

VECO B.V. ACCELERATING ELECTROFORM MANUFACTURING SYSTEMS DEVELOPMENT WITH SOLIDWORKS MBD SOFTWARE



Veco B.V., a global leader in the micro-fabrication of high-precision metal parts, added SOLIDWORKS® Model-Based Definition (MBD) software to its SOLIDWORKS Professional design installation to organize and present production manufacturing information and geometric dimensioning and tolerancing information in 3D digital format, cutting time and errors in the process.

Challenge:

Streamline the production of components for electroforming manufacturing systems to save time, control costs, and improve quality.

Solution:

Add SOLIDWORKS Model-Based Definition (MBD) software to its SOLIDWORKS installation.

Results:

- Cut component production time in half
- Published PMI information in 10 minutes instead of one day
- Decreased errors related to drawing-interpretation mistakes
- Eliminated need internally to print paper drawings

The world leader in electroforming, chemical-etching, and laser-cutting technologies, Veco B.V. helps customers solve design challenges by pushing the boundaries of what is possible through the micro-fabrication of high-precision metal parts. Veco applies electroforming and photo-etching technologies on an industrial scale to satisfy the requirements of its international customer base in the inkjet printing, semiconductor, health care, food, and automotive industries. The company is headquartered in Eerbeek, the Netherlands, and operates production facilities there, as well as in; Weymouth, United Kingdom, and Charlotte, N.C.

The company works with customers to develop the advanced manufacturing systems necessary to produce precision parts that cannot be created using traditional machining. According to Process Engineer Doga Emirdag, who develops electroforming systems at Veco, the company needed to upgrade the way that it communicated with machining vendors and move from paper engineering drawings to digital product manufacturing information (PMI) to save engineering time, reduce lifecycle costs, and improve quality.

"When I joined Veco, the company was primarily using AutoCAD® software to design manufacturing machinery and draft 2D drawings of parts," Emirdag recalls. "I knew that we could better serve our customers by using 3D CAD instead of continuing with 2D tools. However, even though it would be familiar to the existing engineering and technician staff, I knew if we transitioned to the commonly accepted 3D modeling and 2D-generated drawings workflow, we would be spending half of the engineering hours working on the 2D representations; time that could be better spent designing new systems and innovative manufacturing approaches."

After initially trying to use Autodesk® Inventor® design software, which was already available in the company due to an attempt to transition from one Autodesk product to another, Emirdag asked if he could purchase the SOLIDWORKS® 3D development platform instead. "I've used SOLIDWORKS for design since 2008

and knew that the software provided access to a more complete range of integrated solutions that could help us streamline development and production," Emirdag explains.

One of those integrated solutions is SOLIDWORKS Model-Based Definition (MBD) software, which leverages SOLIDWORKS 3D design data to organize and present production manufacturing information (PMI) and geometric dimensioning and tolerancing (GD&T) information in 3D digital format. "After seeing a demo of SOLIDWORKS MBD software by Design Solutions NL, our value-added reseller, I purchased a SOLIDWORKS MBD license key and added it to the SOLIDWORKS Professional deployment that I already had," Emirdag recounts.

"Before hearing about MBD, I had already started using the DimXpert™ tool to pull dimensions on SOLIDWORKS 3D models, which I then sent [the native SOLIDWORKS file] to vendors, instead of relying on drawings," Emirdag adds. "However, I ran into compatibility issues with some vendors not being on the same SOLIDWORKS version, or not using SOLIDWORKS at all. With SOLIDWORKS MBD, it's much easier to publish a 3D PDF, which everyone can open and read."



"I used to spend an entire day creating and updating engineering drawings after changes to the design were made. With SOLIDWORKS MBD software, I can publish information-rich 3D PDFs with all of the information required for manufacturing in about 10 minutes per part."

