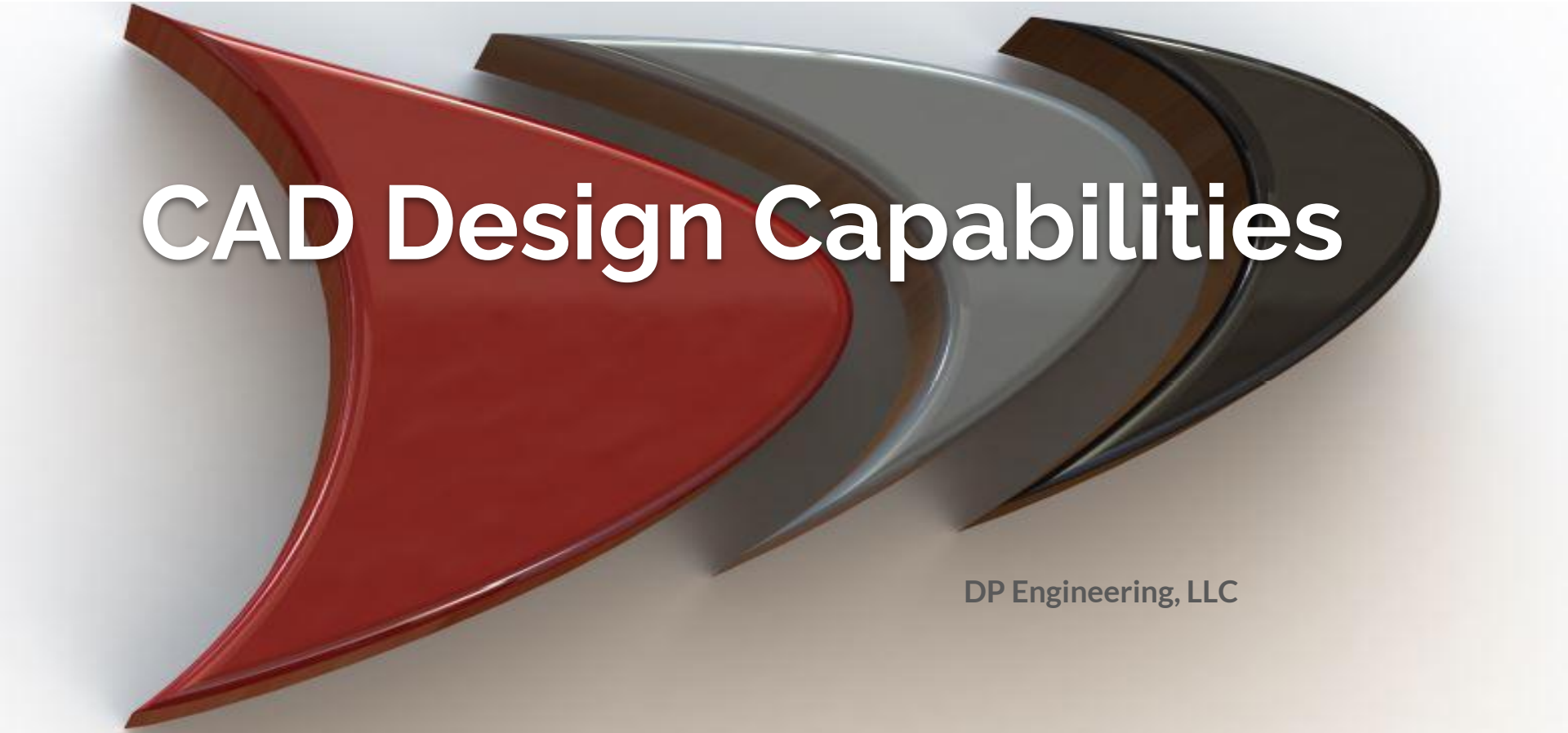


CAD Design Capabilities

DP Engineering, LLC

Overview

DP Engineering LLC,

We are a firm that provides you with a variety of mechanical engineering services. If you need an R&D team or an extension of an existing team. We have capabilities to take your ideas and designs from Concept to Production.

