

Using technology To Make Products a Reality

Triverus has extensive experience in using 3-D modeling and digital engineering aids. This is more than a capability; it is an approach to product design. We use the DFMA (Design for Manufacture and Assembly) concept as a backdrop for innovation and product development. This geometry and data created is used throughout the product lifecycle from design inception to maintenance documentation. Mechanical design is a basic capability however the product of this design still must be tested and maintained in the field. This is where Triverus has a capable infrastructure to manage product data as well as execute designs in terms of quality control and cost. Finally we use this comprehensive approach to execute the design using automated processes or CNC (Computer Numeric Control) Machines. We develop most of our products using this approach. The tools that relate to this product development approach are listed below:

- Mechanical Design (CAD)

SolidWorks and other graphical design software aid in the product concept stage. This is a cost-saving concept due to the fact that the first model that is produced is followed up by rapid modifications and iterations before the model is committed to a first prototype. The design iterations and critical analysis takes place before a prototype is made.

- Finite Element Analysis (FEA) FEA can be a valuable tool in terms of applying engineering judgment. A design can be vetted of critical flaws before money and time resources are spent on a first prototype. The tool is also extensively used to run analysis on different design scenarios which the product may be subjected to. A drop test or high speed impact or limit load may be examples of such scenarios.

Triverus uses the following Packages for FEA analysis:

1. ALGOR FEA (Linear, Static)
2. COSMOS FEA (Linear Static)
3. COSMOS CFD (Computational Fluid Dynamics)

- Manufacture Resource Planning (MRP) and Product Data Management (PDM) are systems in place that allow us to execute products in terms of vendor/supply chain management, product component inventory and traceability and quality control. These systems provide the necessary structure to transition products to use.

- Computer Aided Manufacture (CAM) CAM is a manufacturing method that we employ as often as possible. The use of automated processes is very much a concern during the design process. The geometry and parts that we create during a design must be manufacturable and economical. CAM allows us to produce a wide variety of parts and subassemblies to execute a product. We employ various cutting edge technologies including Waterjet, Plasma, Laser and 4-axis machining,