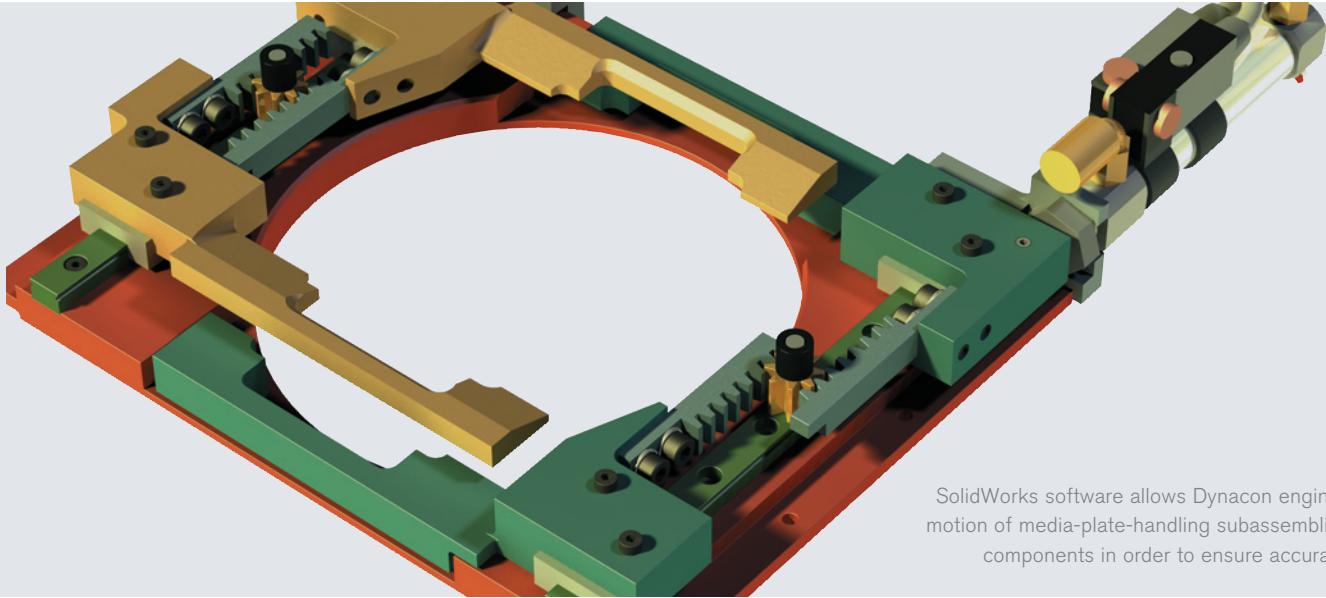


# Dynacon, Inc.

AUTOMATING MEDICAL PLATE HANDLING AND STREAKING WITH SOLIDWORKS



SolidWorks software allows Dynacon engineers to simulate the motion of media-plate-handling subassemblies and other design components in order to ensure accurate fit and clearance.

- Improved handling of large assemblies
- Eliminated manual drawing creation from product development cycle
- Enhanced ability to make design changes quickly and easily
- Reduced manufacturing time/rework with eDrawings

Dynacon, Inc. develops, manufactures, and markets automated systems for the medical laboratory and aerospace markets. The company's Lab Automation Group recently introduced the first automated media inoculating and streaking instrument for laboratory processing of urine samples. The InocuLAB LQ series of automation systems processes urine samples from the original specimen container by accurately dividing and distributing the sample, and automatically streaking culture plates for later analysis. InocuLAB systems, which represent large assemblies of about 2,000 parts, are more efficient, consistent, safer, and more reliable than manual processing by a lab technician.

During the development of the InocuLAB, the Dynacon design team grew frustrated with the CAD system it had been using, according to Anne Bornath, manager of product development. "We had been using the system because we wanted to use as much of our existing 2D data as possible," Bornath explains. "However, there were issues. We experienced difficulties while trying to work with large assemblies and were never able to model an entire instrument."

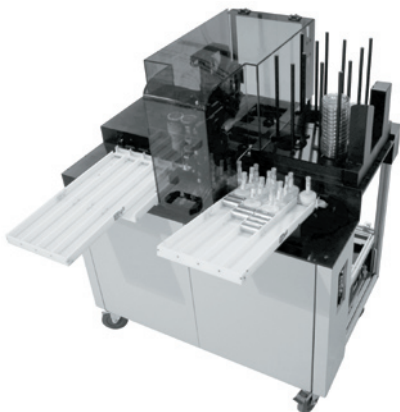
The design team decided to upgrade to a more reliable CAD system to improve its visualization and large-assembly capabilities while continuing to utilize legacy data. The group of three engineers evaluated three different CAD packages.

"We took one of our more complicated assemblies to test how well each system imported our legacy data," Bornath recalls. "We were trying to assess how much work would be involved in switching over to a new CAD system. We discovered that SolidWorks® software did the best job of bringing in the data. SolidWorks also had better functionality, and it became clear that SolidWorks was the better value."

Dynacon selected SolidWorks 3D CAD software because of its ease of use, large-assembly capabilities, sheet-metal functionality, advanced visualization features, and ability to import legacy data.

**“We’ve seen a big improvement in the time it takes to go from final design to production. We’ve been able to eliminate the entire drawing step from our process through eDrawings.”**

Anne Bornath,  
Manager of Product Development



Dynacon uses SolidWorks software to design large automated systems such as machines for applying medical laboratory samples to culture plates.

## Virtual prototyping of large assemblies

The company uses SolidWorks to prototype large assemblies on the computer, refining the design before developing a physical prototype. “We immediately discovered how much easier it was to work collaboratively with SolidWorks software across the design team,” Bornath says. “The software works better, is much faster, and enables us to fully visualize our assemblies and subsystems.

“We use the dynamic motion and collision detection features in SolidWorks not only to address interferences but also to gain a better understanding of how the instrument will function by simulating motion,” Bornath adds.

Dynacon also uses SolidWorks Configuration Management capabilities to design instruments that can handle different types of specimen containers and expects to utilize SolidWorks configurations for custom, manufacture-to-order products.

## Design changes made easy

The ability to make design changes quickly and easily in SolidWorks helps the Dynacon design team to both shorten its design cycle and improve the quality of its final designs. Before the transition to SolidWorks, making a design change resulted in a lot of extra work because the group had to modify all affected parts and associated drawings manually.

“Before we moved to SolidWorks, we would design all of our subsystems independently and then make changes and develop workarounds on the shop floor,” Bornath says. “We heavily use the ability to modify parts by feature in SolidWorks without having to worry about updating other data because SolidWorks does it automatically. This kind of flexibility is a big plus for us, particularly in conceptual development. Designing these types of systems involves much more than knowing the end result. With SolidWorks, we can visualize the system on the computer and make changes to refine it before going to production.”

## Using eDrawings to drive manufacturing

Dynacon engineers use SolidWorks eDrawings® software to communicate detailed designs to manufacturing operations. Email-enabled eDrawings files supply accurate representations of 2D drawings and 3D models that anyone can understand. “We no longer publish individual engineering drawings, assembly drawings, or BOMs,” Bornath explains. “We put the final assembly on our internal server as an eDrawings file, which we call eAssemblies, and use part naming in the eAssembly to designate materials. This way, our manufacturing specialists on the shop floor and our service technicians in the field can access detailed design data as needed.

“We’ve seen a big improvement in the time it takes to go from final design to production,” Bornath notes. “We’ve been able to eliminate the entire drawing step from our process through eDrawings.”



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