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QC20-W ballbar gives Sandvik Medical Solutions confidence at every level

Customer:
Sandvik Medical Solutions

Industry:
Medical and healthcare

Challenge:
Verify machine tool performance to meet standards for manufacturing intricate parts.

Solution:
Planned preventative maintenance using QC20-W ballbar gives confidence at every level.

For the last 2 years Sandvik Medical Solutions, have been enthusiastic users of the Renishaw ballbar system to verify the performance of their machine tools. Sandvik, based in Sheffield, UK, is a major supplier to many of the global brands within the healthcare industry, providing investment castings, forgings and finished medical implants and instruments for joint replacement and spinal surgery markets. The exacting standards of their customers and the extensive QA system needed to comply with regulatory requirements in the industry means Sandvik are always looking for improvements in their manufacturing processes, which includes some fifty machine tools, including lathes, milling machines and machining centres.

Bob Monkhouse, Maintenance Manager, had seen a demonstration of the QC10 ballbar system when working for a previous company and was convinced it could bring benefits in manufacturing. He joined Sandvik Medical Solutions and proposed purchasing a Renishaw QC10 ballbar system and was pleased it was approved. Bob explained, “the request for the ballbar was initially justified as a ‘planned preventative maintenance’ tool but it very soon became the backbone of our quality assurance system. I couldn’t understand the logic of not having a ballbar system. It knocks hours off of our servicing times, gives trends for quality analysis and maintenance and almost straight away a test can show what improvement we have made. In short using the ballbar gives us confidence at every level”.

He continues, “the ballbar system is used as a pre-qualification and post-qualification check for all machine moves (in-house or external) alongside the production of test pieces and additional electrical, air pressure and bed level checks. Ballbar test results describe the geometry of the machine very clearly which is very useful for identifying if a machine has been damaged during a move. Overall performance on the ballbar test must be within 10% of the pre move value to be acceptable”.

All machine tools are also subject to a ballbar test at least every 6 months, after machine maintenance and as a check if any problems are suspected. Jim White, Quality Engineer is keen to emphasise that, “regular checking of the machines minimises downtime but when we do have a machine problem, the ballbar system is used as part of the investigation – it’s a process of elimination”.

Reduced set-up time

Less than a year after their QC10 purchase, Sandvik Medical Solutions decided to upgrade to a QC20-W ballbar system, at the same time ordering a QC20-W partial arc kit and QC20-W small circle adaptor.

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Sandvik Medical Solutions, Sheffield, UK

Using the new QC20-W wireless ballbar, Sandvik immediately saw the benefits as it reduced test set-up time and allowed 'doors closed' testing. On lathe applications in particular there were considerable reductions in set up and test time. Bob Monkhouse explains that, "the QC10 ballbar cable could get caught up when using the small circle accessory kit on a lathe, meaning we often had to repeat tests to get a 'clean' result. This is no longer a problem with the wireless QC20-W ballbar system and small circle adaptor. We found the new centre pivot and small circle adaptor more robust than the QC10 version and clearly shows the level of thought put in to improve the design".

Sandvik Medical Solutions adopt a very strict quality assurance programme. All ballbar test data is stored for monitoring trends and also to meet FDA (USA Food and Drug Administration) audit requirements. With this entire activity dependant on the ballbar, Bob ensures that he checks the recalibration date on the ballbar system before each use and that it is periodically recalibrated by Renishaw.

Confidence

Jim White, confirmed that, "the ballbar system gives us confidence even when our QA procedures say we have to run test pieces as part of machine qualification. With a positive ballbar test we know that the machine should make good product, dramatically reducing the risk of expensive material wastage and lost production time (up to 2 shifts on some intricate parts) something that final CMM tests have confirmed".


Bob Monkhouse carrying out a pre-qualification test using a Renishaw QC20-W ballbar

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> **Sandvik Medical Solutions (UK)**

For more information visit, **www.renishaw.com/sandvik**

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