Founded on the premise that engineered product is best. Sometimes you need a extra hand to keep development on track.

TOC

CAD Platform

SOLIDWORKS 2016

DPE is currently using Solidwork 2016. It is our plan to continue using 16, until the demand increases to switch to 2017 from our customer base.

DPE can accept the majority of CAD data files. Prefered are native files, but we gladly accept, but not limited to, IGS, STEP, and PARASOLID.

Model Types

1

Solid

This can really refer to any computer aided design model that has a solid cross-section. These designs are typically built using geometry protruding or cut in a single plane

2

Sheet Metal

Very particular to bending, shaping metal and the physical rules applied to this process.

3

Surface

Complex, Organic shapes that can not always be defined in a single view plane.

4

Assembly

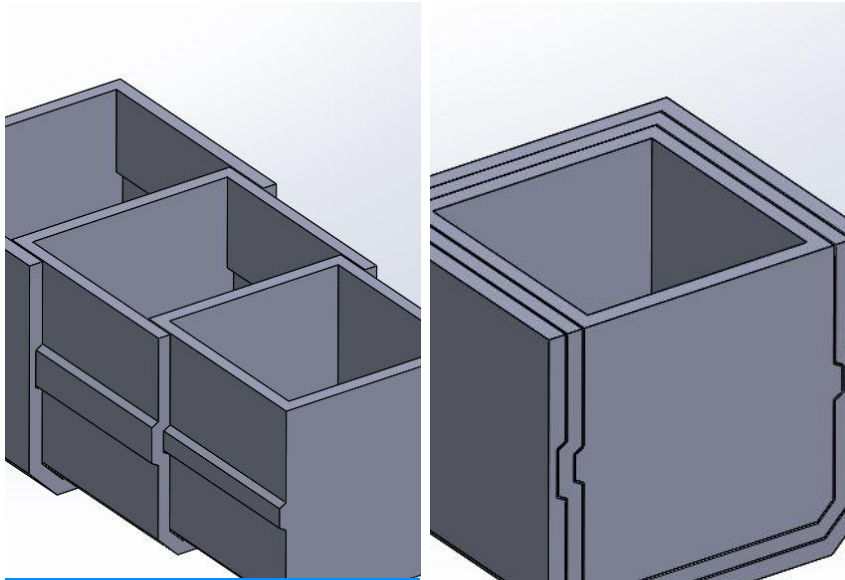
Putting it all together. Placing all the relative components together. Seeing the spatial constraints. Computer Aided Prototyping.

Solid

01

With near 20 years of experience modeling a variety of components for the medical, consumer, and agriculture (just to name a few).

Concepting:
Complexity varies, but customers prefer the rapid response. First stop with DPE is concepts that start to show inner workings without investing time and money into prototypes. DPE is very agile with their design knowledge and communications to translate your ideas into CAD.



Telescoping Box

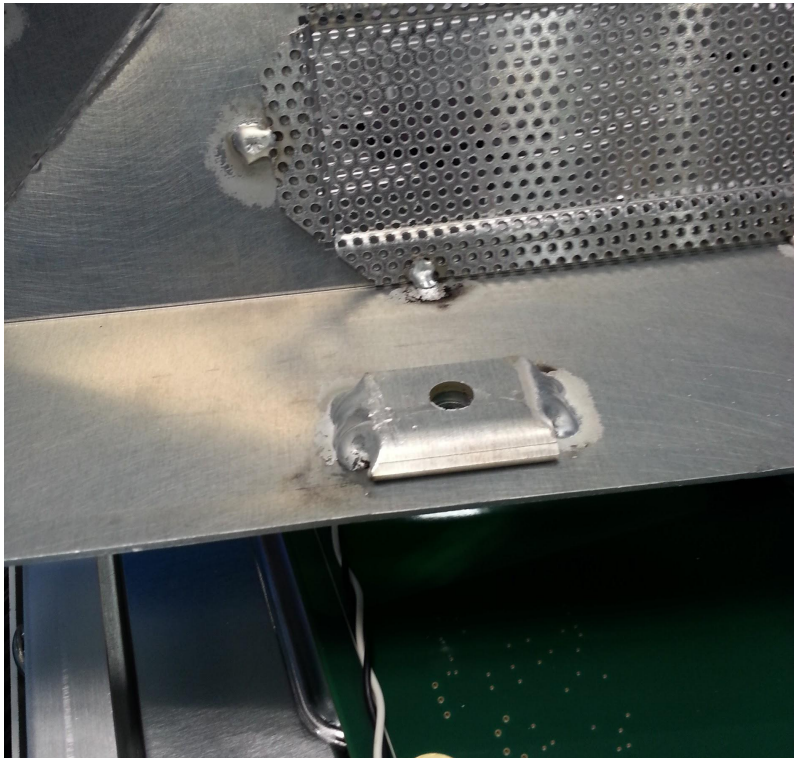
Simple cube with unique featuring.

