

San Diego State University



Description

Aztec Ergonomics, sponsored by Aztec Electric Racing (AER), is tasked with providing ergonomic solutions for AER's Formula Style Electric Race Car. The jig is designed to provide a modular and collapsible tool to record measurements of body composition for optimizing driver ergonomics and safety in AER's future chassis design. The final design incorporates adjustable modules-the seat assembly, pedal box mount, dashboard assembly, and headrest-allowing for precise measurements and repeated use.

Team Members



Zachary Caceres-Batista



Sean Hedgecock



Jakob Bravo-Calderon

CAD Assembly

We utilized 80/20 aluminum extrusions and modules to maintain structural integrity and to allow component maneuverability:

- Our design uses a sliding base frame that everything attaches to for collapsibility.
- The roll hoop pillars fold forward to minimize space.
- The seat is attached to a telescopic rail to allow forward and backward angular mobility, additionally, the seat itself will detach from the exo-skeleton.
- The dashboard will detach for collapsibility and the steering column can be adjusted.
- The pedal box and dashboard slide off during collapse.
- A master-index system is incorporated into the extrusions along the base frame and the adjustable seat module.
- Based on the body composition of each test subject, the jig will be able to accurately record the data and translate it to the chassis build.

Race Car Ergonomics Jig [Phase II]











Manufacture & Pre-assembly
 Outsourced material and
products.
Weld formed tubing to
dashboard plate.
. Dunch halas in talassanis usil

thank	the	foll	owing
heir	supp	ort	and
e devel	opme	ent	of the
ics	Rac	e	Car