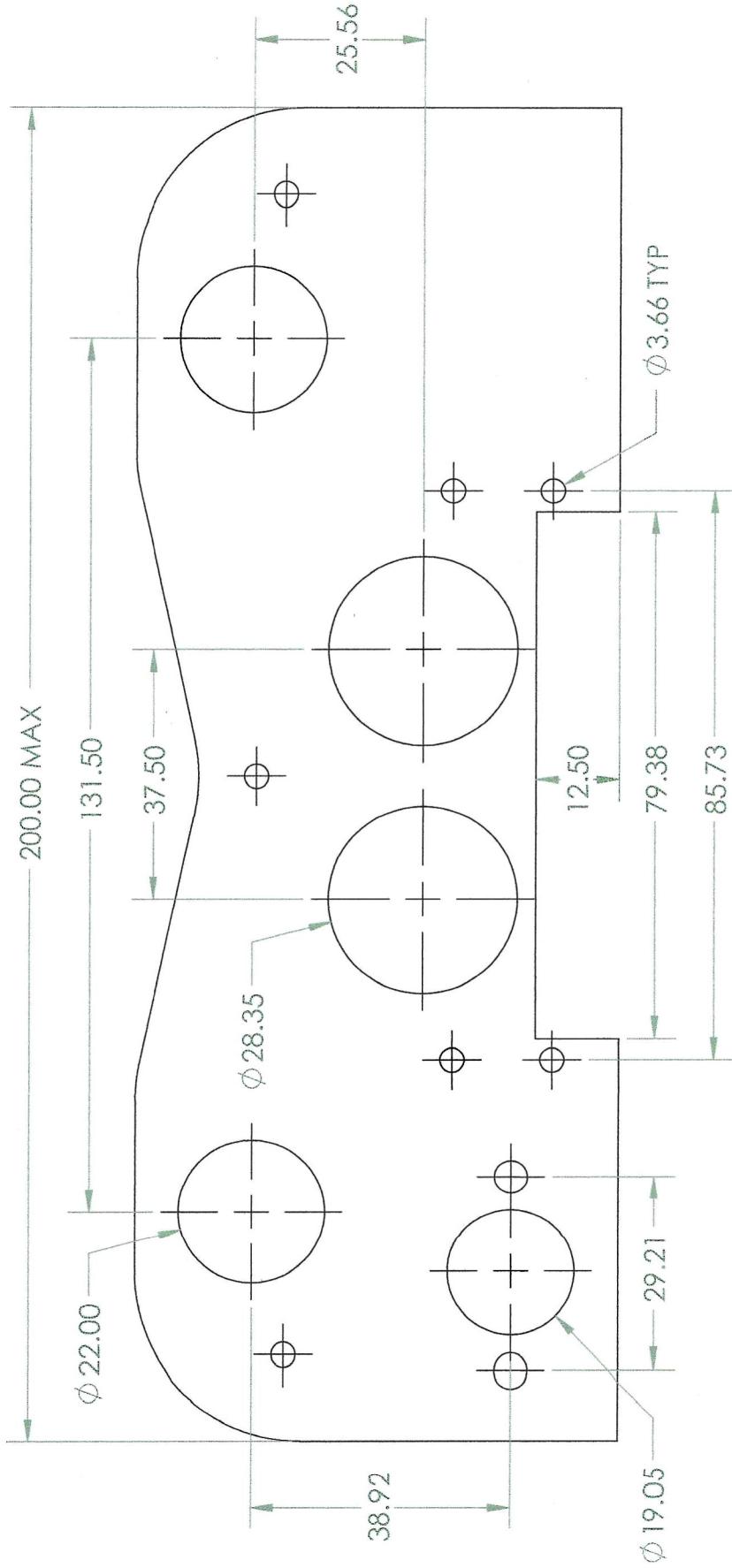
Part Name: Outer Left
Transmission Plate

Date: 3/13/2025

Prepared By:
Maxx Ibarra

Prepared for:
ME72 Vroombas

Rev 3	Units: mm Tol: ± 0.125	Material: 6061-T6 Aluminum
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Notes: Nearly all of the geometry for this part is created on the waterjet. The one exception to this are the reamed bearing holes, OD 28.35 in this drawing. Holes are reamed to 1.125" for our bearings. All other holes in this part are clearance fits to accommodate screw connections.

