Multifunctional coupling

When we finished the match which was held in Shanghai. We know that we should change our shot mechanism, so we decide to use stone throwing mechanism to shot the balls. In our research, we know if we use the shafts to prop up the whole mechanism, it will cause irreparable deformation even lead to destruction. Finally, we use the high strength shaft to replace the shafts. And then, when we want it more stable, we use some electronic components, such as Potentiometer, Optical Shaft Encoder and so on. That’s the problem: the high strength shaft can’t through these holes.

In the end, we designed a new part—Multifunctional coupling. It can combine the high strength shaft with the shaft. Also it has two parts. One connects the high strength shaft, the other connect the shaft. They can be paired. Using this part, you can use some electronic components which have to have the shaft, such as Potentiometer, Optical Shaft Encoder and so on. More importantly, Compared to official couplings, it has several advantages. Firstly, it has better stability. Then, it has better replacement and practicability. More importantly, you don’t need to drill in the C-Channel when you want to use the high strength shaft.

When we created this new part, we use the Inventor. We collected the date about the high strength shaft’s thickness, the shaft’s thickness and the screw size. When we used 3D printer, we had to test all aspects of its data. And then, we revised some of the dimensions according to the experimental date.

In the future, I think more people will use the 3D design software to design what they want, because 3D design software gives us a platform to create something. In fact, our team use 3D design software to assemble robot in our computer. When we want to revise our robot, we must revise the design in the computer and hold a meeting to discuss it.