

- **Brief introduction: Identify why you created the part – what functionality are you improving or what issue are you solving?**

Instead of the regular smart charger, we wanted to create something that could give us and other teams access to the battery voltage without having to go through the use of battery beakers. By doing this, it could decrease the chances of the battery from overheating and it will increase its battery sufficiency.

- **Explanation of how the new part would be used and how it fits into a complete robot design. Note: you do not have to design the complete robot, just the custom part itself.**

As stated earlier, this product is used to help teams to determine if a battery is good or bad by showing its battery voltage. Compared to a regular battery charger, this smart charger has a LCD display and will automatically stop supplying power once the battery is full.

You start off by plugging in the smart charger and the batteries. After minutes of charging, the charger will automatically shut down and when a team member goes and grabs a battery, the battery voltage will be seen. When that's done, you can automatically know that the batteries in your hands are in perfect condition and is ready to be used for a match.

- **Explanation of how you used Fusion 360 or Inventor to create your new part AND clearly state the version of software you used.**

We used inventor pro 2016. Since we used this software to help CAD all our robot design. First we created a 2D flat surface for the backing of the battery charger. Then, we extruded the flat surface so that it was a rectangular prism just like the basic outline of a battery charger. After, we extruded some parts of the block creating the charging cable and the power cable. Then we put the on and off switch and added on the lettering. Lastly, we added a LCD display to the bottom right corner of the battery charger.

- **Brief conclusion: What did you learn from this project? Will you use Fusion or Inventor in the future? If so, what for? How does Fusion or Inventor help you if you are on a competitive robotics team? Will learning 3D design software help you in your career path? If so, how?**

During this project, many of our new members and middle school member were able to learn and glance at process of creating something on Inventor pro 2016. This will greatly benefit them in the future of our program because inventor pro is one of our main CAD program. We use this program when designing robot not only for VEX but for other programs. It helps bring our robot to life without actually building it and wasting material. With CAD, we are able to see a design and understand how it will work without actually building it. This saves time and money. Yes because we plan to join the engineering field.

