

Team 3176 White Paper

Title: Tank Drive Lift	Author(s): Julia Frame
Subteam/Function: Design	Subject: Lift
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Abstract

This white paper is detailing what the Tank Drive Lift is, and how it was CADed. The person reading the paper needs to have a basic understanding of AutoDesk Inventor and how things like gear trains work in a subsystem. The goal is to explain a possible way to lift the robot off the ground.

Reasoning

The idea of a Tank Drive Lift was created because our team has experience with tank drive, and it would be strong enough to hold the weight of the robot. We also figured most the parts would be easy to make or buy cheap.

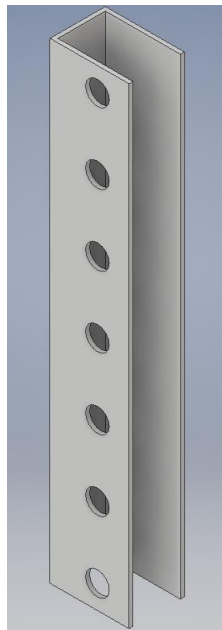
Tank Wheels Protector

The Tank Wheel Protector is a rectangle made with $\frac{1}{8}$ inch thick aluminum sheets. One side has holes all the way through the part going down the edge for gears to be inserted into. The bottom has two holes all the way through for the tank wheels. There are less gears on the Tank Wheel Protector than there are on the Tank Gear Lifter. This part will move up and down the Tank Gear Lifter.



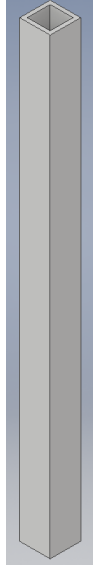
Tank Gear Lifter

The Tank Gear Lifter is connected to the robot frame and is stationary. It is made with a piece of long U Bracket with holes in the sides that line up with the centers of the gears. The gears mesh with each other, unlike the Tank Wheels Protector.



Tank Lift Straightener

The Tank Lift Straightener is connected to the robot frame and rubs against the side of the Tank Wheels Protector opposite of the Tank Gear Lifter. This is just normal 1 in box tubing held in place with brackets. The main job of the Tank Lift Straightener is to keep the Tank Wheels Protector sandwiched in place and can not move around.



Assembly

