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Renovating for Quality

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Pride of Place

A process re-evaluation and new technical furnishings inspire assemblers at a Southern California cable manufacturer.



Cicoil assemblers now have plenty of light to do their jobs. Photo courtesy IAC Industries Inc.

There are many reasons to invest in renovating and refreshing the shop floor. At the very least, manufacturers can expect improvements in productivity and efficiency. But there are less tangible benefits, as well. For one Southern California manufacturer, inspiring the workforce to create world-class products was just as important.

Located just outside of Los Angeles in the Santa Clarita Valley, Cicoil Corp. manufactures high-performance, flat cables. The unique attributes of Cicoil's silicone-jacketed cables have made them an essential component of aerospace, military, motion control and robotics applications. Cicoil's cable assemblies are often used in critical applications where failure is not an option.

When Howard Lind took over as Cicoil's president in June 2006, he was determined to modernize the company's assembly process. Lind inherited an assembly area that had long before lost whatever efficiencies it was originally designed to have. Cramped and cluttered, the shop floor was uninspiring and productivity-challenged.

Lind realized he would need a two-pronged approach to the renovation. First, he wanted to redesign the production area for cellular manufacturing. And, just as importantly, he wanted new technical furnishings that would facilitate precision assembly and show visitors and employees alike that "quality," "care," and "capability" were attributes embraced by the company.

Nuts and Bolts

Lind took it upon himself to search for the new workbenches. He had the vision of a jewelry factory: clean and

pristine. He ultimately selected benches from IAC Industries in Brea, CA, after viewing the product selection on the company's Web site.

"I was impressed by IAC's attention to ergonomics and their obvious build quality. They are very well-built, with a lot of attention to detail, and the finish promises to be very durable," Lind explains.

Specifically, Lind chose IAC's Workmaster E-Series workbenches. "Aside from being the best quality I looked at, they are pretty standard-type benches, yet still offered all the associated add-ons that we needed," he says.

When asked about the deployment and selection of components for the workbenches, Lind explains, "From a production standpoint, I had two main manufacturing philosophies that I wanted to employ. The first was to convert to...cellular manufacturing techniques. This significantly improves quality and reduces waste by more rapidly identifying issues within the assembly process. We now know immediately when a flaw enters the assembly flow—and not after dozens of bad parts have been made.

"Secondly, I wanted 5S methodology. In short, we basically took away everything from the work area and brought back only what was needed. This meant that each workbench had to have every tool needed by operators to conduct their tasks. And conversely, we had to eliminate any extra shelving, drawers, cubbyholes, etc. that entice clutter."

5S is a system to reduce waste and optimize productivity by maintaining an orderly workplace and providing visual cues to assemblers. The term refers to five steps—sort, set in order, shine, standardize and sustain—which are also



Lind stands before the outdated assembly area he inherited when he took over the company. *Photo courtesy IAC Industries Inc.*

known as the five pillars of a visual workplace. The methodology helps assemblers to understand how work should be done. It also instills ownership of the process in each employee.

To accomplish the 5S initiative, Cicoil added to each workbench a set of IAC's EZE Reach uprights, which provide "off-the-work-surface" storage. For the uprights, IAC produced color-matching, powder-coated pegboards onto which the specific operator tools were placed. A limited amount of drawers and shelves were employed only where needed. In addition, task lighting was added to the uprights to improve visibility and eliminate the clutter of individual clamp-on lights, which were used before.

To produce U-shaped assembly cells, IAC manufactured matching corner pieces for the workbenches. "One of the things that impressed me about IAC is their commitment to modularity," says Lind. "They had all the pieces I needed to construct the various cells I wanted to configure. I went with plastic laminate work surfaces for assembly cells, but needed something more robust for our potting cells. IAC supplied stainless steel tops for these benches, and they are gorgeous."

To clean up the previous spaghetti mess of electrical wires, Cicoil employed the IAC TE-1 electrical channel mounted to the rear cross-member of each workbench. The channel provides each bench with four 20-amp duplex electrical outlets. Cords for electrical devices on the work surface now exit cleanly to the rear of the bench.



Prior to the renovation, Cicoil's workbenches were cramped and cluttered. Note the crude electrical supply boxes and conduits. *Photo courtesy IAC Industries Inc.*



After implementing 5S, Cicoil's shop floor is open, organized and uncluttered. *Photo courtesy IAC Industries Inc.*

The Intangible Factor

Cicoil had to revamp the shop floor for the sake of productivity efficiencies, but there was more to it than that.

"At Cicoil, we manufacture cables and assemblies that are way above average," says Lind. "They are used in medical devices, military equipment and ordinance, aircraft and spacecraft. These are applications where people's lives are on the line. In the case of spacecraft, there are no second chances to get it right.

"I wanted an environment that impresses the seriousness of what we are producing on every employee. I wanted Cicoil employees to be surrounded by precision and quality to put them in the proper mindset to impart precision into the Cicoil cable products they manufacture. I also wanted visiting customers to tour our plant and be impressed with the same vision.

"The IAC products we deployed are a big part of that endeavor. They are really built well, with great fit and finish. They have all the elements I wanted to convey quality and precision. They are impressive."

The Results

Renovating a manufacturing floor has to have a return on investment. Cicoil deployed nearly 100 Workmaster workbenches, with corner tables, uprights and other accessories. What's the payoff? According to Lind, employee morale and



On the revamped shop floor, each station uses pegboards to organize the tools and components for operators to accomplish their tasks. Note the stainless steel work surfaces here in the epoxy potting cell. The upper shelf aggregates finished assemblies. *Photo courtesy IAC Industries Inc.*



To clean up the previous spaghetti mess of electrical wires, Cicoil mounted an electrical channel to the rear cross-member of each workbench. Photo courtesy IAC Industries Inc.

quality of work is “off the charts.”

“The assembly cells and 5S implementation provide an organizing factor that instills confidence in the teams,” he says. “Confidence reduces stress, and makes for happier employees who are willing to personally ‘own’ the work they are doing for us. The IAC workbenches play an important role. The ergonomic touches built in are a big improvement over our old equipment. They are more comfort-

able to work at, with all their equipment within reach, and the improved lighting makes a big difference.”

And how does this translate from a business sense? Since Lind’s transformation of Cicoil, the company has doubled its business, while simultaneously reducing the workspace footprint by one third. In other words, Cicoil is manufacturing twice the product in a fraction of the previous space, and it now has room for growth

without the expense of new buildings.

In addition, the quality and consistency of Cicoil’s finished products have improved. So much so that the company’s customers are taking note. Cicoil was recently presented with Raytheon Integrated Defense System’s prestigious 5-Star Supplier Excellence Award, that company’s highest recognition of commitment to continuous process and quality improvement.

“It’s a remarkable achievement,” says Lind. “Obviously, I am very pleased with the results, and the workbenches play a big part. IAC Industries provided excellent customer service and the product met my price goals. It’s important that people can see our factory, and now we are proud to do so. We intend to continue our aggressive growth, and with our renovation we have the space to do so. When we do, we will be filling the space with more IAC workbenches.”

For more information on workstations, call IAC Industries at 714-990-8997, e-mail benchsales@iacindustries.com, or visit www.iacindustries.com.

For more information on cables and wire harnesses, call Cicoil at 661-295-1295 or visit www.cicoil.com. **A**

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