

Double Battery Holder

We have created a double battery holder. This part allows any VEX team to have two batteries in the same location. This helps with the ease of changing batteries and helps solve weight problems. Our robot design for *In the Zone* is heavy and requires significant power to operate. With the double battery holder, we changed our bot's center of gravity in a quick, reliable way, which helps with problems such as stalling.

We used Autodesk Inventor 2018 to design our part. In order to create this part we imported the normal battery clip into inventor. We then adjusted the part so that another set of clips was above the normal set. While making this, we made sure that both batteries were able to go in and out easily, since speed and ease of use are primary components to the holder's success on our robot.

We learned many things while creating this part. First of all we learned the power of CAD, and how to create virtually anything if enough effort and thought is put into it. Another thing we learned is how to edit and change parts in an assembly file. Our first prototype was too wide to reliably hold both batteries. We then redesigned and 3D printed a second version with extra attention paid to the specific dimensions of our robot. The second version works perfectly.

We will continue to use 3D design software to make useful objects for our robot. It is a necessary tool for a competitive robotics team because it allows us to make very clear and accurate models of our robot, and allows us to customize parts according to the needs of our specific design. 3D design may help us in a career path because many fields require a knowledge of design softwares. Careers in engineering, architecture, aerospace, automotive design, the entertainment industry, and many more rely on using 3D design softwares.