CATIA lifts sheet metal design to the next level for material handling company

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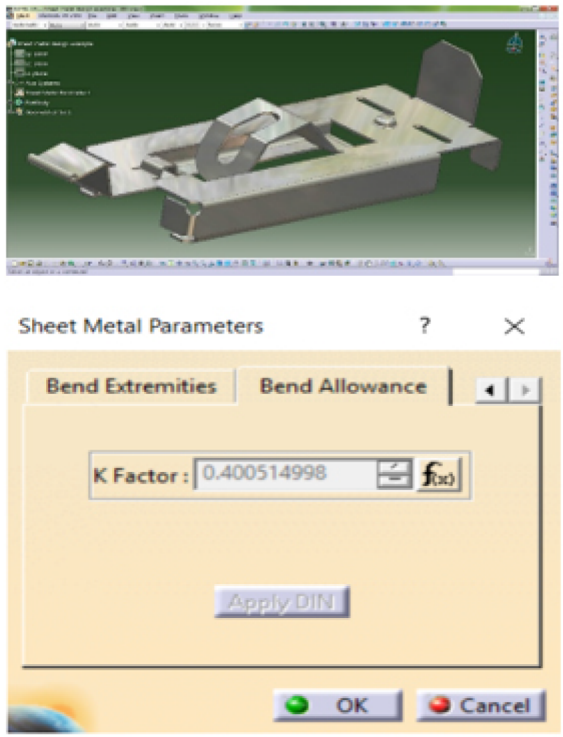
Challenge

Puma Lift Trucks Pvt Ltd. an India-based company for the past 25 years has been using hand drawings and 2D design software as a design platform. It required a sophisticated 3D design platform to handle the product development of its various models of equipment and bring together its designers in one place to collaborate effectively, validate prototypes, and innovate.

The company was involved predominantly in sheet metal manufacturing processes. The design process using 2D Design software was very tedious since there were no special designing tools available for sheet metal operations. The company was looking for exclusive design software with sheet metal operations capabilities.

Solution

The company is using the Dassault Systems CATIA V5 (XM2 License) platform to design and produce its prototypes and launch variant models of equipment, create a virtual experience, and connect its engineers together on a single platform. With the CATIA V5 XM2 License, there is a specialized workbench for sheet metal operations. This workbench includes most of the standard sheet metal operation tools such as Hem, Teardrop, Louver, etc., and parameters like bend allowance and bend extremities can be defined.



Bend allowance has a K factor, physically, the neutral fiber represents the limit between the material-compressed area inside the bend and the extended area outside the bend. This formula can be deactivated or modified by right-clicking in the K factor field and choosing an option from the contextual menu. It can be reactivated by clicking the Apply DIN button. Moreover, the limit values can also be modified.

As an organization, they are committed to striving & to achieve the utmost customer satisfaction by supplying Quality products at the right time and providing excellent Sales and service support. Uncompromising accuracy and functionality of their products are their standards for better quality, capacity, and safety are also the best possible support for the entire workflow of the projects. They have a wide range of products such as lift trucks, tables, levellers, and pickers.

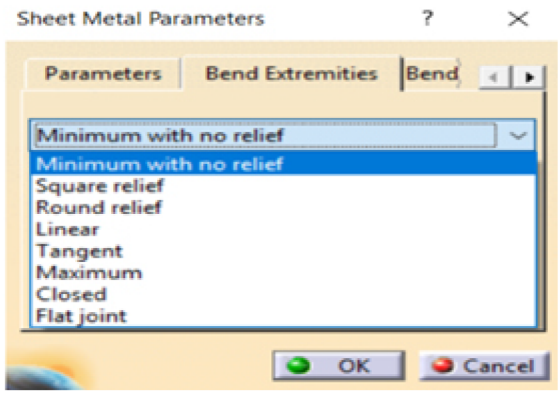
CATIA V5 provides a fully scalable platform for collaborative product creation and product data management. CATIA V5 breakthrough architecture delivers advanced design control for state-of-the-art engineering.

Many of their products had multiple similar parts in the assemblies. Instead of re-designing similar parts, with the help of the “Design Table” concept available within the CATIA V5 platform, they were able to create variants

of a single part by just modifying the multiple parameters in a simple Excel sheet. This helped them to save a significant amount of time in re-designing similar 3D parts and avoid repetitive design tasks.

With the availability of standard mechanical parts (C-Class components) in the form of catalog (components from reputed OEMs) within the CATIA V5 platform, the designers just need to pick and place the components into their product design from the catalog library.

Altem Technologies Pvt Ltd as a partner of Dassault Systems India Pvt Ltd, extends its support for troubleshooting and connectivity issues for Puma Lift Trucks Pvt Ltd with the guidance of the Dassault Bangalore team. The quick assistance from Dassault Systems India helps customers to work smoothly and increase productivity.



Benefits

The sheet metal design workbench in CATIA V5 software is a specialized tool that is used for designing and modeling sheet metal parts. It allows designers to create complex and accurate sheet metal parts with ease, using a variety of tools and techniques to achieve their desired results.

THE CATIA sheet metal platform acts as a springboard for the organization to grow its business and accelerate product development. Designers and engineers have access to industry-standard design tools and can collaborate in real time to define requirements and ensure full traceability from initial concept to manufacturing. Developing a virtual experience of the product is helping to speed up production while allowing the company to present its vision to investors and customers before the final physical version exists.

With the standard sheet metal operations present in the CATIA V5 software, the design time has been reduced significantly and the communication with the manufacturing team is seamless. With the option of setting “Sheetmetal Order Process”, they can virtually set the order process before sharing it with the manufacturing team.