Sheet Metal

02

Well within DPE's capabilities is sheet metal design. The superstructure of this product was designed using the sheet metal function in solidworks.

Design For Manufacture:
The design was sent in flat and bent configurations for easy manufacturing.

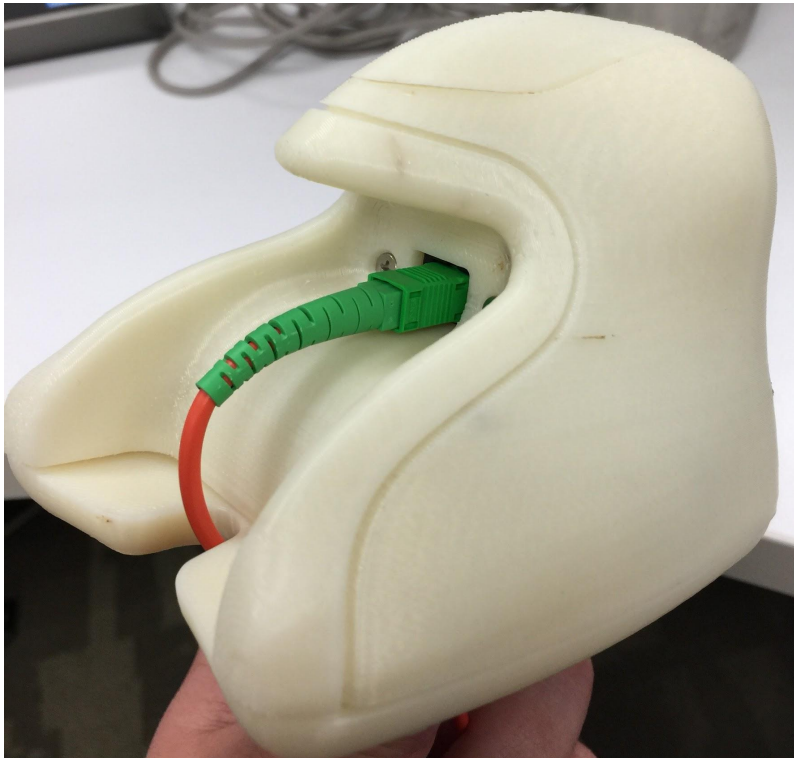


Surface

03

Complicated, Organic, Beautiful, and yet Functional

Industrial Designs:
DPE has excelled at creating complex geometries for many industries. Taking the customers input and translating it into to something spectacular. A shape that gives a stunning look, but also protects sensitive components.



Assembly

04

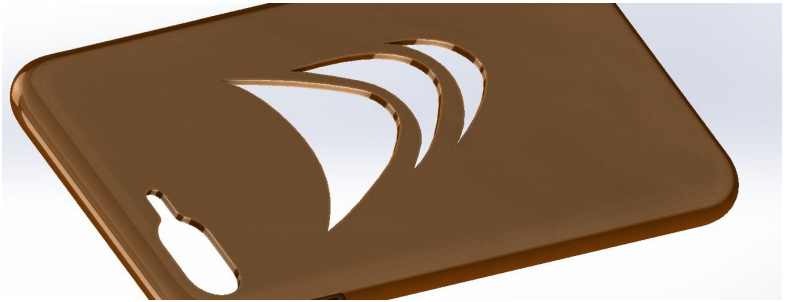
Complex like an injection mold base, or a stand for your rechargeables. Getting a look at the design gave this customer further inspiration.

