CASE STUDY

Engineering Design Services

Engineering Design & Drafting | CAE Services: CFD & FEA | Reverse Engineering
Rapid Prototyping | Product Design | Value Engineering
PLM Services | Technical Documentation
Reverse engineering is increasingly becoming a useful tool for manufacturers to re-consider their product design in an efficient and cost-effective manner. Providing insights about the design parameters affecting the performance and longevity of the product, reverse engineering also serves as a method to study competitor products and keep pace with the market requirements.

One of the prominent aftermarket auto parts manufacturers from USA needed reverse engineering solution for a broad inventory of their products. Hi-Tech offered a qualitative solution for three major automotive parts using a team of qualified CAD professional and design engineers.

Based on the receipt of parts from the client, a digital design process was initiated. Dimensions were calculated manually as well as using 3D scanning and CMM methods. For reverse engineering universal joint, brake drum and brake rotor, entire assembly was disassembled and individual component dimensions were recorded with detailed information on material, fits and tolerances. The information obtained was utilized to develop CAD drawings for inspection purposes and identification of design improvements in critical regions leading to early failures. Based on the inputs received from the client, the designs of the parts were altered and final assembly drawings were prepared. Additionally, detailed manufacturing drawings were also developed to meet the shop floor requirements.

**Benefits**
- Digital design information provided room for quick design changes
- Reverse engineering helped identify regions needing design alterations
- Manufacturing drawings significantly reduced the product development process

**About Hi-Tech**

Hi-Tech Outsourcing Services is one of the leading engineering services providers with an extensive expertise in CAD modeling for automotive, process, building/architecture and heavy engineering industries. Based in India and USA, we render engineering services to clients across the globe with a team of qualified draftsmen engineering professionals.