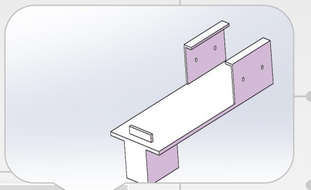
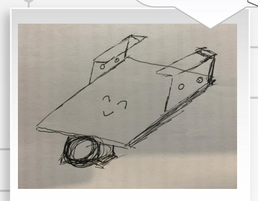
FCE - Functional Capacity Evaluator (Cradle)

Jiapeng Wang(Durant Wang) Supervisor: Matt King

FCE is widely used in people's daily life. The so-called FCE is to assess the ability of individuals to engage in work activities related to their employment. The main function of FCE is to evaluate a person's ability to participate in work, and sometimes it can also evaluate other daily instrumental activities that support work performance. It is mainly used to record the degree of pain reported by customers in various activities and the ability to manage pain, and convert it into data to determine the activity. This is why we have to study FCE.And my project is to make Cradle in FCE. His main role is to fix the data collector, which is equivalent to a hub for connecting the data collector and the data sensor.

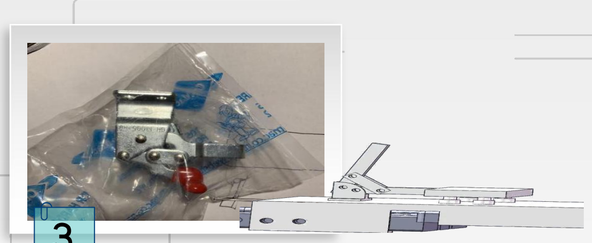
FCE is composed of many parts, and cradle plays a vital role in this equipment. It is like a hub, connecting several parts together to form equipment for work. First, cradle needs to be connected to the arm of FCE. And cradle needs to connect the hand grip and support data collector. While supporting the data collector, we also need to consider fixing issues to prevent the equipment from falling off during assembly or work.





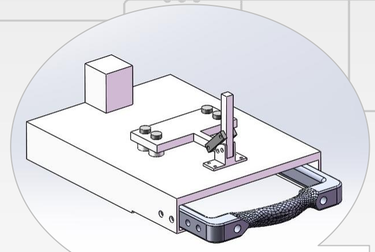
1

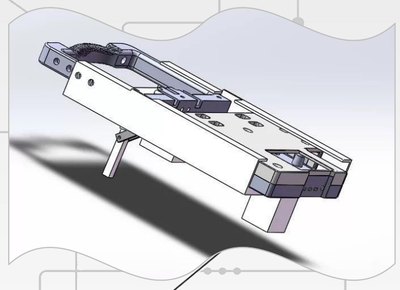
This is hand-painted and the initial use of SolidWorks Design.

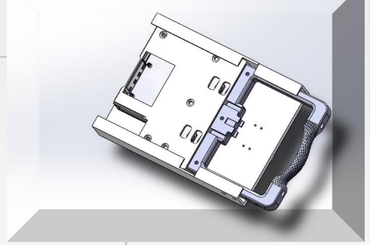


3

We researched and decided to change to a design similar to a pliers that can not only push up and down but also fix it.

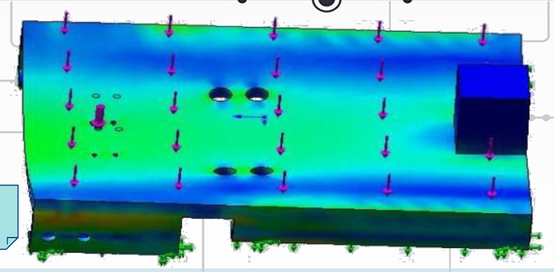






4

Solid Works is my indispensable design software in this design process. Solid works software is powerful and has many components(Appendix A). Solid works can provide different design solutions, reduce errors in the design process and improve product quality. Solid works not only provides such powerful functions, but for every engineer and designer, the operation is simple and convenient, easy to learn and use. I also reviewed how to use Solid Works for drawing and force analysis tests in this project. Below is the part drawing I made using Solid Works.



2

The picture is an actual simulation of my parts using SolidWorks, and we found that it can still be used normally under the maximum force of 250kg.