Enhance:
Changing colors, rounds, clearances, and rendering the view in minutes-allowed this customer to enhance the design before waiting weeks for a printed or machined prototypes.

Drawings / Specifications / Design Outputs

DPE is here to create the specifications for the components we help design. Just as important as good CAD data, is the what remains to be communicated.

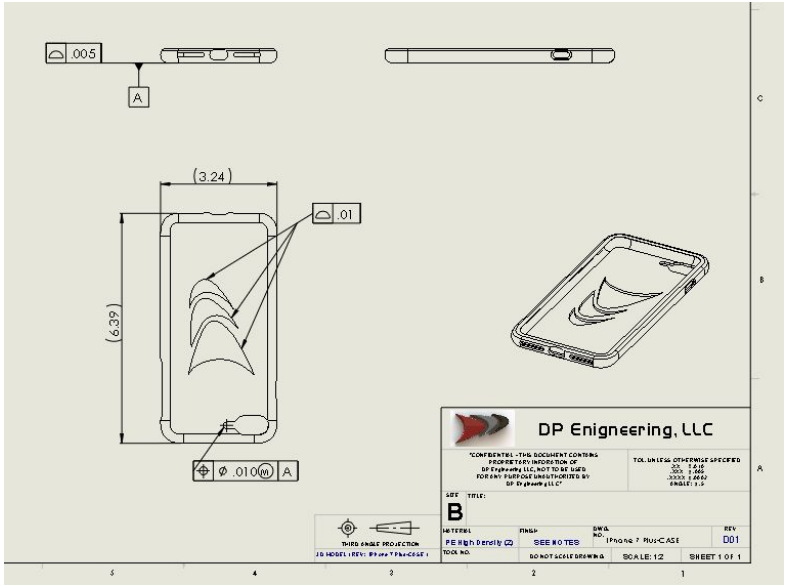
Documentation



No matter what the geometry. DPE will develop the documentation that is required of the project.

Tolerance:
Whether your company uses traditional tolerancing schemes to geometric tolerancing. We can Help.

We can work with you to develop your own customized template to standardize your internal documentation, keeping it looking professional.



Analysis

5

FEA

Static force and pressure simulations using the Simulation Xpress module.

6

Mold-ability

Experienced plastic part designers can verify components can be manufactured to its' intent.

7

Motion

Simple animations can be set-up to look at function.

8

Clearance/Interference

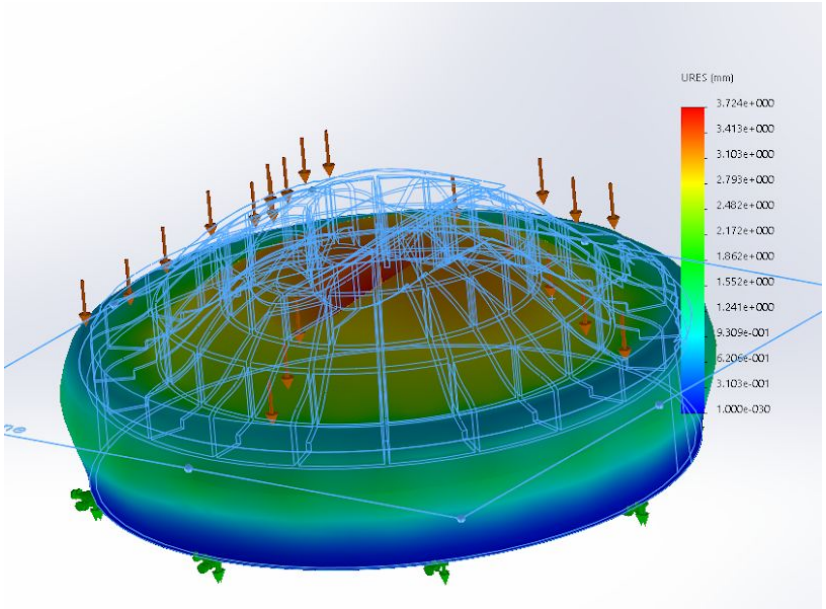
Complex designs are simplified with simple tools that can show minimum clearance and interferences.

