



ELECTRONIC MFG. SERVICES (EMS)

Yamaha: Technology and Support for Spinnaker Contract Manufacturing

By Michael L. Martel

Spinnaker Contract Manufacturing Inc., a growing EMS provider in Tilton, New Hampshire, has faced many challenges over the years and has had to address them head-on with flexibility and creative solutions. The company has recently seen an upturn in demand for quick-turns for both production and prototypes.

To meet this growing demand effectively, Spinnaker worked with Yamaha build more flexibility into its operation to provide customers with both volume production and quick-turn delivery. Also, the receiving, kitting, assembly, QC and shipping teams all needed to be faster and completely accurate. Spinnaker met the need for speed and flexibility at the pick-and-place level, which is often the bottleneck in a high-speed line, by installing modular mounters to aid production.

Added Capacity for Larger Volume

“Spinnaker started in 1992 with through-hole technology and grew into the SMT business in 1998. We are a medium-sized company but since our start, we have seen more than 20-30 percent of steady growth every year,” says Carlos Ferreira, Spinnaker’s SMT manager. “The key component has been the steady increase in volume in a business climate that has seen significant highs and lows. Presently we are seeing 20 to 30 jobs per week with a one-shift operation, with most of the PCB assemblies being double-sided. The jobs are a mixture of production, prototype and NPI.”

Guy Nickerson, Spinnaker’s president, describes how his company added capacity to meet the demand for volume and flexibility in the quick-turn requirement of its assembly business. “We began with a Yamaha Emerald pick-and-place machine, which was followed by the acquisition of a Topaz-X in 2001, and then an Opal-X in 2005. In 2011 we purchased

our first YS12, and we have been purchasing a new machine every year as our business has grown. The Yamaha equipment has played a major role in this growth.”

According to Nickerson, the pick-and-place models chosen by Spinnaker have helped the company build superior products, which in turn has given the company a competitive advantage.



From left: Guy Nickerson, president of Spinnaker, and Carlos Ferreira, SMT manager.

Spinnaker’s manufacturing engineers found their first pick-and-place machine, the Emerald, to be reliable and repeatable. As a result, when the need arose to add capacity, Spinnaker stayed with the Yamaha product line. “Equipment reliability is the most important factor, since it is critical to the survival and growth of a successful business,” Ferreira says. “When we were starting out in SMT in 1998, the decision to purchase the Yamaha machine was important because downtime was critical at that stage. We also had to deal with the unexpected.”

Ferreira adds that when starting an EMS business, the ability of the machine to adapt to “whatever came through the door” played a large part in the success of Spinnaker. Since they had good results with the Emerald, it made sense to purchase again from the same supplier. This also avoided issues of compatibility between the various machines.

A number of changes by Yamaha in its pick-and-place technology since Spinnaker purchased the Emerald, have helped Spinnaker keep pace with growing demands as well as improve the assembly process. Most notable of these improvements has been the change from mechanical feeders to electrical feeders.

“When we compared the Yamaha feeders to what else was available on the market, we found the Yamaha feeders to be the best available,” says Ferreira. “They are easy to han-

dle, as well as to load and operate.” Installation of the new feeders had an immediate impact on pick errors, he recalls, with pick rates at or near 100 percent. The impact on production has been a 25 percent improvement in up-time. In addition, changeover is now quick and easy with no wasted components.

Additional Equipment

The engineers at Spinnaker knew, from their experience with various vendors, that service and support were critical to making the AOI and inspection process a success overall. They’d had unpleasant experiences previously with AOI system suppliers whose service was poor. Spinnaker requested special software to address issues with specific products, and Yamaha, Carlos recalls, reacted quickly with a working solution. “Yamaha and TransTec Worldwide have been supporting us throughout the entire process, and this has reinforced our decision to purchase the YSiV AOI system. We made the right decision in terms of the equipment and the supplier. The result has been success.”



Spinnaker’s manufacturing floor in Tilton, New Hampshire.

The company has seen more than 20-30 percent of steady growth every year, and the Yamaha equipment has played a major role.

Familiarity with the software has played a key role as well, Carlos adds, since they can take a placement program and convert it into an inspection program quickly. With a few changes, Spinnaker’s engineers can create a program quickly, and the speed and simplicity has had an impact on throughput. “We saw the similarity in the software, which made teaching the machine a significantly faster process. The YSiV has lived up to the expectations established by the Yamaha equipment that we had already purchased and installed. The machine is doing great, and we have experienced a big reduc-

tion in false calls over our previous AOI equipment.”

In time, Spinnaker also needed another solder paste stencil printer. The company’s existing printer wasn’t a Yamaha, but the YCP10 was one of three printers that it took into consideration. “They all had various differences, but the YCP10 was unique,” Carlos recalls. “The decision came down to focusing on the construction of the printer. You have to look at the mechanics, that is to say, how the machine is built. The YCP10 was built with many similarities to the pick-and-place machine. The construction attributes typical of the other machines concerned us in terms of reliability and long-term use. We felt that the YCP10 was built to last, and espe-

cially that the software was familiar to us; a real plus. The control of the squeegee angle has had a remarkably positive impact on our print yields. The ability to address the angle to address printing challenges, a unique feature of the printer, has been a great asset.”

Looking Ahead

There are big obstacles today that are hampering EMS startups trying to enter the market, according to Nickerson. “Larger EMS companies will continue to struggle with cost controls,” he says. “It is my view that the strongest growth in the next 3-5 years will be in the mid-sized range of companies. Flexibility and responsiveness will keep work here in the U.S., in part because the trend is to do things faster, better and cheaper. This is what our customer base is expecting. We need to be constantly improving on quality, delivery and costs, even on a daily basis. Yamaha has played a major role in helping Spinnaker meet these goals.”

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