

Project Overview

Team Ignite developed an advanced ember generator designed to simulate ember production under controlled airflow conditions. The system burns fuel within an ignition chamber and uses a forced airflow system to transport embers at adjustable speeds. This enables realistic wildfire exposure testing for structures and vegetation in Wildland-Urban Interface (WUI) environments. The design emphasizes portability, repeatability, and safety for laboratory and field experiments

Team Ignite



Ronin Toy : Manufacturing Lead



Krystal Morera : Team Lead



Tyson Chavez : Design Lead

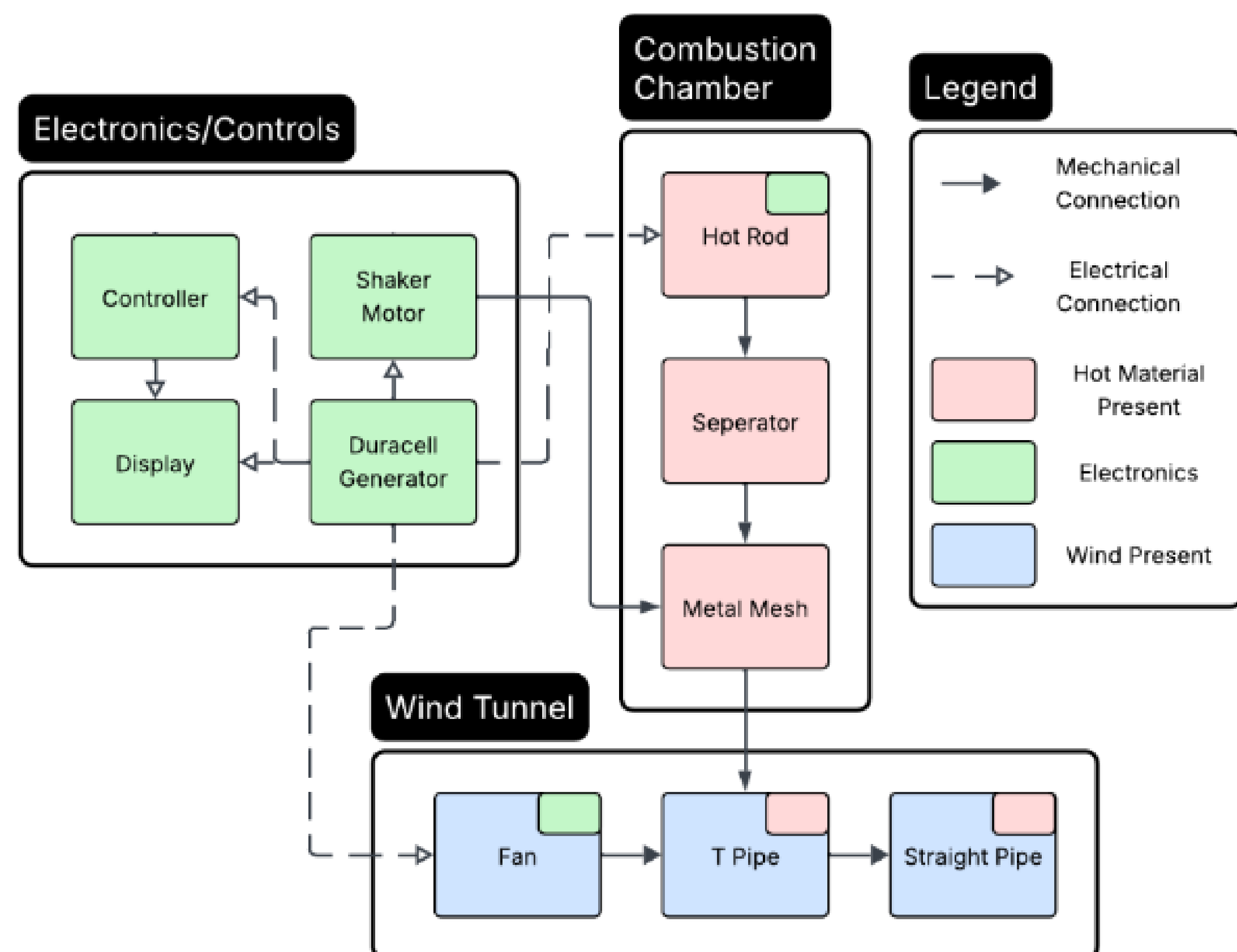