CATIA Sheet metal design offers associative and dedicated sheet metal feature-based modeling, concurrent engineering between the unfolded or folded part representation, access to company-defined standards tables, and dedicated drawing capability including unfolded view and specific settings. In addition to unfolding sheet metal parts, the sheet metal design workbench can also be used to flatten them back out again. This is useful for creating accurate 2D drawings of sheet metal parts. New functionalities like local fold and unfold of bends, overlap detection, mirror option for any sheet metal feature, duplicating a sheet metal feature symmetrically, a hybrid design where wireframe and surface features can be created within the same solid body which impacts the behaviour of overlapping and local fold/unfold of bends.

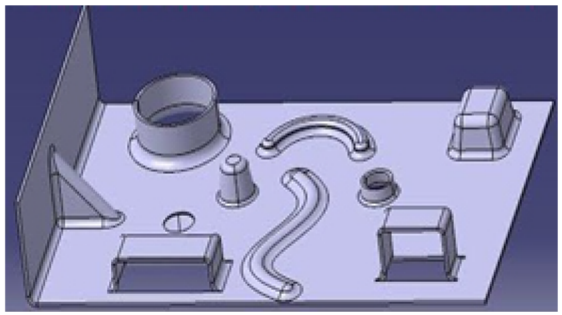
“CATIA is the worldwide standard in Product Design,” said Mr. Prasad (Managing Director).

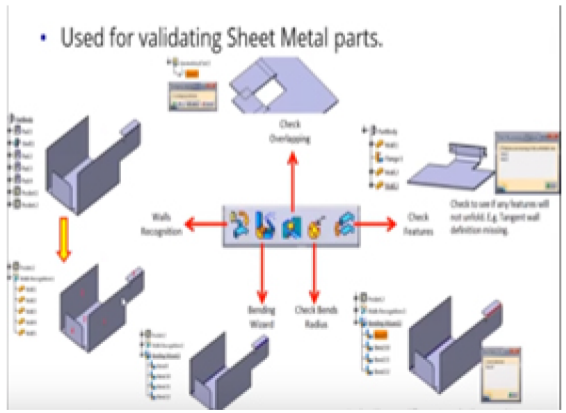
Mr. Prasad also added that “CATIA XM2 is ideal for an MSME registered company like us to benefit from the same solution that bigger players in our industry are used to working with. It allowed the team to start immediately, without the need to equip the company with an expensive IT infrastructure and be flexible to change the structure of the applications according to our changing needs. We like that everybody can securely work on the platform, share data, and have data versioning under control.”

All sheet metal specifications can be re-used by the Knowledge Advisor workbench to capture corporate knowledge and increase the quality of designs. As a scalable product, Generative Sheetmetal Design can be

used in cooperation with other current or future companion products in CATIA V5 such as Assembly Design and Generative Drafting.

Multiple variants of a model can be created without the need to redesign all the assembly parts. Similar parts with different parameters can be created by just integrating Microsoft Excel and the CATIA V5 platform.





Backed by CATIA V5 software with XM2 license, their company is in the best position to accelerate the product development of their equipment and gain an advantage by being the first to market this concept.

“With our previous tools we got into a situation where it wasn’t possible to model our equipment with the quality and precision we needed,” said Mr. Prasad (Managing Director). “Now we can achieve that and bring together the entire team on the platform to validate each prototype.

This is important as every individual provides input from their area of expertise. We also want to think like future customers and share their thoughts from a user perspective to ensure we deliver the best possible

experience.”

About Puma Lift

Puma Lift Trucks Pvt Ltd is one of the leading manufacturers of In-Plant Material Handling Equipments in India.

By the proposition and administration of Mr. A. Prasad driven by his vision and hands-on experience in the industry “PUMA LIFT TRUCKS PVT LTD” was established in the year 1992 in Bangalore with the manufacturing of Manual Pallet Trucks & today the company boosts the best manufacturing unit with a marketing network widely spread over in almost all the business sectors in India. The Customers can analyze their increasing proficiency with their team of experts who collaborate perfectly to meet the highest standards.

Today the company manufactures a complete range of In-Plant Material Handling Equipments. They have a large and satisfied client from various sectors viz., Automobile, Pharmaceutical, Engineering, Food Industry, Information Technology, Printing & Packaging, Transport, Tannery and Chemical, etc.

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About Altem Technologies Pvt. Ltd

Altem Technologies is a well-established 3D digital experience company that has been actively contributing to the industry for nearly 15 years. Initially rooted in PLM software and 3D Printing (representing Dassault Systemes India Pvt Ltd and Stratasys India respectively), Altem has successfully transformed into a prominent provider of comprehensive 3D digital solutions. Altem's 3D Innovation platform offers an extensive array of products catering to various applications, including design, reverse engineering process, asset digitization, prototype manufacturing, life science, healthcare, culture and heritage, and consultancy services, among others. Altem with a diverse clientele spanning automotive, aerospace, manufacturing, healthcare, research academia, and more, Altem adeptly addresses the unique requirements of each industry through a combination of expertise and innovation. Our team comprises skilled professionals, including Scientists, Application Engineers, Designers, domain experts, and software specialists, all working collectively to deliver exceptional solutions to our valued customers.

Altem Technologies Pvt Ltd, besides being a major provider of 3D Scanning services in India, is also a leading provider of 3D Printing Services in India with 3D Printing technologies like FDM, Polyjet, DLP, Metal, etc. Altem offers a complete solution around 3D Digitization and Innovation and has emerged as a one-stop-shop for all 3D Printing, 3D Scanning, CAE, PLM, and Life Science needs, offering a wide spectrum of products for engineering and life sciences companies in India

Get in touch.

https://altem.com/contact/

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