

Case Study: Biotech Innovation Meets Semiconductor Automation

When an innovative manufacturer of genetic sciences solutions needed a partner to build a tool that combined automation, semiconductor technology, and a unique biotech process, they looked for a company that could drive the design process, work quickly, and accommodate a collaborative approach.

The biotech manufacturer needed a development partner with experience in semiconductor wafer handling and life science tool/consumable manufacturing requirements. The ideal partner would also have the capability to scale manufacturing, when the company needed to produce multiple versions of the final design.

The Challenges

The company, whose genomic solutions are used in commercial, diagnostic and clinical research applications, is an industry leader in the biotech field but needed a development partner who understood semiconductor automation and integration of their complex process module.

“Semiconductor automation was really outside our competencies,” said a senior engineering manager on the project. “We do genomic science. We were contacting multiple vendors. It was a huge project – a lot of money to be spent.”

In-house production was not a consideration. “This is the biggest tool that we’ve built in our history in terms of physical size,” he said. “We needed help being able to integrate that with wafer handling.”

They wanted a partner who could work collaboratively and had expertise in semiconductor process integration.



They were also looking for flexibility to accommodate the likelihood of changes in what was an R&D-phase tool. Midway through the partnership for example, the biotech company decided to scale the project back to one machine.

A Partnered Solution

Owens Design was shortlisted because of work done for another division of the company and for their extensive experience designing and manufacturing custom automation equipment for the semiconductor industry. Owens won the job for a long list of other qualifications, beginning with the ability to guide the customer through the development processes. “Being able to drive the design rather than coming to us and having to ask a lot of questions about the details was one of the key places where Owens won out,” the manager said.

“It’s very much more of a partnership rather than a contract developer.”

From the first stages, the Owens Design team worked to ensure a smooth collaboration, including regular onsite collaboration between the two teams. Among the benefits of working with Owens cited by two project leaders for the biotech company:

Phased Process: Owens Design uses a phased effort “that resonated with us because early on not all the requirements are set. There are a lot of unknowns. Their phase 1 was not a large commitment: it was smaller and non-committal. It was well executed. With other vendors, we don’t usually get that systematic approach” to product development.

Broad Knowledge: “They’re fast. They have a lot of expertise in the areas we need help in. They have broad knowledge in mechanical design, electrical, fluidics, operations in place for procurement, and putting the tool together. That accelerated the development cycle quite a bit. That’s a big advantage for Owens and for us as well. Their mechanical team is really good. We really enjoy working with them.”

Partner Approach: “We look at them as a development partner really. They have a lot of capabilities we don’t have. It’s very much more of a partnership rather than a contract developer.”

Professional Structure: Having a dedicated project manager and a business development liaison “is very helpful to companies like us.”

Next Stage Development Capability: As a custom automated tool development partner, Owens Design “can also take it to the next stage if you need to make many more of these tools.”

Flexibility: “We started the project with two big tools and ended up canceling one of them and the flexibility they provided us – that was great. They are here for the long game with customers. They see it as an opportunity for an ongoing partnership. That is the right mindset. I really love that actually.”

Hands-on Collaboration & Training:

The Owens Design team was “very accommodating” in allowing the customer’s engineers to come onsite and work hands-on. “They were also very helpful in training us on how to use the tool.”

The Results

The biotech company’s machine is in production, saving significant labor costs and enabling the customer to scale to meet market demands.

About Owens Design

From startups to Fortune 500 manufacturers, you can minimize risk, accelerate time-to-market, and scale high-tech production with custom design, build and turnkey manufacturing from Owens Design. OEMs meet impossible customer demands with production-ready prototypes designed and built with Owens Design. Manufacturers rapidly scale production of new products with custom automation developed by Owens. Since 1983, Owens has designed and built thousands of tools with 100% delivery, through highly experienced engineers, a proven product development process and customer commitment. Owens Design has deep expertise in semiconductors, biomedical, renewable energy, batteries, displays, and emerging technologies.

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