Mike Khuu :
Electrical Lead

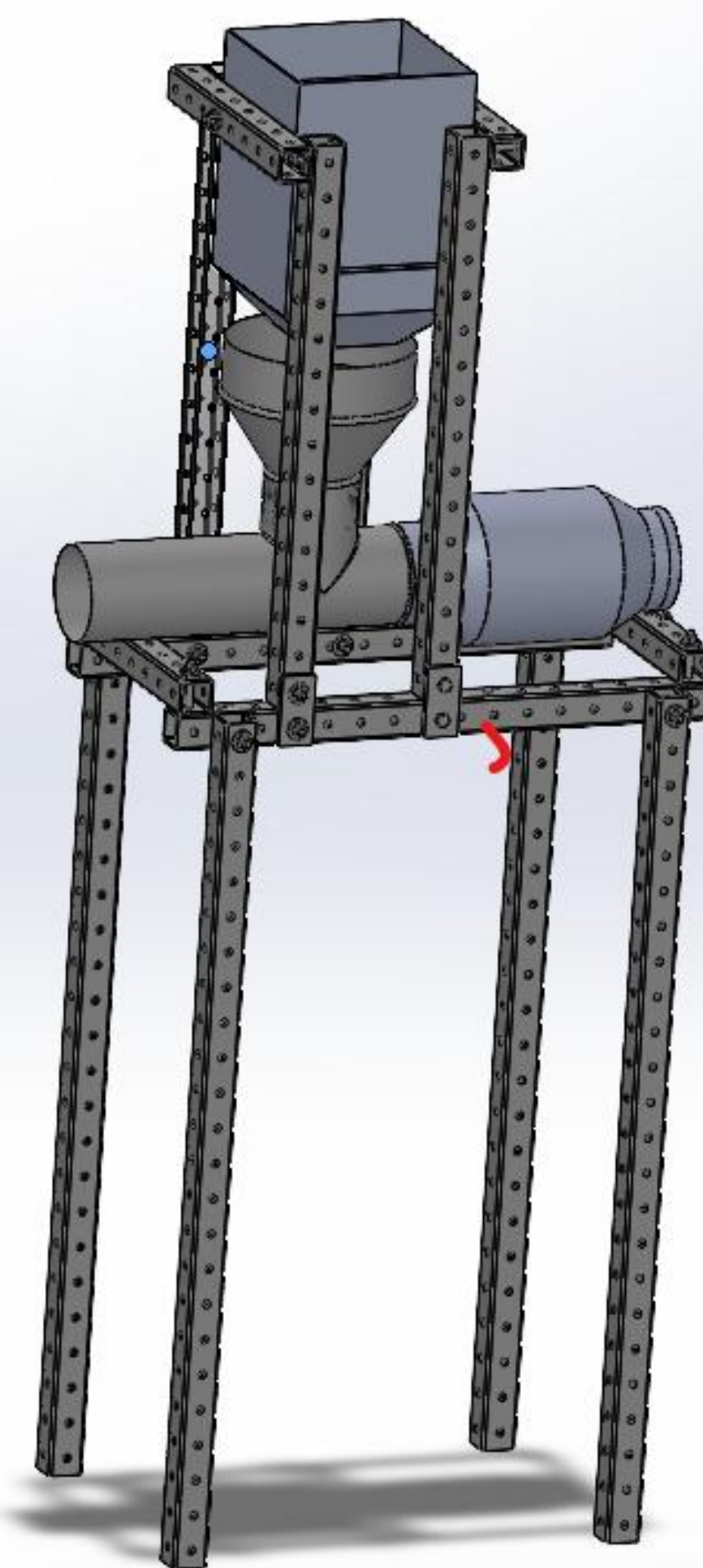


David Gray :
Quality Lead

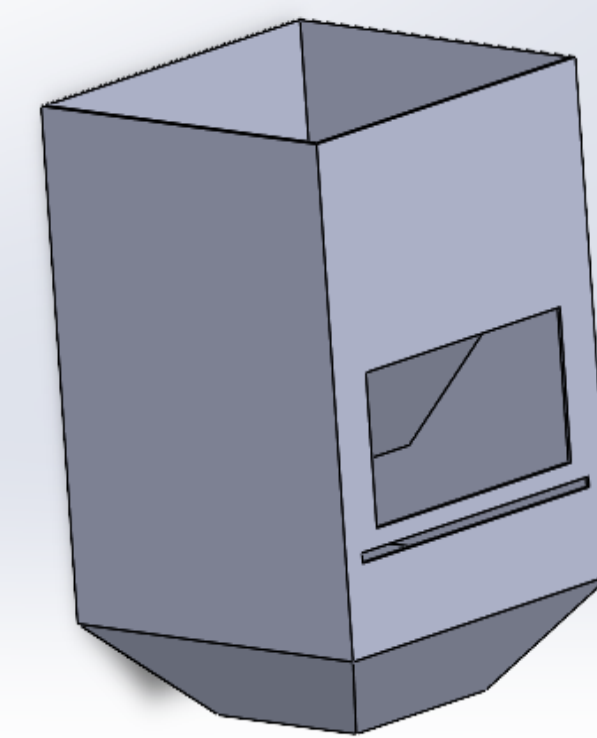
System Level Diagram



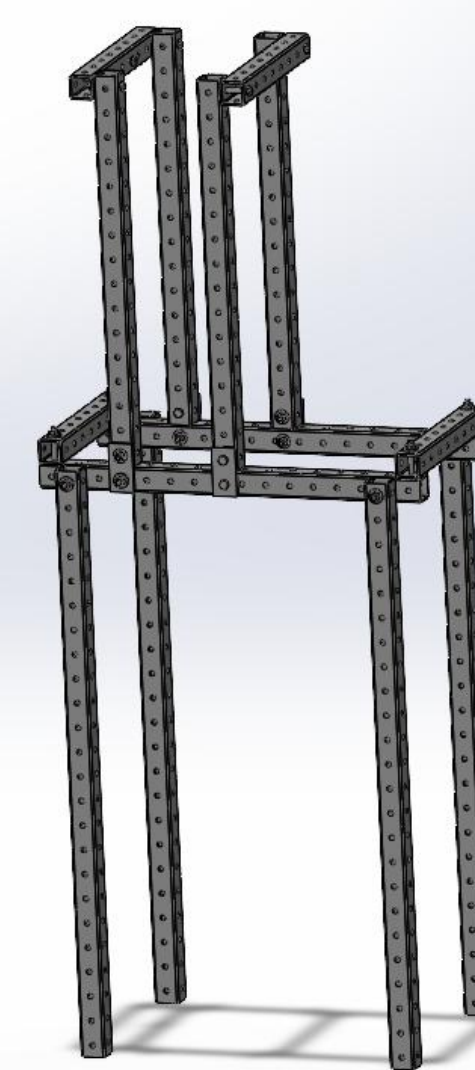
