



This part is designed to be a holder for the VEX competition license plate. The design is meant to create an easy platform to both permanently attach licence plates to the robot's structure, and change the plates out between matches. Often before a match, license plates are mounted precariously due to the rush of preparation. This part is meant to solve this problem by eliminating the compromise between speed and efficacy.

Our part is meant to fit into the cavity of a 2 x C-channel. It is mounted to the C-channel by two standard vex screws. Due to the molding on the back of the part, it is unlikely that the license plates will be able to move around and become detached during competition. On the front of the part are 8 attachment points for the license plate. They use a similar design to the IQ connection pins, and are intended to offer both a sturdy connection and to enable the user to easily snap license plates on and off. The simplistic design contains no moving parts, and requires a minimal number of members to secure the plate.

I used Autodesk Fusion 360 for the design. I started by creating a model of the VEX license plate ,as I could not find an existing model on the internet. Once I had created a scale model of the license plate, I created the part so that it would fit well with both the license plate and existing vex structural members. After I designed both parts, I used fusion 360's rendering tools to generate the three images that are attached to this submission. I used version 2.0.3800 of Fusion 360 to complete all parts of the process.

Overall I found the capabilities of Fusion 360 to be user-friendly and efficient. Manipulating meshes and parts of the model can be done with ease after just a few hours of practice. I find it more effective to use this software as it seems to know what the user plans to do, and it is correct the vast majority of the time. I intend to use Fusion 360 as my primary CAD package when constructing a complex part ,as the software is more than capable of more challenging projects. For completing CAD of an entire robot, however, I find that Autodesk Inventor is a more capable tool, as it deals with assemblies much better than Fusion 360.

I hope to be an engineer and I expect that 3D design software will be instrumental to my work. Even if I do not use the same CAD packages when working for an engineering firm, I feel that getting practice in interacting with any CAD is a good exercise and strengthens my ability to think about designing parts.