

Reverse Engineering using Pro/E Modeling & Scanning Techniques

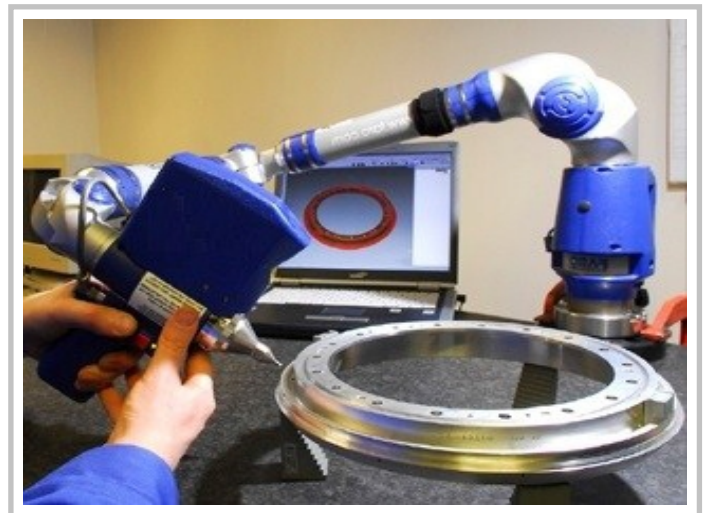
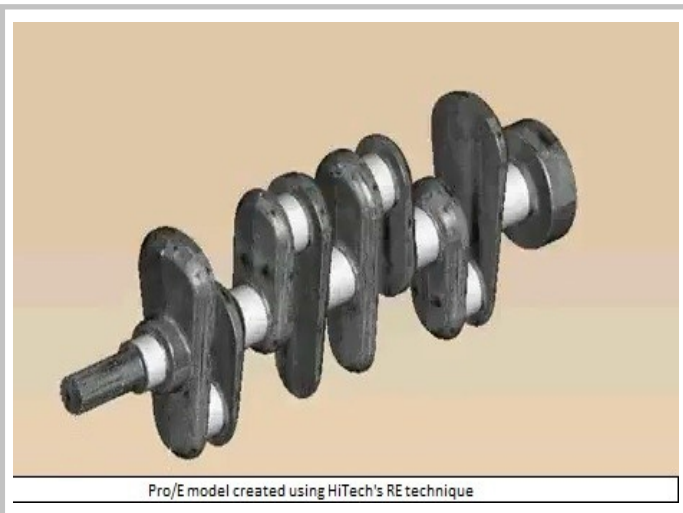
Client Profile

- The Client is one of the leading manufacturers & suppliers of automotive components.
- It's customer base comprises of several major automotive companies across the globe.

Technology Platform

**Pro/Engineer
5.0**

Pro/E modelling coupled with scanning techniques helped to reverse engineer crank-shaft design.



Challenges

- The client was facing a challenge of providing a crankshaft to one of its clients, for which the inventory had exhausted & no more production was carried out by the OEM.
- The original design of the crankshaft was not available .
- In order to complete the engine assembly it was required to reproduce the original design of the crankshaft using reverse engineering techniques.

Engineering Solution

- The problem was dealt with Hi-Tech's three step process of Reverse Engineering-. Data digitization-Data Integration –3D CAD modeling
- To accurately reproduce the design of the crankshaft, firstly all the dimensions were digitized using manual, Laser Scanning & CMM measurement techniques.

- The point cloud data thus captured was converted into polylines & this data was then imported to Pro/E.
- With the data, a Pro/E model was created which was used to carry out further analysis of the design & create production ready drawings once the necessary modification were carried out.

Advantages

- The Reverse Engineering techniques using CAD/CAM enabled the client to accurately recreate the design of the required part for which inventory had exhausted .
- This technique augmented the production process by producing production ready drawings.
- Certain design modifications as per the requirement could be made to make the design more robust.

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.