FEA

05

Static analysis can be performed on highly complex shapes.

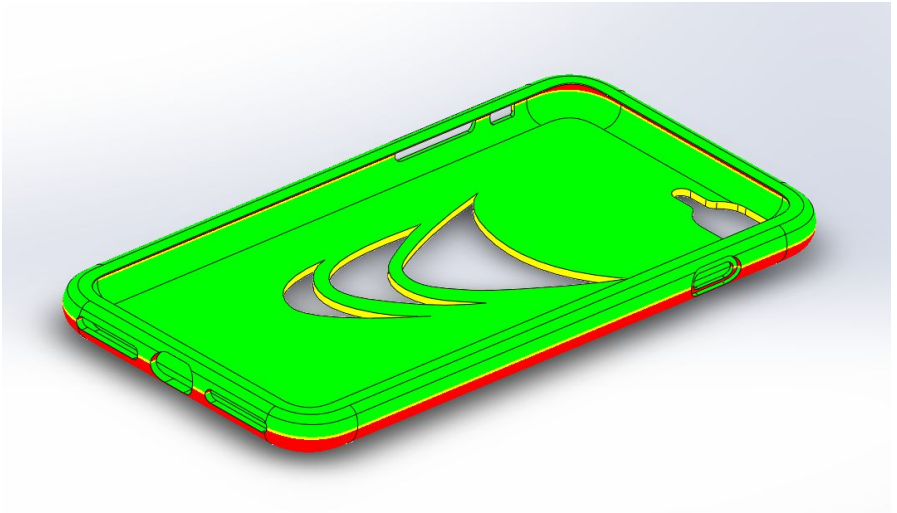
Concepting:
Several iterations were made in a matter of hours, verifying the design would withstand high static loads. In addition to the strength, the component had strict deflection requirements. Analysis also showed a low risk of exceeding this requirement, further validating the design.



Mold-ability
06

What are the actions of your mold?

Experience:
Designing in CAD will allow many tools be employed by the designer. Is there enough draft? Is the components too thick? Let DPE help with this. Looking at the component design in all aspects and guidelines for injection molding.

