

ReThink. ReEngineer. **RESULTS.**

Since 1986

SAY PLASTICS | CASE STUDY

Metal to Plastic Conversion Drives Big Savings, Better Performance for Lab Equipment Manufacturer

THE CHALLENGE

One of Boekel's popular products is their laboratory incubator. It is available in different sizes and designed for use in medical, research, and industrial labs around the world. Applications for their lab incubators include microbiology, sample prep, and testing for industries like biotech, wastewater, food and beverage, cosmetics, and pharmaceutical.

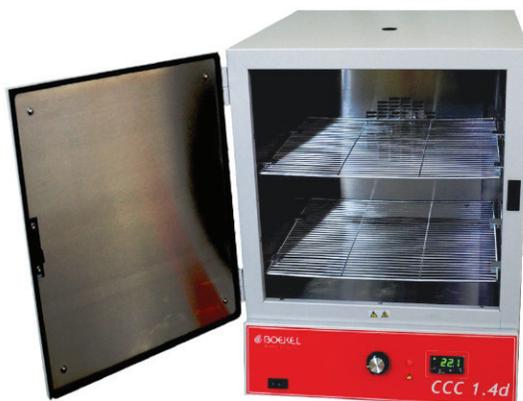


Figure 1: Previous stainless steel liner that was costly and hard to clean

Boekel needed a new deep draw liner for their lab incubator. The current liner was manufactured from stainless steel and posed challenges. It was costly to produce, and lab technicians found the liner hard to clean.

Realizing the benefits of thermoforming over traditional manufacturing processes, Boekel was open to converting the liner from metal to thermoplastic. They looked for a reputable thermoformer that could produce the new deep draw liner.

SAY Plastics was called on, and their full-service capabilities and years of thermoforming and deep draw experience allowed them to successfully take on the project.

THE PLAN

SAY Plastics was tasked with producing two liner options with an initial volume in the range of 50 pcs. each annually. The required sizes were 20" x 20" x 19" and 23" x 21" x 22".

To kick off the project, SAY Plastics estimated the tooling and parts costs and took the important step of inviting the Boekel engineering team to the SAY Plastics facility to learn more about the thermoforming process and conduct a design review.

Customer Spotlight

Boekel Scientific is a leading laboratory equipment manufacturer based in Feasterville, PA. Founded in 1868, the company produces life science and bio lab equipment for hybridization, histology, blood banking, microbiology, and food safety. Boekel is an ISO 9001 and ISO 13485 certified company.



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SAY Plastics encourages in-person design reviews with clients, whether at their facility or the client's facility. The reviews ensure successful project execution, as was the case with the Boekel deep draw liner. The design review with Boekel determined the best material type, texture, and tooling configuration for the project.

SAY Plastics' highly-successful approach to tooling development, the [SAYtooling System](#), played a key role in the liner project. It provides a cost-effective entry for new product development and start-up projects. SAYtooling is also ideal for low and medium-volume programs like Boekel's.



Figure 2: Thermoformed Kydex T (Acrylic/PVC) plastic conversion liner

The SAYtooling System has delivered 50% faster lead times for many clients – with cost savings of 30% or more.

"Our SAYtooling System evaluates the material to be formed, the process required by the design geometry, cosmetic requirements, and budget to provide the best tooling solution," noted Brian O'Neil, SAY Plastics Senior Applications Engineer.

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Figure 3: The SAYtooling System engineered mold solution

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THE RESULTS

Using the SAYtooling System, deep draw technology, and lessons learned from previous liner projects, SAY Plastics designed and manufactured ceramic positive configured molds and fully-machined CNC trim fixtures. The optimal mold and processing designs resulted in excellent material thickness distribution.

The final product was a UL rated liner thermoformed from .325 (for the larger) and .250 (for the smaller) starting gauge Kydex T material produced at a lower cost than Boekel's metal liner. The new liner was also easy to clean due to its smooth CNC machined edges and light weight.

The liner's molded in off-white color also resulted in better aesthetics and a brighter interior than its stainless steel predecessor.

Boekel was extremely pleased with the project outcome. They continue to appreciate the cost-saving and performance benefits that their thermoformed part has over other materials and manufacturing processes.

SAY Plastics is currently putting their thermoforming and liner manufacturing expertise to work for another client. A key player in the small freezer market recognizes the advantages of SAY Plastics' deep draw capabilities and will soon be launching their liner conversion from stainless steel to thermoplastic.



Figure 4: Incubator assembly with deep draw thermoformed liner

SAY Plastics, Inc.

re-thinks and re-engineers traditional manufacturing processes and the use of materials to help customers improve product quality, boost productivity, and reduce costs.

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