CAD Assembly / Sub Assemblies



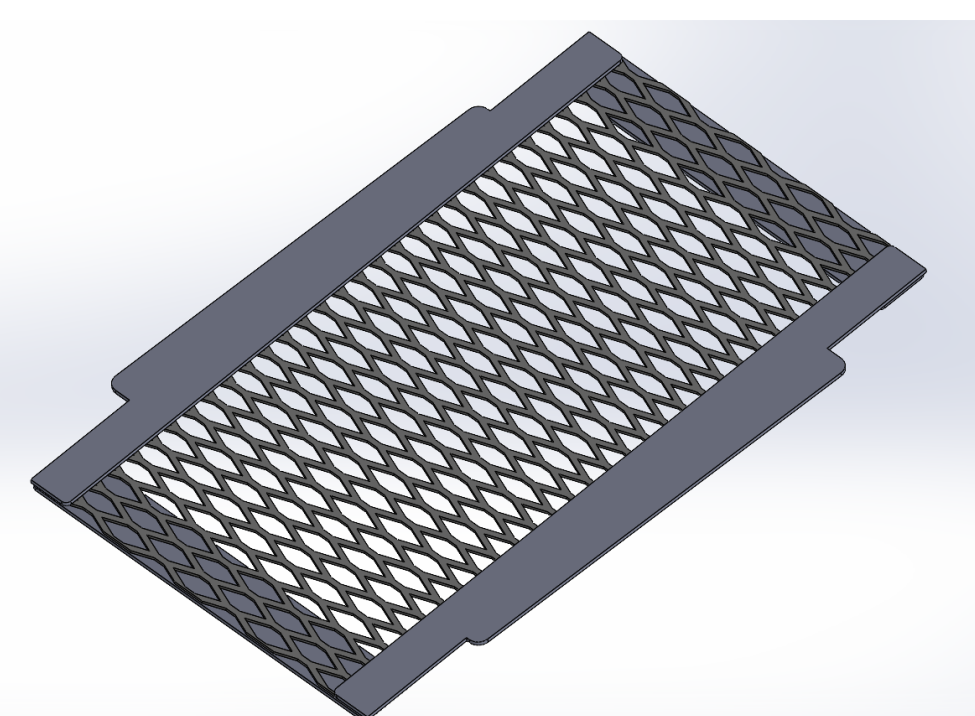
Full Assembly



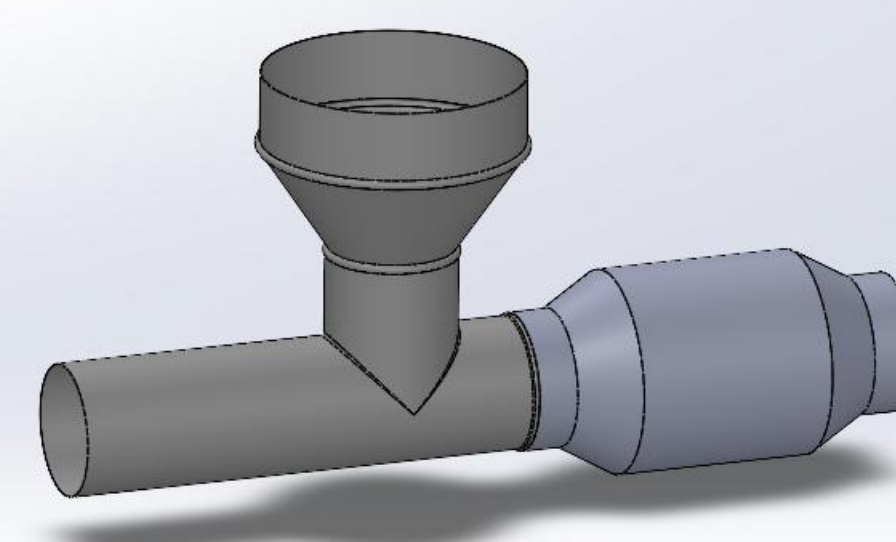
Combustion Chamber



Base Framing

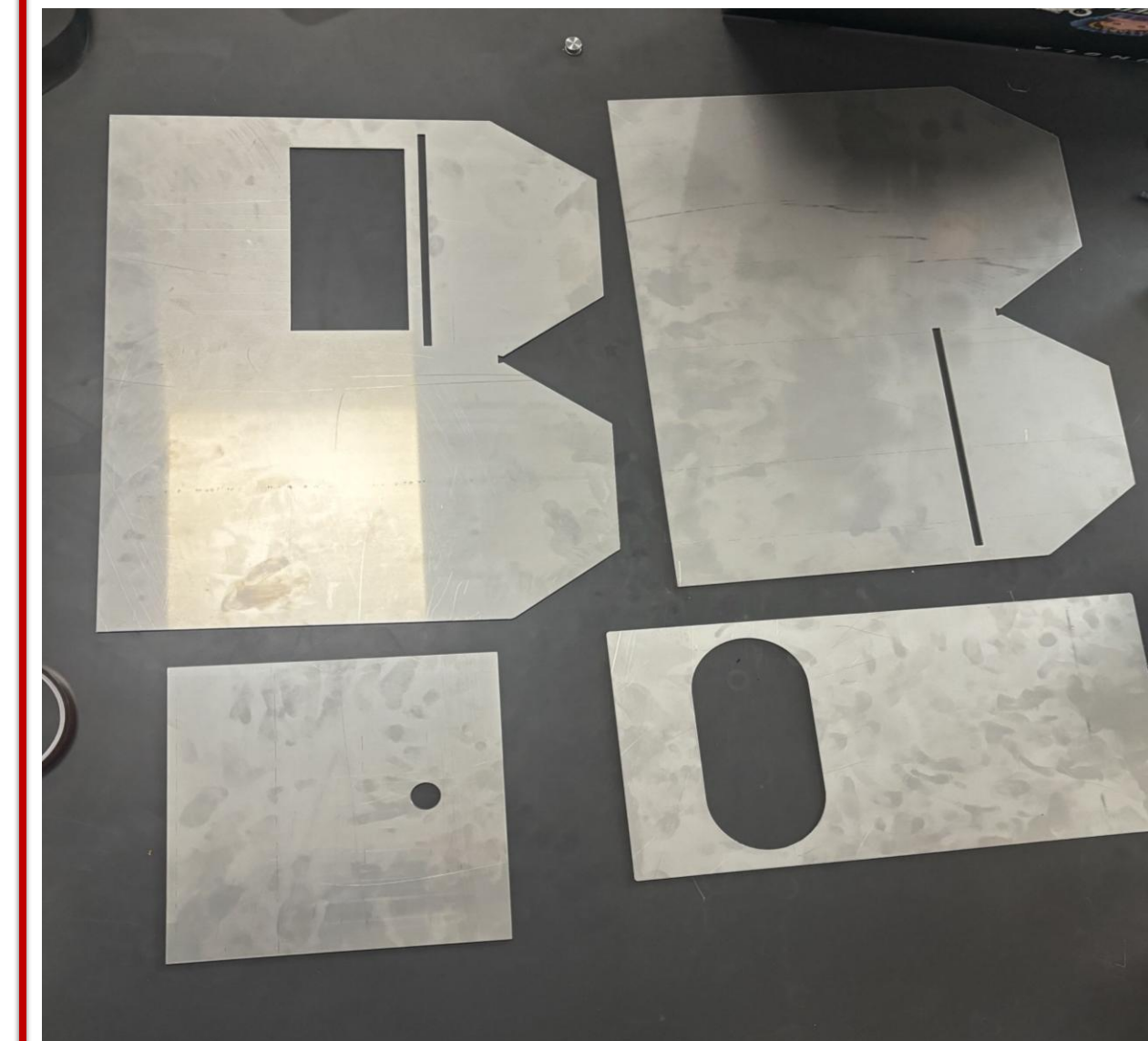


Mesh Tray