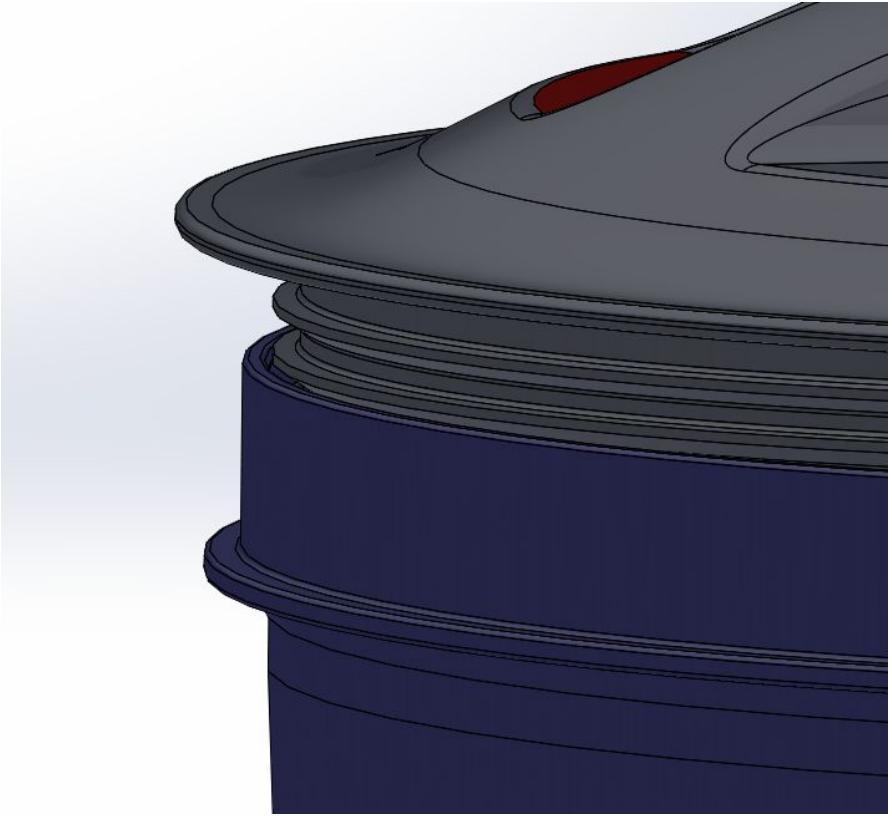


Motion

07

I just want to see it in action!

See it:
Using simple animations, customers can really sell their thoughts. Very helpful for sales and marketing, DPE can package animations to give your mechanical design a bit more life.

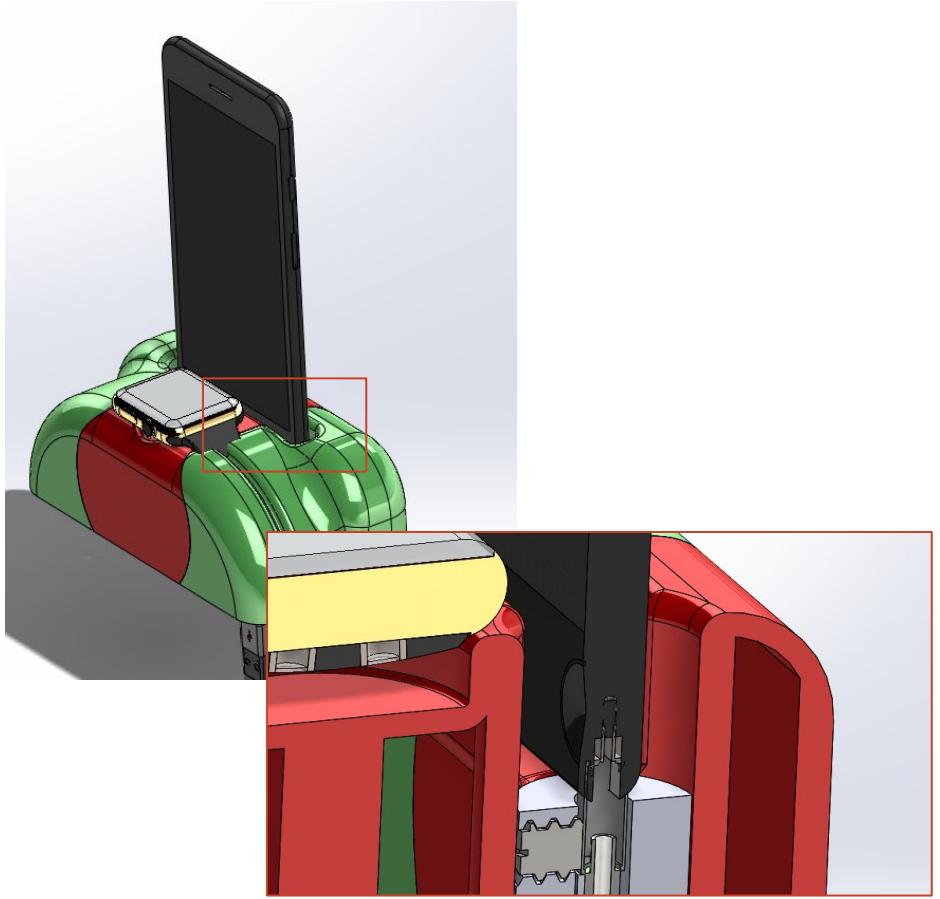


Clearance

08

Take a look inside.

See it:
Tools like clearance verification and interference detection can aid a designer. Looking at critical interface between component and user. Less need for fits and finishes, do them upfront in CAD.



In Closing

DPE is always ready to help. CAD design is an extremely powerful tool. You just need the right company to run it. Please let us get a look at your application today!