



Battery will go on top of robot.  
Other electronics in the C  
channel



Top View

Magmotor

Gearbox

3" Ti "C" Channel. Similar dimensions to the 6061 channel used in previous TO designs. T-Boxes and drive motors nestle inside the channel at the ends. The battery and speed controllers can also fit in here.

A 5" strip of Ti should convert into a 3" channel with 1.11" rail height. 22" of it comes in at 1.95lbs

Motor backplate: Long threaded rods from the gearbox pass through the "C" channel and this plate, and are bolted down to clamp the Magmotor firmly into the frame.

Ti bottom plate. Bolts to gearbox, motor backplate, and channel. Another identical plate, not shown, fits on top of the gearbox, and mounts identically, sandwiching the gearbox, motor and backplate.

Since C channel is 3" wide but gearbox is only 2.875, we have room to double the thickness of the bottom plate (which makes life easier because the 3" mag projects below the gearbox slightly, so we won't have to cut a slot for its endbell. However, this will reduce the blade clearance, so it probably isn't worth it.

Note: template off existing aluminum spars to locate motor mount holes. Curved corners of the C channel cause measuring problems.

I wonder if flanges are worth it, given the bending stiffness we'll get from the gearbox assembly.