

Case Study | Industrial Heavy Machinery

# NEW PRODUCT DEVELOPMENT – TELEHANDLERS

TATA TECHNOLOGIES HAS BEEN WORKING WITH THE CLIENT FOR MULTIPLE YEARS ON DEVELOPING NEW PRODUCTS, USING AN ASSORTMENT OF SOFTWARE AND A PTC® WINDCHILL® 10.2 PDM INTERFACE.

## THE CHALLENGE

- Developing three new high lift capacity telehandlers.
- Defining the overall vehicle requirements including dimensions and weights, geometry, placement of major components, and concepts for roll over and falling object protective structures.
- Completing package layouts for engine, after treatment system, cooling pack, hood, hydraulic system, electrical system, controls systems, cab, frame, boom, core components and attachments.
- Setting up master models layout in PTC Creo®.
- Setting up cost tracking and updating product cost estimates in tracker files.
- Initiating should-cost analysis of major components.
- Creating an automated dynamic analysis of mechanical systems model for load capacity and machine stability.
- Creating a reliability plan including test plans and failure mode and effects analysis.

## THE COMPANY

The world's leading designer and manufacturer of access equipment. It is headquartered in North America and has multiple facilities worldwide.

## THE SOLUTION

- Selected and placed orders for long lead time components such as engines, pumps, motors, hydraulic valves, cylinders, axles and castings.
- Created new and revised 3D design data and 2D drawings required for the new design.
- Completed of structural finite element analysis (FEA).
- Completed detailed bills of materials (BOM) at multiple levels and performed a BOM audit.
- Provided all calculations for components and systems designed.
- Completed CAD drawings in PTC Creo format in compliance with the companies' standards.
- Validated of raw material fitness prior to build.
- Provided build information such as torques, types of locite, orientation of fittings and types of grease.
- Supported prototype building and verified that parts complied with the documentation released.
- Developed maintenance manuals, technical books, and electrical and hydraulic layouts and diagrams.
- Optimized manufacturability and cost of frames by changing structural profiles to bended plates.
- Completed boundary diagram, interface analysis and design failure mode and effect analysis (DFMEA).

## THE RESULT



Filled telehandler capability gap in high margin market



Product cost within target



Best-in-class boom controllability



Onsite prototype support



Reduction in project timelines

## ABOUT US

Tata Technologies is a global engineering and product development IT services company that is focused on fulfilling its mission of helping the world drive, fly, build and farm by enabling manufacturing companies across the automotive, aerospace and industrial heavy machinery verticals realize better products and drive efficiencies in their businesses. There are two components to our value proposition – managing and delivering outsourced engineering services and products for our manufacturing clients, and helping them identify and deploy technologies that are used to conceptualize, design, validate, build, test, benchmark and realize better products. For more information, visit [www.tatatechnologies.com](http://www.tatatechnologies.com).