

Delivering a complete assembly tool torque calibration process for a global manufacturer.

Working alongside one of the world's largest manufacturers of heavy-duty construction, mining and quarrying equipment.

The customer is one of the world's largest manufacturers of construction and mining equipment, with manufacturing plants and facilities located all across the globe. They also boast one of the world's most recognised brands in the industry.

The customer manufactures heavy-duty equipment and vehicles including excavators, bulldozers, compactors and a variety of equipment and tooling for construction, mining and quarrying.

In addition, the customer also provides equipment for a number of other industries including power generation, marine, oil and gas, forestry, landscaping, agriculture, paving and waste management. Within each of these industries they supply equipment to the smallest and largest of companies.

We provide products and solutions to the customer around the world in a number of facilities and departments. In this project in particular, we worked with the torque and leak management department, located within one of their US facilities where they manufacture construction equipment and vehicles.

The customer was looking for a complete solution for their torque tool calibration process including equipment and software that could be used to communicate this vital data around the plant.

The assembly tools used in the manufacture of heavy-duty construction and mining equipment simply have to be functioning at peak performance levels at all times, to ensure the reliability and integrity of all components and parts they are used to manufacture and assemble. For this reason, the solution they required had to be able to test and audit the tooling equipment under the most realistic and authentic of conditions to ensure it is delivering the required level of torque when tightening critical fasteners.

Crane suggested the use of a unique and innovative 1000Nm tJRS (threaded joint rate simulator) bench which comes complete with built-in OMS (Opta Management System) software.

The tJRS bench is unique in that it is the only fully-automated joint simulator bench that is based around a threaded fastener, meaning joint conditions are set up to replicate real fastener applications, which was ideal for the customer.

Customer: One of the world's largest manufacturers of heavy-duty vehicles, plant machinery and engines for multiple industries including construction, mining and quarrying.

The Challenge: To test and audit tooling equipment under the most realistic and authentic of conditions to ensure it is delivering the required level of torque when tightening critical fasteners.

Crane Products: A 1000Nm tJRS joint simulator bench and innovative OMS torque software system.



Global manufacturers of heavy-duty machinery, equipment and vehicles, such as excavators, with production plants located around the world.

The tJRS was supplied with a series of torque transducers and automated set-ups allowing the user to easily configure and switch between measurement specifications. In addition, Crane also supplied an external mount plate for a 3000Nm transducer and joint kit to allow the customer to measure even larger levels of torque.

Crane's OMS software includes a range of functions to provide complete company-wide management of all torque related activities including tool and joint management, tool repair and maintenance histories, quality torque auditing, research and development data storage and transducer and readout calibrations.

The customer utilised OMS alongside the tJRS bench to accurately monitor and store all information about their facilities tool database as well as all repair histories. They were also able to monitor and analyse all of the information about their torque measurement and quality auditing equipment, allowing them to keep track of and prepare for calibrations and tool downtime etc. The software also gave the customer a method of producing tool certification and tool validation processes, auditing of all specified joints and set-ups.

The easy-to-use reporting facility allowed the customer to record, store and distribute all critical assembly tool data for the manufacturing facility.

The customer was delighted with the new torque tool management and calibration solution which allowed them to manage the facilities torque and assembly tools, all from one station and with one software package, giving complete traceability and visibility of critical data and tolling information which allowed them to improve their planning process and reduce production and tool downtime.

The tJRS joint simulator bench stood out above the competitors product for a number of reasons. Unlike typical friction-brake systems, the threaded fastener system of the tJRS is designed for that the threaded fastener does not continue to tighten between pulses which adversely effects the results.

The lower inertia threaded fastener system also meant that tool performance was not affected by the large, high mass, hard to drive braking system. Crane's patented system means the tJRS automatically backs off and resets the nut after every cycle and it is able to automatically reproduce a precise joint rate without having to re-stack washers.

This is just one example of the work we have done with this global customer, as we currently partner with them at facilities across the globe on multiple continents. As well as the torque tool management and calibration solution we have provided in this instance, we have also provided vehicle and engine plants across the globe with additional tJRS joint simulator benches for high power tool auditing, WrenchStar Multi torque wrench and TCI line-side controller packages to communicate with operator guidance systems and our portable TorqueStar torque data collectors and rotary torque transducers for operatives testing and auditing critical fasteners throughout the production process.

For more information about how we can provide a solution for your business, please contact us online at www.crane-electronics.com or alternatively, email us at sales@crane-electronics.com.



An example of our innovative tJRS joint simulator benches, available in ranges from up to 1000Nm.



Locations

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