

# FARO® Quality Inspection Solutions Help Woodland Trade Co. Win Jobs, Boeing Supplier of the Year, Part 2

Ryan E. Day | Contributing Editor / Content-Marketing Coordinator | Quality Digest  
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## FARO's Super 6DoF Solution Drives Return on Investment

In part one of this article, we explored how Woodland Trade Company (WTC) leveraged high-accuracy portable CMMs to help land tight-tolerance aerospace contracts, and even earn Boeing's Supplier of the Year award. Here in part 2, WTC's QA manager William Shanks, reveals the advanced technology that helps them fulfill those highly sought-after contracts.

## Challenges in Delighting Customers

WTC is a world-class tier one tooling supplier to OEMs such as Boeing, Blue Origin, Hexcel, and Triumph. Fulfilling contracts and delighting these customers is both lucrative and challenging. One of the challenges is that the tooling WTC manufactures usually requires 100 percent inspection.

"Because we're a tooling shop, we're not allowed to inspect our product according to a sample plan," explains Shanks. "We have to do 100 percent inspection 100 percent of the time. Boeing requires us to do 100 percent inspection. That means everything we manufacture for them, we inspect. We don't have the luxury of having a reduced inspection rate at all."

The 100 percent inspection requirement puts a tremendous strain on production workflow. Another challenge for WTC is that they deal with some very large pieces with very tight tolerances.

"We do lots of large jobs," says Shanks. "We create tooling for large interior panels, large stow bins, large fairing pieces. These things can be more than eight to ten feet wide and twenty feet long."

For years, manufacturers of large parts with tight tolerances have struggled with the riddle of inspecting large parts with tight tolerances in a profitable time frame. Laser trackers are suited well for large part inspection, but laser scanners are better suited for tight tolerance requirements. To employ both, some operators have resorted to "leapfrogging" their ScanArm to get the job done.

"It's always been a contention that every time we leapfrog our equipment we would have alignment issues or sometimes even have to start over again," says Shanks. "With some of these tools measuring up to 20' by 20', starting over again was really not an ideal option. We needed a tracker that would remain stationary and have something else that could reach to the backside of a tool to pick up the features we needed."

In a business requiring 100 percent inspection, this process threatened to turn WTC's QA efforts into a stumbling block. Fulfilling these high-end contracts would require a more efficient solution.

*"With this Super 6DoF set up, we reduce large-scale inspection time by fifty percent."*

**William Shanks**  
Quality Assurance Manager, Woodland Trade Company

## High-Tech Solution for High-End Jobs

"Our FARO Account Manager goes leaps and bounds out of his way to make sure we get what we need. He mentioned that they had a TrackArm kit that could sync a Vantage

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Tracker on one side of a tool with a ScanArm on the other side, and pick up the features on the far side. We said we really would like to try that.”

The TrackArm kit referred to was FARO’s Super 6DoF TrackArm solution.

The Super 6DoF TrackArm is a combination of the FARO Vantage Laser Tracker with a ScanArm. Woodland Trade is using the high-accuracy Quantum<sup>s</sup> Arm. Only one laptop is needed to operate both devices. The devices share the same reference coordinate system and integrate with a user’s wireless network. For situations that don’t require the use of both tools, the devices can be used individually as well.

For large-scale scan projects, multiple ScanArms can be paired with a single Vantage Laser Tracker, to enable all of the ScanArms to simultaneously scan into a single coordinate system. This approach saves the time required to move the ScanArm from one position to another (leapfrogging).

Super 6DoF provides high-accuracy 3D scans, even for large components. It can be used to measure complete cars, car bodies, bodies in white, tools, fittings, fixtures, parts and components, cubings, and master jigs for pilot and production phases. Super 6DoF is ideally suited for applications with parts that are not only large but extremely detailed and complex. This makes it an ideal solution for industries such as automotive, heavy machinery, and aerospace.

## Realizing Returns on High-Tech Investments

WTC was not disappointed with their trial-run of the Super 6DoF TrackArm solution.

“FARO let us test run the Super 6DoF kit before we bought it to make sure it was something that made sense for us,” says Shanks. “And it absolutely did the first day we used it. We tested it on a Tuesday and we gave them a purchase order for one by the end of the week. It’s been a time-saver galore.”

“With this Super 6DoF set up, we reduce large-scale inspection time by fifty percent.”

Once WTC realized the magnitude of process improvement the FARO solution provided, they expanded its role on the shop floor.

“Now we use the Super 6DoF set-up about seventy-five percent of the time the trackers are out on the floor, because we manufacture a lot of tools that are so big we can’t reach the whole thing with a ScanArm or tracker alone,” explains Shanks. “Now we don’t have to leapfrog with a ScanArm.

