

DAB MOTORS INNOVATING FULLY CONFIGURABLE, HAND-BUILT, BESPOKE MOTORCYCLES WITH SOLIDWORKS SOLUTIONS

Case Study



Using SOLIDWORKS 3D design and visualization solutions, Dab Motors has reinvented the concept of the bespoke motorcycle, introducing the LM-S, a motorcycle with more than a million possible combinations of options that can be totally configured and ordered online.

Challenge:

Quickly develop innovative, fully configurable, high-end motorcycle designs for configuring and purchasing distinct models online.

Solution:

Implement SOLIDWORKS Professional design and SOLIDWORKS Visualize Professional photorealistic rendering software solutions.

Results:

- Designed, manufactured, and certified motorcycle in less than a year
- Leveraged 3D printing for rapid prototyping and production
- Reduced prototyping costs dramatically
- Supported over a million possible motorcycle configurations

Dab Motors is reinventing the concept of the bespoke motorcycle, emphasizing style, aesthetics, individuality, and a large number of customer options. Founded in 2017 by CEO Simon Dabadie to create custom, high-end motorcycle designs, the French company introduced the LM-S, a motorcycle with more than a million possible combinations of options. Customers can choose the specific set of options for the motorcycle that they want using the firm's online configurator, enabling them to create their own individual, one-of-a-kind motorcycle designs for production. With Dab Motors, customers not only receive a unique, hand-built bike, they become a part of the process: playing with the configurator, establishing a close relationship with Dab designers and engineers, and even visiting the Basque country to meet the DAB team and ride their one-of-a-kind LM-S motorcycle once the bike is complete. The price for a uniquely configured LM-S is 16,900 euros for a European Union (EU) resident (VAT included) or 14,100 euros for a non-EU resident.

With its mission of reaching the next generation of motorcycle enthusiasts, Dab Motors is committed to leveraging technology to provide customers with the widest set of options and the greatest potential for customization. Inspired by urban, enduro, and supermoto motorcycles, the LM-S is a minimalist motorcycle design that represents the simplicity and essence of what today's motorcycle aficionados want. Offering an attractive silhouette, lightweight performance, a playful engine, and high-end equipment, the LM-S provides motorcyclists who are passionate about custom bikes with the ultimate customization and personalization experience.

"We are convinced that individuality is the fundamental value of motorcycling," Dabadie says. "Our experience has shown that what motorcycle riders care the most about is the feeling of individuality that a motorcycle provides. Our challenge was to leverage design and web technologies to create a motorcycle design and range of options that extend

this feeling of individuality to the motorcycle's specific design configuration and style."

While Dab Motors decided to develop its own online configurator, the company needed to tap advanced design and visualization tools to develop the designs, models, and feature options that drive the configurator. Because Dabadie had worked as an engineer at Dassault Systèmes, in the company's CATIA® division, he was well aware of the best 3D design and visualization solutions to meet his company's needs.

"I'm an engineer, so I've been working with CAD tools since the beginning of my career," Dabadie says. "We chose SOLIDWORKS® Professional design and SOLIDWORKS Visualize Professional photorealistic rendering software because the programs are easy to use, are well known, and provide the design and visualization capabilities that we need at the best price. In short, SOLIDWORKS gives us the most value in our development environment."



"As a small startup company, we have limited resources on which to draw and need to pursue the most cost-effective means for achieving our goals. The ability to use SOLIDWORKS Professional software and our 3D printer for rapid prototyping, and to drive design iterations, saved us thousands of euros in prototyping costs and was critically important to our fast development approach and business success."

— Simon Dabadie, CEO

RAPID DEVELOPMENT AND CERTIFICATION

Using SOLIDWORKS Professional design software, Dabadie and Engineer Pierre Jayet created the design for the LM-S, developed more than a million option combinations, and achieved the required motorcycle certifications from the European Union—all within one year—despite facing notable challenges. "With the LM-S, we are manufacturing something that no one has ever seen before, which creates challenges in the production and certification processes," Dabadie explains.

"Our manufacturing philosophy is not conventional," Dabadie continues. "We want to hand-build a limited number of bikes that are all variations on a central theme rather than build many of the same model. It would have been impossible to do what we did in terms of designing, prototyping, building, testing, and certifying the bike in one year without SOLIDWORKS design and visualization tools. It was faster

and easier to complete design iterations with SOLIDWORKS, while still maintaining the high quality and performance necessary to satisfy EU certification requirements.”