— Doga Emirdag, Process Engineer

ELIMINATING DRAWING TIME SINK

Since adding SOLIDWORKS MBD software to its SOLIDWORKS Professional installation, Veco has cut the time required to design and manufacture machine components in half. Emirdag attributes these time savings to the complete elimination of 2D drawings and the time required to detail, check, update, and manage them. "Preparing manufacturing drawings is a game you can never win; the speed at which you change your models while developing equipment cannot be kept up with if you need to prepare and publish drawings for every update. It becomes a total waste of time that hampers your ability to make necessary design changes," Emirdag says.

"I used to spend an entire day creating and updating engineering drawings after changes to the design were made," Emirdag continues. "With SOLIDWORKS MBD software, I can publish information-rich 3D PDFs with all of the information required for manufacturing in about 10 minutes per part."

COMMUNICATING PMI WITH 3D PDFS INSTEAD OF DRAWINGS

Because manufacturing partners only need free Adobe® Acrobat® Reader software, which is virtually ubiquitous, to view PMI and GD&T data in 3D, it's much easier and less costly for Veco to communicate production details using SOLIDWORKS MBD model-based definition software. "SOLIDWORKS MBD software not only saves us a lot of time, it's also less costly, since the parts that we receive have fewer mistakes and there is less to misinterpret in 3D PDF files," Emirdag stresses.

"Using drawings, we saw a number of common mistakes, such as missing features or misinterpreted dimensions," Emirdag notes. "Using SOLIDWORKS MBD software, the number of production mistakes has decreased substantially because communication has improved dramatically."

IMPROVED QUALITY, FASTER DEVELOPMENT

In addition to saving time, reducing costs, and minimizing manufacturing errors, SOLIDWORKS MBD software is helping Veco improve quality and focus its resources on faster, more innovative development, which benefits both the precision-parts manufacturer and its customers. "Generally, SOLIDWORKS MBD software is saving time, reducing costs, and improving quality," Emirdag points out.

"But the most important benefit that we've realized is the greater agility that we have in development," Emirdag says. "We need to implement precise solutions quickly to minimize downtime in production because that is the service that we provide to customers, and SOLIDWORKS MBD is helping us achieve this important goal."

Focus on Veco B.V.

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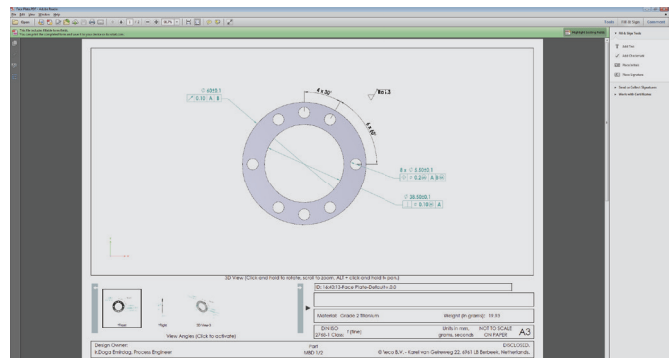
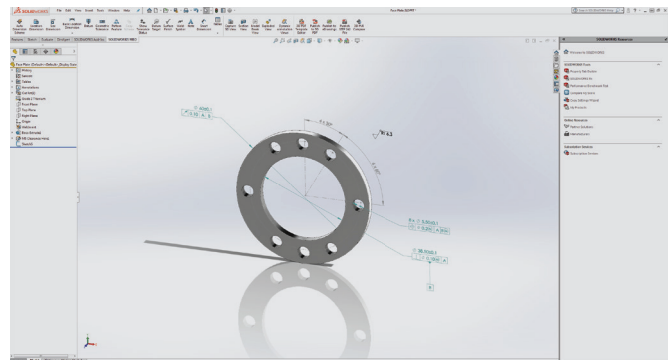
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Using SOLIDWORKS MBD software, Veco B.V. has replaced 2D engineering drawings with 3D PDF files and realized productivity gains that are helping the company improve quality while speeding development.

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