

FARO® Quantum^S Arm Helps Woodland Trade Co. Win Jobs, Boeing *Supplier of the Year*, Part 1

Ryan E. Day | Contributing Editor / Content-Marketing Coordinator | Quality Digest
Originally published in Quality Digest on 2/21/2018



FARO's high-accuracy, 6 axis Quantum^S Arm

High-Accuracy Portable CMM Helps Land Tight-Tolerance Aerospace Contracts

Manufacturing activities have strong ties to economic prosperity. Deloitte's 2016 Global Manufacturing Competitiveness Index states, "Nations and companies are striving to advance to the next technology frontier and raise their economic well-being." It's no surprise that the manufacturing sector is increasingly competitive. Many companies struggle; some go under. But other manufacturing companies find ways to thrive and grow. The Woodland Trade Co. (WTC) is one of the latter.

Headquartered in Tacoma, Washington, WTC has been manufacturing high-quality tooling for more than 30 years. WTC exemplifies what a world-class tooling supplier looks like. To its credit, WTC is an ISO 9001-registered, D6-51991 DPD/MBD-approved supplier that has earned the Boeing Supplier of the Year Award and 10 consecutive Boeing Gold Excellence awards. WTC enjoys an industrywide reputation for on-time deliveries of top-quality tools.

So, how do they do it? How do they make that happen on such a consistent basis?

Growth in an Ultra-Competitive Environment

Although WTC had been a successful tier-one supplier to Boeing for quite some time, it could see possibilities for expanding business with this coveted client.

"Boeing wants us to make the lightest tools possible using the best materials possible," says William Shanks, QA Manager at WTC. "We actually had to turn down some work with Boeing due to tolerance requirements that our previous inspection equipment couldn't provide. We would have to send these out to a Coordinate Measuring Machine (CMM) house and pay them several thousand dollars to inspect a tool, which increases lead time and cost. That's not a profitable road to go down."

Boeing wasn't the only desirable client that WTC had designs on.

"Our growth plans include expanding to different customers," explains Shanks. "We wanted to crack the ones here locally first, and Blue Origin is right in our back yard."

"We started seeing tighter tolerance requirements with these new customers, and the equipment we had wasn't enough," Shanks continues. "So, we decided to up the ante on that. We invested in a FARO Quantum^S portable coordinate measuring machine for measuring and inspecting high-tolerance, high-end parts."

With excellent ergonomics and dual hot-swappable batteries, the Quantum^S is the first arm to meet the new and most rigorous ISO 10360-12:2016 international measurement quality standard. The hard probe and the Laser Line Probe can digitize interchangeably without having to remove either component. Users can digitize simple features with the arm's hard probe and seamlessly scan across diverse surface materials regardless of contrast, reflectivity, or part complexity without any special coatings or target placement.

The Quantum^S exceeded all of WTC's strict requirements.

"As soon as we took it out the box and loaded it up on the table, it shot the tolerance perfect," says Shanks. "And

FARO® Quantum^S Arm Helps Woodland Trade Co. Win Jobs, Boeing Supplier of the Year, Part 1

we're like, 'Man, this is great. This is going to open up a lot of doors.'"

And it did.

"Now we go in there and successfully bid these high-accuracy requirement jobs. We have the higher resolution we needed, and we're quoting the work that we couldn't before. The FARO Quantum^S was integral in helping us come up to speed with Boeing's requirements."

William Shanks
QA Manager, Woodland Trade Co.

"Now we go in there and successfully bid these high-accuracy requirement jobs. We have the higher resolution we needed, and we're quoting the work that we couldn't before. The FARO Quantum^S was integral in helping us come up to speed with Boeing's requirements."

"Blue Origin is also a big customer; they just came on last year, and they're growing and growing," explains Shanks. "We've garnered more work with Blue Origin because now we have the capability to inspect these tighter tolerances quickly and accurately."

"We are producing close tolerance parts for both manned and unmanned flights into space. The criticality of dimensions and the speed at which we inspect and approve parts for use can only be achieved with comparable inspection equipment. The use of FARO arms is a major contributor to minimizing inspection time because of their accuracy, ability to create inspection data, and their portability/maneuverability to access parts – and also to have the inspection equipment moved to the part on occasion."

Angelina Zagorov
Propulsion Design Engineer, Blue Origin, LLC

Angelina Zagorov, Propulsion Design Engineer for Blue Origin, had the following to say about Woodland Trade and FARO. "We are producing close tolerance parts for both manned and unmanned flights into space. The criticality of dimensions and the speed at which we inspect and approve parts for use can only be achieved with comparable inspection equipment. The use of FARO arms is a major contributor to minimizing inspection time because of their accuracy, ability to create inspection data,

and their portability/maneuverability to access parts – and also to have the inspection equipment moved to the part on occasion."

Return on Investment

Savvy business leaders only invest when there is a return on investment to be realized. The WTC team investigated the Quantum^S and crunched some numbers. It was a no-brainer.

"I can see the Quantum^S adding a 10-15 percent increase to our business volume."

William Shanks
QA Manager, Woodland Trade Co.

"I can see the Quantum^S adding a 10-15 percent increase to our business volume," Says Shanks.

Two of the Quantum^S features that contributed to the increased throughput are the outstanding data-gathering capabilities and the redesigned probe-tip retention mechanism.

"One unexpected benefit is definitely the probe," adds Shanks. "The whole tip of that arm is all brand new. When we saw how that worked, we were really excited. This saves about 30 percent of probe calibration time when we have to change probe points to gather data for different features of a tool. The quality and repeatability of the Quantum^S means that we don't have to go through all the calibration every time."

Last Word

Woodland Trade's focus on quality, and its investment in equipment that facilitates quality manufacturing, has been key in garnering work with the likes of Boeing, Blue Origin, Hexcel, and Triumph.

"Quality is our number-one goal," "When we tell our customers we're using FARO equipment, everyone understands what FARO equipment is, and they have full faith in it as well as us. When we show that we do more things than they thought possible with the equipment, a lot of customers react to that, and they love it."

William Shanks
QA Manager, Woodland Trade Co.

"Quality is our number-one goal," says Shanks. "When we tell our customers we're using FARO equipment, everyone

FARO® Quantum^S Arm Helps Woodland Trade Co. Win Jobs, Boeing Supplier of the Year, Part 1

understands what FARO equipment is, and they have full faith in it as well as us. When we show that we do more things than they thought possible with the equipment, a lot of customers react to that, and they love it.

“We pride ourselves on it when we get these awards from Boeing,” admits Shanks. “It’s shared with the company and all the workers on the floor for sure. The owners are very adamant about getting it back to the employees.”



Using a 1.5 meter Quantum^S FaroArm®, the most accurate portable measurement arm on the market, to inspect a precision tool that Woodland Trade built for an aerospace company.

View more of FARO's case studies at www.faro.com