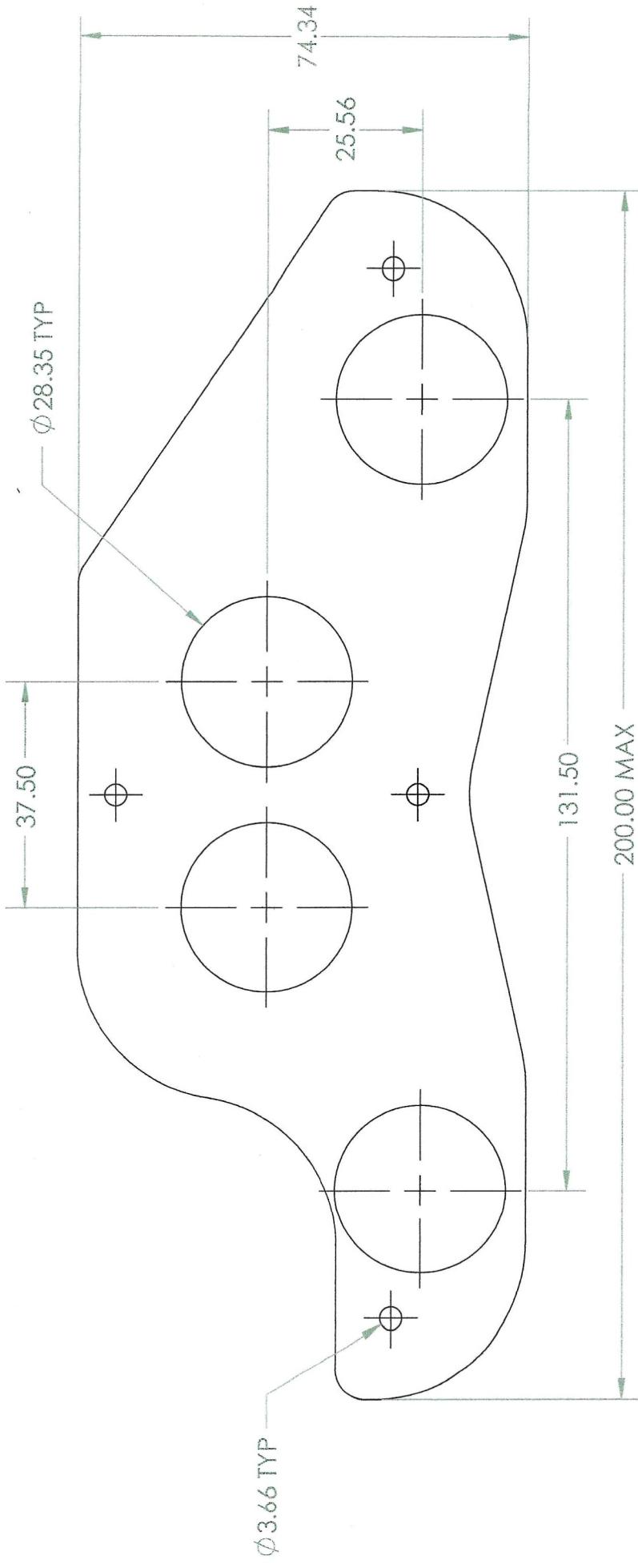
Scale 1:1

Prepared By:
Maxx Ibarra

Prepared for:
ME72 Vroombas

Rev 2	Units: mm Tol: ± 0.125	Date: 3/13/2025
		Part Name: Shooter Transmission Plate 1

Material:
6061-T6 Aluminum



Notes: Nearly all of the geometry for this part is created on the waterjet. The one exception to this are the reamed bearing holes, OD 28.35 in this drawing. Holes are reamed to 1.125" for our bearings. All other holes in this part are clearance fits to accommodate screw connections.

Scale 1:1

Part Name: Shooter
Transmission Plate 2

Date: 3/13/2025

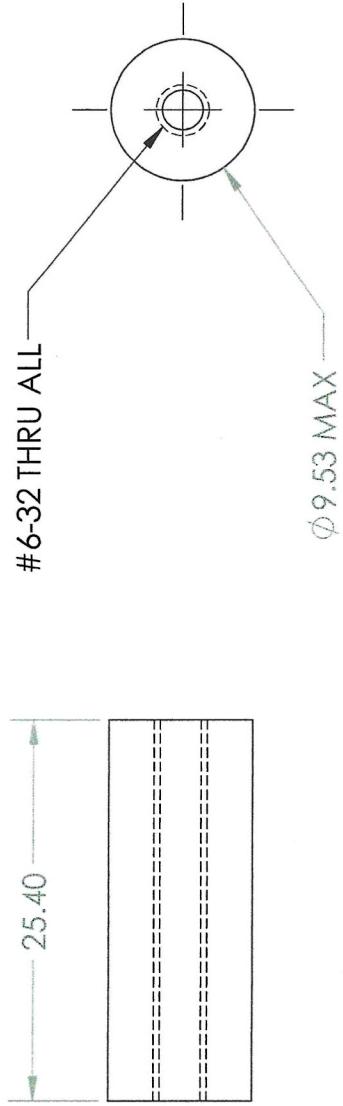
Prepared By:
Maxx Ibarra

Rev 2

Units: mm
Tol: ± 0.125

Prepared for:
ME72 Vroombas

Material:
6061-T6 Aluminum



Note: These custom standoffs were made to space shooter transmission plates 1 and 2 precisely 1 inch apart from each other to accomodate the thickness of our power transmission components. They were made with 3/8" aluminum round stock, but they could be as small as 1/4" in diameter

Scale 2:1

Part Name: Shooter
Transmission Spacer
Date: 3/13/2025

Prepared By:
Maxx Ibarra

Rev 2 Units: mm
Tol: ± 0.125

Prepared for:
ME72 Vroombas

Material:
6061-T6 Aluminum