**Clip on Keps Nut**

I made this Clip on Keps nut to make working in small spaces easier. This Keps nut also makes taking apart your robot simpler. Instead of unscrewing screws out of the regular Keps nut all you must do is pull the clip on Keps nut off of its screw. This process does not require any keys or wrenches.

I designed the clip on Keps nut to have a small opening that would allow it to be pulled off the screws but prevent it from falling off during matches. The clip on Keps nut would make the prototyping and building process faster. It will be much easier and way faster to put together the robot and to take apart the robot.

 How did I make this Kepts nut? First, I downloaded a Keps nut from the VEX robotics website then I put it into Autodesk Inventor 2021. Then I made two planes. After I made the two planes, I cut the middle of the two planes. then took hundreds of tries to try to make it the perfect angle. then I loaded up the flexible filament into the FlashForge Finder 3D printer. Finally, after printing it out I put it on to a screw and tested it out. Below are pictures illustrating how I made this clip on Keps nut.

1. Open Part File
2. Inventor
3. Convert to .stl
4. Open in slicer software (Flashprint), convert to .gx
5. Print
6. Use!

 I think this 3D printed clip on Keps nut would be a helpful piece to have while building a robot. It will make building robots easier and faster because it stays on firmly but is able to be snapped on and off of screws. The clip on Keps nut is a great solution to attaching VEX pieces in tight spaces. With regular keps nuts you would have to hand tighten it but overtime the Keps nuts end up loosening. The best way to tighten the original Keps nuts is with a wrench or a drill but in a tight space there isn’t room for those tools. That is why the clip on Keps nut is a great alternative to the original Keps nut.