And that directly translates into cost savings because now, not only do we get the tool inspected faster, but we get the tool off the CNC machine quicker so our guys can start cutting the next tool. Keeping the CNC spindles running is a powerful driving force. And every time QA is out there inspecting something, that’s what stops our spindles. We’ve cut down on trim time, costs, and all of the things associated with 3D inspecting.”

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For a company to thrive and grow revenue possibilities, it must be alert for any opportunity to increase efficiency. WTC saw potential for improvement by leveraging the Super 6DoF’s capabilities and took advantage of it – the result was an astounding ROI.

“I think the first day using the Super 6DoF TrackArm kit, we probably realized a return on our investment in about five minutes,” confides Shanks. “Using the FARO equipment has been a blessing. It’s been such tremendous help in reducing the stress levels of a lot of different people. We do everything we can to facilitate them getting on to cutting the next tool. This is a huge cost savings for us.”

## Unforeseen Benefits

In production scenarios, QA is all too often (undeservedly) perceived as an unavoidable bottleneck. The Super 6DoF technology has helped WTC’s QA department advance to boon status within the company’s value stream.

“Our company actually appreciates what our QA department does for them,” boasts Shanks. “With some organizations, it’s a battle between production and QA, but when we perform inspections, we get in and get out pretty quick. We also use the equipment at the same time to check the CNC machine level. We run a routine preventive maintenance on each of our router beds here to make sure that those machines aren’t sinking or moving. We cut our tools at minimum, to plus or minus ten thousandths of an inch and that means our machines have to be pretty well dialed in. So, we’re constantly out there and if we start seeing drifting or see anything happen in the parts we inspect, we

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let them know right away and we go out to the machine and start dialing all the axes and making sure that those are working out.”

### Last Word

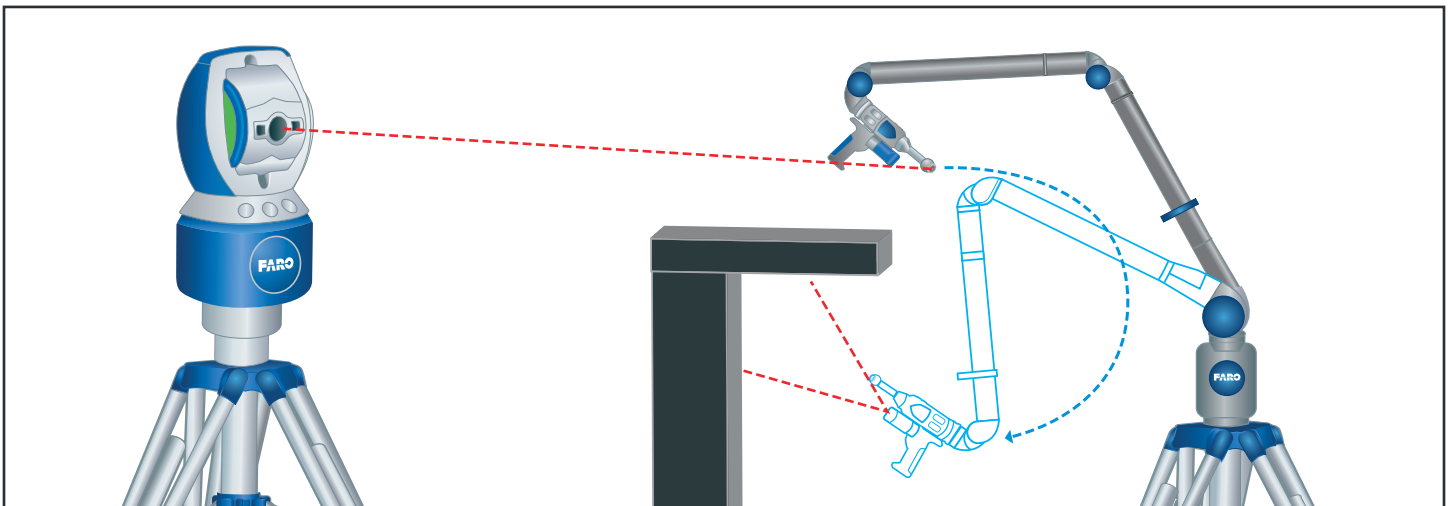
Attaining tier-one supplier status doesn't happen by accident. Winning the kind of accolades that WTC has definitely doesn't happen by accident.

“In 2007 we were chosen as Boeing's small business Supplier of the Year,” says Shanks. “We've been nominated for the last five years, and we're currently under nomination for 2017.”

WTC has also earned 10 consecutive Boeing Gold Excellence awards. It is WTC's commitment to quality that has earned this recognition by both customers and competitors.

“We get questions from other customers, and even other vendors that use the same equipment we do,” muses Shanks. “They are always asking us to kind of help them through their process.”

“Quality is our number one value here, absolutely,” concluded Shanks. “Our specific reason for buying the FARO equipment was to meet our customer's expectations. We work hard to achieve this level of quality. On top of that, we don't miss customer deadlines—we come in ahead of customer deadlines.”



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