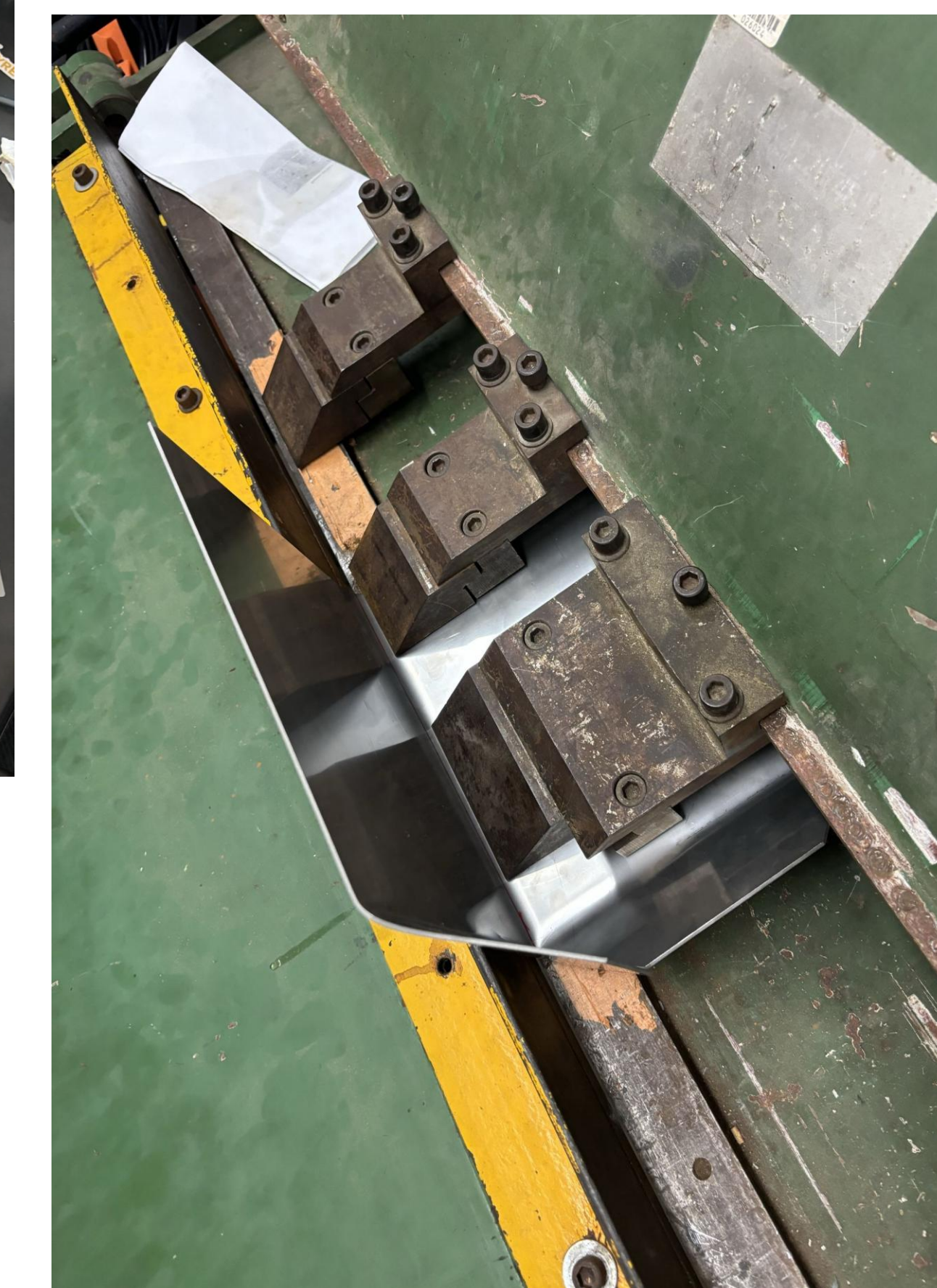


Wind Tunnel

Assembly & Manufacturing



Water Jetted Steel Plate Cut Outs



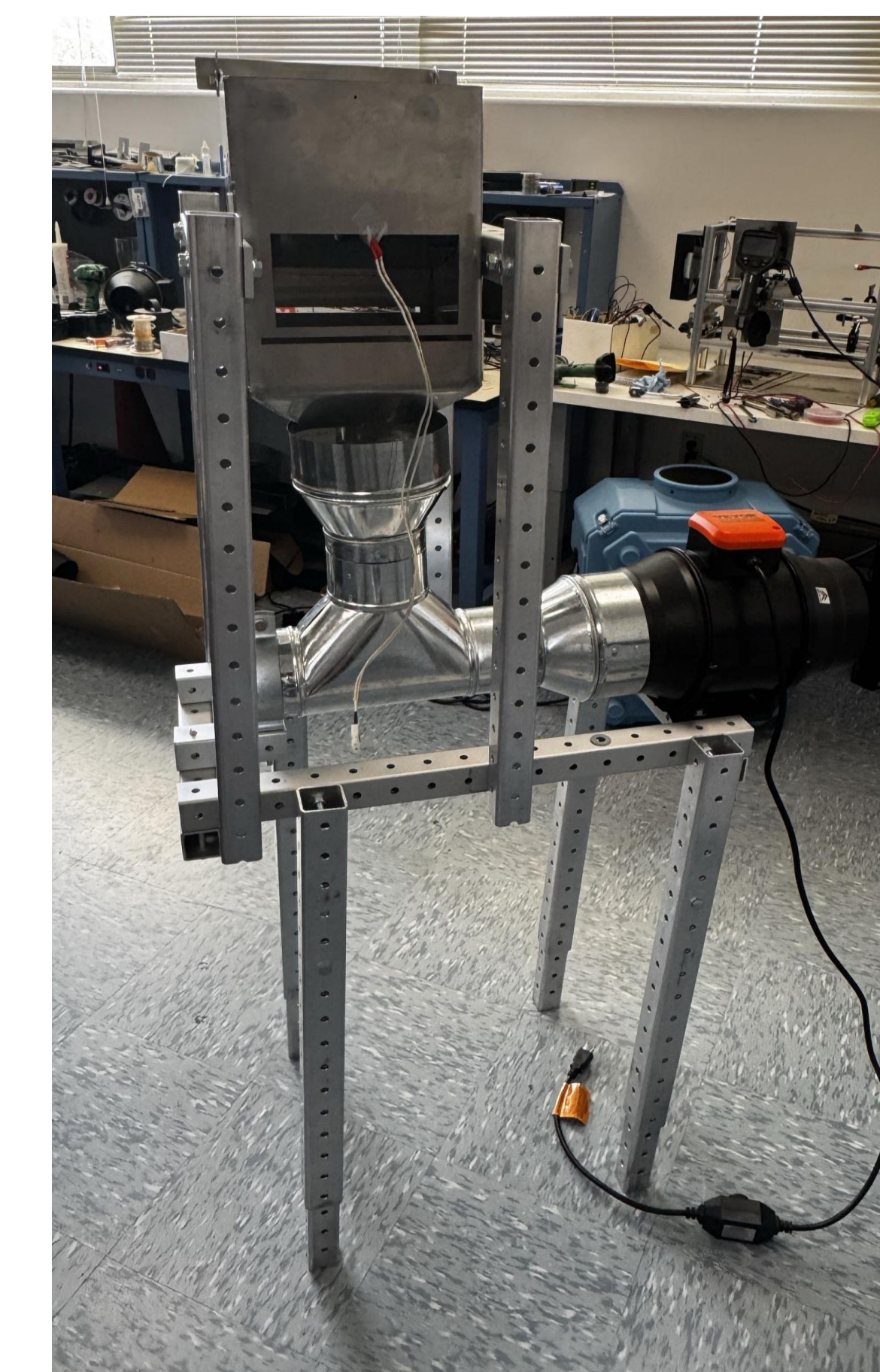
Steel Bends For Combustion Chamber



Cutting Aluminum Framing



Grinding Combustion Chamber Edges for Welding



Full Visual Assembly

Testing / Analysis



Combustion Chamber Prototype



Air Flow Filter

Acknowledgements

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