

CAD Project

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Robots need motors to move. Easy, then just get some motors and put them on. The problem is that they keep on falling off. So, attach them! But, they keep on wiggling around, and because there is no piece attached to the motor on the bottom, it has a little trouble moving, making it move slowly and terribly. We are currently going through this issue. The motor attached to our manipulator was wobbling, making it really awkward and difficult to achieve a precise position. There for, we got the inspiration for our new part.

Our part is used as a small caddie for motors. What you do is you put the motor in the caddie and fasten it using any sized connector piece to a beam that fits your needs, with enough strength to support a a motor and the caddy as well. This way the motor will not wobble around and fall off right when you're trying to score a tournament winning uniform post. The caddie is completely gray and if necessary it can be emblazoned with the VEX IQ logo. There is one hole on either long side of the caddy for the pitch shaft to go through. There's also two holes going widthwise so you can stick your wire through and attach it to the brain of the robot. This would make it so the wires don't get in the way of everything. This can be frustrating if you have an emergency, such as a part breaking off in the middle of a match. Things like that can be seriously stress inducing. The only thing you can think of are the words "Oh dearest, what did I do!?"

"Would I use tinkercad again? Yah!" Tinkercad (The version of software we used was, December 7 2017 Tinkercad 3.7) really helped me put my ideas on a computer in 3D. This could help me with my future career because who knows maybe everything will be 3D printed in the

future. Tinkercad was very helpful because what my teammates explained and sketched to me well let's just say it was confusing, but when we all worked together and really talked we learned that tinkercad helped us so much what my teammates explained and sketched was nothing like the final product. In the end it really made sense.

With 3D printing this also can bring your invention to life. It really took it a step further and made it so much easier to understand, like where it would be placed and how it connects to your robot. "So would I use tinkercad again? Oh yah!"

Putting ideas to life can be difficult. Your imagination can go crazy, but how are you going to make your idea from in your head to real life? Using Tinkercad helped us do this. We know for sure that being able to use a 3D design program will be very helpful in the future. It can be hard to design your robot, or a piece of the robot by just using a pen and graph paper. If you use a design program you can really show what you can do with your robot, or piece. You can know how everything will fit together and how your robot will, or should look like before you build it. This would definitely help in competitive robotics.

When you are applying for a job, especially a STEM job, they want to know what skills you have. The more skills the better. The engineering process consists of think, Do, and Test. When you are designing something you are in the thinking stage. Using a 3D design would help you in the think stage because it would help you make your ideas even better. You are able to look at your ideas, see your flaws, and know what is working well. Before you go into the "Do" stage you have to have a good idea in place. Using 3D design makes you you have just that. We now know how to do this now, and that using 3D design will help us for robotics, and our future.

Thank You.

