

DEMECH ESSCANO POWER INDIA PVT. LTD.

Unleashing productivity in industrial damper design with SolidWorks solutions



SolidWorks has helped DEMECH in quickly responding to the demands for complex dampers with its ease of use and automated design.

The need to restrict gases and liquids makes industrial dampers a necessity in many factories and plants, including power plants, steel mills, cement plants, petrochemical facilities, and other process-related operations. Fulfilling the challenging requirements for damper technology led to the formation of DEMECH Esscano Power India Pvt. Ltd. (DEP), a joint venture of Esscano Power A/S Denmark and Deccan Mechanical & Chemical Industries Pvt. Ltd. (DEMECH) in India.

DEP designs and manufactures many types of industrial dampers, including multilouver dampers, butterfly dampers, sliding dampers, and other variants. By combining Esscano Power's expertise in shaft-sealing arrangement design with DEMECH's quality product manufacturing capabilities, the company has quickly attained a prominent role in the industrial damper market, introducing new concepts that offer performance and cost advantages.

From the company's beginning, management realized it would need a parametric 3D design system to support design automation, checking, and validation needs. "The requirement for 3D was driven by our customers," explains Swapnil Yele, Executive, Design & Engineering Costing. "The first order that we received required parametric design because we needed to release layout and detailed fabrication drawings for 44 different damper varieties quickly. We had to submit the general arrangement layout within a short time of receiving the order, and then deliver all 44 dampers in just three months. That was a daunting challenge for which we needed 3D."

DEP evaluated Solid Edge® and SolidWorks® 3D design solutions. According to General Manager Subhash Bidwai, DEP chose SolidWorks because its solutions are easy to learn and use, include integrated design validation and eDrawings® communications tools, and are supported by a reseller with a proven record of success: Pelf Infotech. After first implementing SolidWorks Professional design software, DEP added SolidWorks Simulation Premium advanced analysis and SolidWorks Flow Simulation computational fluid dynamics (CFD) analysis software.

Challenge:

Accelerate the development of design and production layouts by increasing design automation and by leveraging design simulation technologies.

Solution:

Implement SolidWorks Professional design, SolidWorks Simulation Premium advanced analysis, and SolidWorks Flow Simulation computational fluid dynamics (CFD) analysis software.

Results:

- Reduced production layout time from three days to a few hours
- Eliminated prototypes using thermal expansion analysis
- Increased design automation
- Realized repeat business

“Although DEMECH has operated for more than 30 years, manufacturing industrial dampers is new,” Bidwai says. “Considering the cutthroat nature of our competition, we needed design software that not only helps us design faster but can also allow my design engineers to validate the strength of our damper mechanism upfront, enabling us to lower design costs. We found that software in SolidWorks.”

Configurations increase automation

By implementing SolidWorks solutions, DEP has realized benefits that increase design automation. Detecting interferences, gaps, and clearances within complex assemblies; customizing the SolidWorks Toolbox to support DEP standards for components; and incorporating design configurations all serve to boost automation and shorten design time. “With the automation that we have achieved with SolidWorks, we deliver production and layout drawings to the customer within hours,” Bidwai notes. “Using 2D, that step would take us at least three days.”

“The ability to automate the generation of new designs and drawings using Microsoft® Excel-driven design tables is phenomenal,” adds Design Engineer Vinod Biradar. “With the help of configurations and the SolidWorks auto-dimensioning scheme—and all of the capabilities for adding different views, annotations, and the correct BOM (bill of materials)—we can more quickly release error-free drawings for production.”

Validation eliminates prototypes

Using SolidWorks Simulation Premium and SolidWorks Flow Simulation software, DEP has eliminated the need to prototype and test its systems. The company relies on SolidWorks simulation tools to support its goal of producing dampers that are 99.95 to 100 percent efficient.

“We started using SolidWorks simulation for calculating thermal expansion of the blades while working under extremely high temperatures,” Bidwai stresses. “We need to provide adequate clearances to account for this expansion while still preventing leaks that hamper efficiency. With the accurate simulations provided by SolidWorks, there’s really no need to build a prototype and test.”

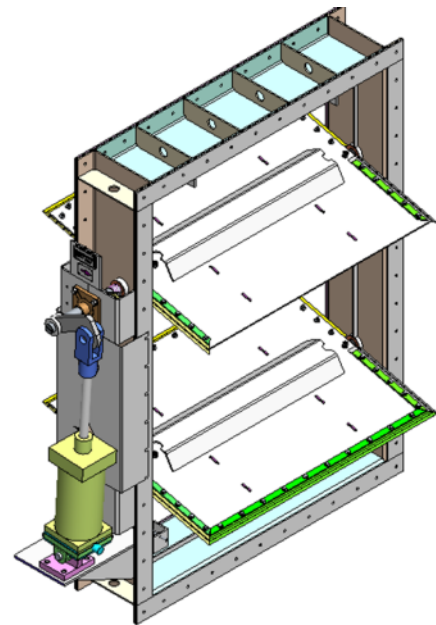
Delivering better designs faster equals more business

SolidWorks solutions have helped DEP quickly become a major player in the industrial damper market. With customers like Thermax, M.E. Energy, and Ansoldo, the company’s consistent record of timely, quality delivery has enabled DEP to successfully enter and thrive in a highly competitive industry.

“The first project that we completed in SolidWorks was the design of multilouver dampers for M.E. Energy,” Bidwai recalls. “By the time that we had successfully completed that first order, we had received repeat business from the same customer. In just the first year of our SolidWorks implementation, we have completed more than 100 different damper designs and released fabrication drawings. With SolidWorks, we have realized the design automation, productivity, and efficiency that we need to grow our business.”

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Subhash Bidwai
General Manager



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