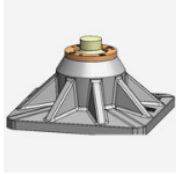


PROVIDED EXCEPTIONAL ENGINEERING SUPPORT SERVICES TO A US RENEWABLE ENERGY PRODUCT'S SUPPLIER & REDUCED 50% COSTS



Read this case study to find out how we provided accurate 2D manufacturing drawings and 3D models, while also conducting stress analysis for a prototype hub crane as a part of our engineering support services, and enabled the client to save 50% costs.

The Client

Our client is a leading Renewable Energy Product Development provider in US. He provides comprehensive services for supporting, developing &

maintaining the long-term operation of solar and wind energy parts.

The Requirement

The client had expressed requirement for engineering support services for Detailing, Drafting, 3D Modeling and Finite Element Analysis, and was on the lookout for an offshore partner with the relevant expertise to perform the same.

The client was in need of expert fabrication drawings and stress analysis, which were to be performed on a prototype hub crane (industry standard lifting tool, and calculate the working load limit so as to determine the maximum load that could be exerted on the crane.

Client reviewed our domain expertise, and got in touch with us for his project.

The Challenge

During the course of the project, we faced certain challenges -

- + The client required the stress on lifting tool to be max at 83.3N/mm²
- + The client provided us only with rough conceptual sketches and dimensional details. The required output was in the form of 2D manufacturing drawings, comprehensive stress analysis reports and 3D models
- + We had to employ professionals with an expertise in SolidWorks 2012 and ANSYS; to develop high quality manufacturing drawings, 3D models and stress analysis reports
- + We had to ensure that the stress analysis conducted using ANSYS matched the client's specifications perfectly
- + The entire project was to be completed with stringent quality procedures so as to meet the client's expectations

The Solution

Our solution for the client involved the following steps -

- + All manufacturing drawings and 3D models were developed using SolidWorks 2012, including 2D fabrication drawings and 3D models of the hub crane
- + All 2D drawings and 3D models were sent to the client for approval. We proceeded with stress analysis only after the drawings were validated by the client
- + Several technical processes are involved in carrying out a proper stress analysis. We selected a team of engineers proficient in using ANSYS to conduct the same
- + Stress Analysis report deviated from the expected benchmark, and therefore client suggested us to redesign the tool model. We had to ensure that the maximum stress on the crane was less than 33% of the yield stress, based on the loading conditions provided to us by the client
- + Before performing the second stress analysis on the redesigned lifting tool model, we added welded reinforcement plates around the welded joints
- + The second stress analysis met the client's stress requirement of 83.3 N/mm², with considerable success

The Results

Owing to our successful project performance, the client was able to benefit from the following -

- + A cost saving of up to 50%
- + The client was able to leverage the exceptional core competencies of our staff for better results within short turnaround times

Outsource Cost-effective Engineering Support Services to Flatworld Solutions

Do you have a requirement for Engineering Support Services but cannot find the perfect outsourcing partner? Do you have a specific [civil engineering service](#) request? Are you looking for a cost-efficient solution for the same?

If yes, then Flatworld Solutions is the best place for efficient, high-quality engineering services. [Read more case studies](#) here to find out how we have had a positive impact on global businesses.