Success Story

Improving Tracking, Tracing, and Quality Assurance of Customized Pediatric Orthotics

Cascade DAFO, Inc. introduced the first Dynamic Ankle Foot Orthosis (DAFO®) for pediatric and adult patients who lack some degree of voluntary control of their foot and/or ankle. Unlike rigid AFO braces, the thin, flexible patented DAFO design provides freedom to move, yet protects the foot and ankle from danger, helping patients to maintain the correct foot/ankle position, encourage mobility, and ultimately, improve success with standing and walking skills.

Cascade DAFO takes pediatric orthotics a step further by allowing patients to choose colors, patterns, and decorative graphic elements to personalize their device. For younger patients especially, this is a particularly important feature. As Loretta Sheldon, COA - Director of Business Development & Education at Cascade DAFO put it, “when you see things like the designs they choose, that’s the kids participating in their own healthcare, which makes quite a big difference in whether they want to wear the braces or not.”

With both custom and pre-fabricated DAFO designs, and literally hundreds of decorative options for patients to choose from, product tracking and quality control at Cascade DAFO is imperative. Originally, Cascade DAFO’s efforts to track each DAFO consisted of recording job numbers, manufacturing dates, and patent numbers using hand-held engravers. These pneumatically-powered engraving tools were heavy, noisy, and difficult for employees to operate for hours at a time. Any mistakes often meant starting over and these marks could sometimes be difficult to

read, potentially leading to warranty questions or delays in reordering. Moreover, when Cascade DAFO's business grew to include European territories, other challenges presented themselves such as the European Union's requirement that the CE mark be included on each pre-fabricated brace sold in Europe. With this additional requirement, hand engraving tools proved to be ill-suited for the task, leaving Cascade DAFO to consider the costly alternative of reworking all of their thermoforming molds to incorporate the CE mark.

In search of a better solution, Cascade DAFO's manufacturing engineers contacted Synrad, a Novanta brand about the possibility of using a CO_2 laser to mark the polyethylene (PE) shell. Working closely with Cascade DAFO, Novanta Application Engineering Manager Justin Conroy quickly determined that a 25 Watt CO_2 laser coupled with an FH Flyer marking head was the perfect solution to marking the compound curved DAFO shell.

Hand marked

Laser marked

The first CO_2 laser marking workstation brought such a level of efficiency and consistency to the production floor that another laser marker was soon ordered. According to Noah Wass, R&D Engineer at Cascade DAFO, "The cost of the laser engraver was pretty much the cost of us taking the man hours and the materials and the time to rework all of our thermal molding". Noah continued, "I'm very impressed with how well the machines have held up on our production line. That was a very big concern of ours. It's just a very, very dusty environment, and to have no issues so far is excellent".

Ultimately, the craftsmanship, quality, and dedication instilled by Cascade DAFO employees are what patients experience when wearing their DAFOs. And the laser markers? It enables them to fill more orders each day — so more kids and adults have the opportunity to lead healthier, happier lives.

Interested in speaking to one of our knowledgeable representatives?

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