

CLASSIC AUTOMOTIVE INDUSTRIES PVT. LTD.

ACCELERATING HYDRAULIC MACHINE DEVELOPMENT
WITH SOLIDWORKS PREMIUM



By moving from 2D to SOLIDWORKS Premium 3D design software to develop hydraulic equipment and machinery, Classic Automotive Industries has shortened design cycles, increased profits, and improved customer satisfaction.

Challenge:

Streamline the development of hydraulic equipment and machinery to shorten delivery times and increase profit.

Solution:

Implement SOLIDWORKS Premium design software to accelerate large assembly and machine design.

Benefits:

- Shortened design cycles by more than 30 percent
- Reduced design change time by 90 percent
- Cut scrap and rework by 20 percent
- Improved customer satisfaction

Classic Automotive Industries Pvt. Ltd. manufactures the Arco Whitney brand of hydraulic equipment and machinery in India. The company's products include bus bar shearing, punching, bending, and notching machines; angle/channel shearing, punching, and notching machines; special-purpose presses; portable hydraulic equipment; and associated power pack systems. Arco Whitney machines are used to manufacture steel structures, ships, oil rigs, transmission towers, control bars, and cable systems, as well as for bus bar, metal rolling mill, and extruding mill fabrication.

Until 2008, the company utilized AutoCAD® 2D design tools to design, manufacture, and assemble its machines. As business volume and machine complexity continued to grow, Classic Automotive Industries began investigating 3D development tools to accelerate development, expand throughput, and increase profit, according to CEO Sanjay Jadhav.

"With 2D, every time a problem arose in production that required the rejection of parts and rework, we were losing money," Jadhav recalls. "We believed that a 3D development platform would help us shorten design cycles and ramp up machine complexity while improving accuracy and eliminating unnecessary costs."

The machine manufacturer conducted a thorough evaluation of leading 3D design packages and ranked them according to ease of use, cost versus value, design focus, shortness of learning curve, performance, flexibility, and ease of verification and communication. The results of this evaluation rated SOLIDWORKS® design software as the most suitable solution, and Classic Automotive Industries implemented SOLIDWORKS Premium design and analysis software.

"Our assessment of 3D packages rated SOLIDWORKS as the best product development tool for our operations," Jadhav stresses. "That evaluation has proven to be accurate because SOLIDWORKS is playing a major role in helping us minimize validation time during the design of our machine components, contributing to a drastic reduction in machine development lead-times."

SHORTER DESIGN CYCLES, FASTER DESIGN CHANGES

Since implementing SOLIDWORKS Premium software, Classic Automotive Industries has realized dramatic productivity improvements, cutting design cycles by more than 30 percent and reducing the time required to make design changes by 90 percent. Jadhav attributes these efficiency gains to faster modeling and drawing production in 3D, more accurate and reliable large assembly performance, and the automated creation of modular design variations using configurations.

"In 2D, we couldn't visualize all the parts within an assembly," Jadhav notes. "Using SOLIDWORKS, we can visualize assembly behavior, using the software's dynamic assembly motion capabilities, and simulate machine performance, using integrated finite element analysis [FEA] tools. With SOLIDWORKS, we can check for collisions and interferences—as well as misaligned holes and features—during the design of our machines. Then, we can validate designs using physical simulation.

"Not only are we faster, allowing us to create proposals and complete designs more quickly. We are also more accurate," Jadhav continues. "SOLIDWORKS is directly saving us time and money, and is helping us expand through the development of new products."



"The reduction in rework afforded by SOLIDWORKS software has eliminated unnecessary costs and increased profits. With SOLIDWORKS software, we are faster, more accurate, and more cost-effective, and our move to 3D has improved customer satisfaction and confidence in our machines."

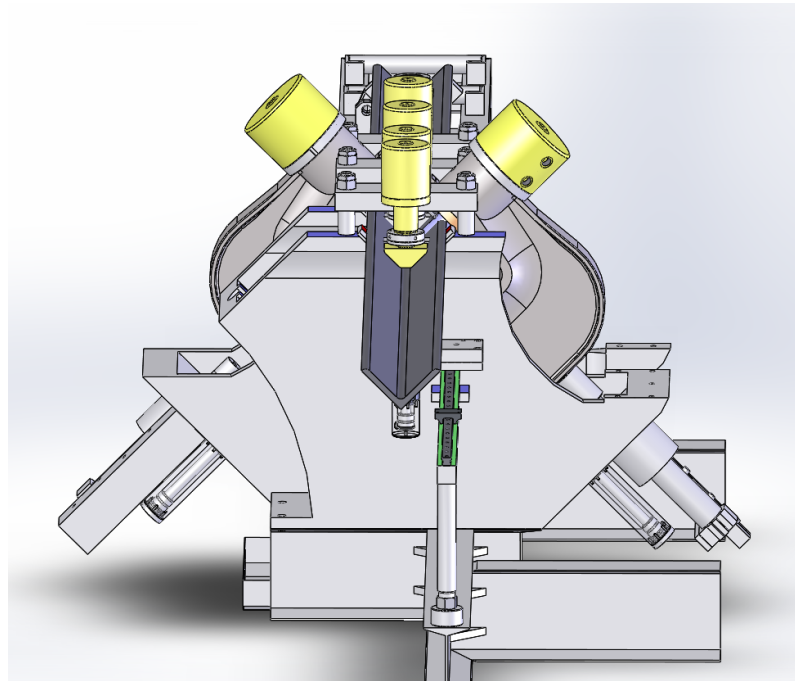
— Sanjay Jadhav, CEO



SIMULATION IMPROVES PERFORMANCE

In addition to supporting faster modeling and improved visualization, SOLIDWORKS lets Classic Automotive Industries take advantage of integrated structural analysis capabilities, resulting in improved machine performance and material savings. For example, a punching operation on one of the company's machines requires a subassembly to deflect slightly. However, if the subassembly deflects too much, it can impede the next operation and cause undue wear. Using SOLIDWORKS Premium, Classic Automotive Industries performs deflection analyses to ensure proper performance.

"We use SOLIDWORKS Premium simulation tools to conduct deflection analyses as we design," Jadhav explains. "On one particular machine, we want a subassembly of 10 to 15 parts to deflect a little but not too much. Instead of making a physical prototype and testing these parts, we can use SOLIDWORKS to minimize deflection in this case and eliminate it in instances that require no deflection. We now simulate the performance of each and every part prior to production, which verifies machine performance without creating costly prototypes."



Using the integrated structural analysis capabilities of SOLIDWORKS Premium design and analysis software, Classic Automotive Industries performs stress and deflection analyses, resulting in improved machine performance and material savings.

BOOSTING PROFITS WHILE IMPROVING CUSTOMER SATISFACTION

By moving to SOLIDWORKS Premium 3D software, Classic Automotive Industries has also reduced production rework. The improved design visualization and validation of machine designs provided by SOLIDWORKS has resulted in a 20 percent reduction in rework—as well as associated scrap—because there are fewer surprises on the shop floor.

“The reduction in rework afforded by SOLIDWORKS has eliminated unnecessary costs and increased profits,” Jadhav says. “With SOLIDWORKS, we are faster, more accurate, and more cost-effective, and our move to 3D has improved customer satisfaction and confidence in our machines.”

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