

CYIENT

THE FIRST DETACHABLE GOOSENECK TRAILER DEVELOPED FOR HAULING EQUIPMENT PROVIDER

Cyient's end-to-end design and engineering solution enabled our client to add a 175 ton mining trailer to its product line



Overview

Our client is a leading provider of specialty haulage solutions for the construction and mining industries. They required a new top-down design of a detachable gooseneck equipment trailer that is pulled behind a retrofitted mining truck. Design requirements included the ability to haul multiple equipment types with varied footprints as well as extreme loads typically associated with mining equipment. However, with limiting design factors, including the amount of load the trailer could handle, weight optimization was critical to reducing material costs.

Our Solution

- Worked closely with our client to define requirements of trailer
- Developed gooseneck, deck frame and rear axle systems
- Created advanced mechanisms for trailer loading and unloading operations, including a detachable gooseneck system
- Validated all structures independently as well as system wide with finite element analysis (FEA) verification
- Developed pneumatic, hydraulic, and auto-greasing systems for all trailer operations
- Created electrical harness and diagrams for all trailer lighting and control systems
- Packaged hydraulic power unit and all necessary components inside the rear axle with a focus on durability in harsh mining environments
- Produced detailed drawings for all mechanical, pneumatic, hydraulic, and greasing systems using templates provided by the client

Key Business Benefits

- Executed full new product introduction (NPI) engineering efforts for a machine that was not currently in the client's product line
- Enabled the client to deliver structure designs that could be executed in-house, resulting in streamlining operations and reducing overall project costs
- Provided project management of mechanical, electrical and hydraulic engineering efforts, both onshore and offshore, to bring a new product to market in approximately one year
- Developed linkage mechanisms for the detachable gooseneck and gooseneck kickstand, which included motion studies, FEA, design-for-manufacturing studies, and the creation of mechanism videos for an end-customer display
- Worked directly with component and system suppliers for lighting, cameras, and hydraulics to ensure consistent design and interoperability on the first build

About Cyient

Cyient (Estd: 1991, NSE:CYIENT) provides engineering, manufacturing, geospatial, network and operations management services to global industry leaders. We leverage the power of digital technology and advanced analytics capabilities, along with domain knowledge and technical expertise, to solve complex business problems. As a Design, Build and Maintain partner, we take solution ownership across the value chain to help our clients focus on their core, innovate, and stay ahead of the curve.

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