

3D Modeling & Drafting for Crash Test Dummies

Case Study Highlights

Client Profile:

Crash Test Dummy Manufacturer, USA

Objective:

To develop 3D model, assembly and detailed 2D drawings for crash test dummies

Challenges:

- Developing complex surface geometry with machining details for face, skull & neck portions
- Maintaining weight proportions and articulations to replicate human body
- Ensuring accurate assembly of individual body parts of the dummy
- Establishing appropriate manufacturing details in the manufacturing drawings

Solution:

Surface modeling, assembly and detailed 2D drawings were developed as per the inputs provided by the client. Manufacturing information was accurately provided within the detailed 2D drawings to meet the requirements of production.

Comprehensive digital model of the crash test dummy was developed, assisting client in easy manufacturing and future modifications.

Software Used: SolidWorks

The utilization of crash test dummies in the development of automobiles & aircrafts remain inevitable to evaluate the ergonomics and safety effectively. As safety norms continue to become more stringent, the dummies are increasingly becoming sophisticated to record details that exactly replicate the behavior of human body. The manufacturing of these anthropomorphic devices (ATD) are limited to handful of manufacturers due to the requirement of maintaining high specification standards as required by government safety agencies and automobile manufacturers.

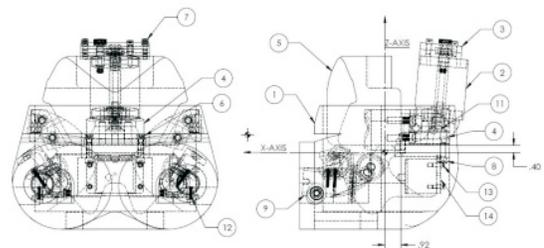
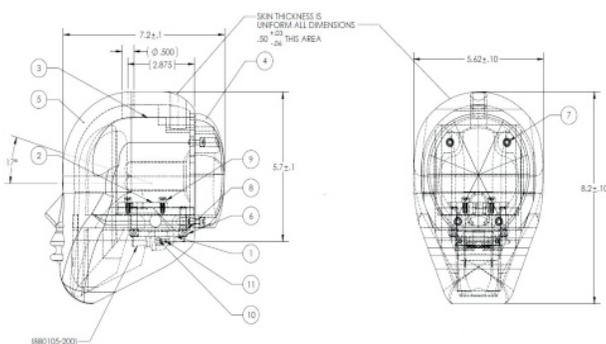
A leading ATD manufacturer from the US required a 3D modeling and drafting solution for a crash test dummy as per the design specification mentioned by the automobile manufacturer.

Solution

The crash test dummy model was successfully developed in 3D using professional CAD tools, with accurate surface geometry and assembly details. In order to ensure weight proportions and articulation to replicate human body, special care was taken to maintain dimensional accuracy. Along with a 3D model of the dummy, detailed assembly as well as 2D drawings was provided to the client to meet the production requirements.

Benefits

- Comprehensive design information reduced manufacturing time
- Quick modification in the model was made possible to meet specific future requirements



About Mechanical 3D Modelling

Mechanical 3D Modelling is an India based company that caters for global clientele and plans to penetrate deeper into the existing and emerging markets. Proficiency lies in offering qualitative, cost effective and time bound mechanical engineering design services, including 2D, 3D CAD drafting, 3D solid modeling, FEA, CFD, rapid prototyping, reverse engineering. Professional and highly experienced team can handle all kind of CAD projects with the use of AutoCAD, Wildfire, 3D Max, Inventor, Solid Works, Solid-edges and Pro-e tools.