LEVERAGING 3D PRINTING AND PROTOTYPING

Dab Motors saved additional time and money during the development of the LM-S by using its Ultimaker® 3D printer to quickly create and test prototypes instead of employing traditional prototyping techniques. “We are designing the parts on SOLIDWORKS and almost instantaneously creating prototypes, helping us reduce prototyping costs and accelerate development dramatically,” Dabadie explains. “We also receive special demands on our motorcycles, and we are able to create special parts for each customer due to 3D printing. We design the parts and molds in SOLIDWORKS, then 3D print the molds, which we use for composite fiber molding.

“As a small startup company, we have limited resources on which to draw and need to pursue the most cost-effective means for achieving our goals,” Dabadie points out. “The ability to use SOLIDWORKS Professional software and our 3D printer for rapid prototyping, and to drive design iterations, saved us thousands of euros in prototyping costs and was critically important to our fast development approach and business success.”

VISUALIZING DESIGNS, CONFIGURATIONS

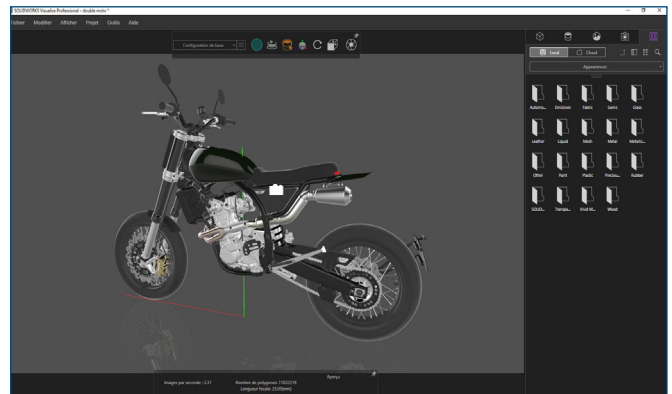
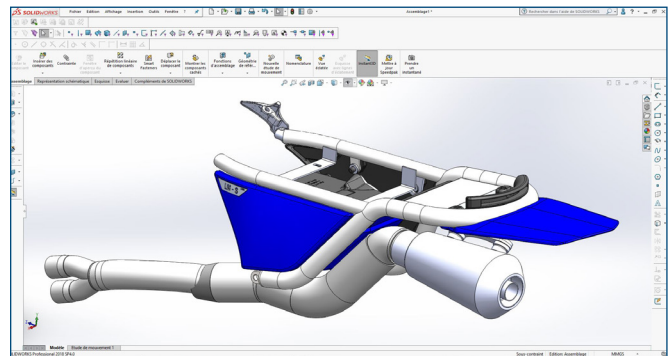
In addition to using the combination of SOLIDWORKS Professional software and 3D printing for prototyping, Dab Motors leveraged SOLIDWORKS Visualize Professional photorealistic rendering software to check and refine design aesthetics on the base LM-S design and its large number of options. “We need to see how our designs will realistically look without having to make or print every part,” Dabadie notes.

“With SOLIDWORKS Visualize Professional software, we produce renderings that provide snapshots of the bike or features as they will ultimately look in reality,” Dabadie adds. “We’re selling high-end, custom bikes that are as much works of art as they are functional conveyances. Being able to see the color schemes and the textures of various components and systems as the design advanced helped us create an individual motorcycle like no other.”

Focus on Dab Motors
VAR: CADvision, Toulouse, France

Headquarters: Technocité Innovation Center
9 Rue Pierre Georges Latécoère
64100 Bayonne
France
Phone: +33 633 149 665

For more information
www.dabmotors.com



With SOLIDWORKS design and rendering tools, Dab Motors was able to develop all of the possible options for the LM-S motorcycle—leveraging 3D printing for prototyping and photorealistic rendering for product visuals—all within one year.

Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes’ collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 250,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.



3DEXPERIENCE®

©2020 Dassault Systèmes. All rights reserved. 3DEXPERIENCE®, the Compass icon, the 3DS logo, CATIA, SOLIDWORKS, ENOVIA, DELMIA, SIMULIA, GEVOIA, EXALEAD, 3D VIA, NETVIBES, IPWE and 3DEXPTE are commercial trademarks or registered trademarks of Dassault Systèmes, a French “société européenne” (Versailles Commercial Register # B 322 305 440), or its subsidiaries in the United States and/or other countries. All other trademarks are owned by their respective owners. Use of any Dassault Systèmes or its subsidiaries trademarks is subject to their express written approval. MKHIDCSBNG0320