

## Implementing a simple operator guidance system for a construction equipment manufacturer.

Developing a complete work station with process control for one of Europe's largest manufacturers of heavy-duty equipment.

The customer is one of Europe's largest manufacturers of compact equipment for construction, agricultural, landscaping, ground maintenance and mining industries, with a series of recognised, world-renowned brands.

The customer manufactures a series of market-leading compact excavators, loaders, telehandlers and tractors for a variety of applications within these industries, sold across the globe. For this project, Crane Electronics worked closely with the team of Manufacturing Engineers, responsible for the accurate and precise assembly of the equipment assembled with in the manufacturing plant.

The customer was facing an issue during the testing and auditing stage, post-manufacture, where a series of hydraulic pipe leaks were being identified due to a number of incorrectly tightened fasteners on machinery manufactured on the production line. The cost to the manufacturer due to these issues was escalating due to production downtime and the huge labour and material costs associated with reworking and repairing the equipment.

The current solution used on the assembly line was a range of click torque wrenches with no automatic accurate data recording, often operated by inexperienced operatives.

The customer approached Crane Electronics to help implement a completely new process control procedure with new assembly and auditing technology made especially for these kinds of applications.

Crane suggested the implementation of a new operator guidance system with process control software to manage each individual step of the assembly process, guiding the operator to assemble parts and components of the machinery equipment.

Crane also supplied a series of WrenchStar Multi digital torque wrenches that could record the assembly data, giving the customer a new, paperless and fully traceable system.

The process control software implemented, monitors and controls the assembly process by ensuring that each step in the assembly process, such as the sequence of fasteners to be tightened, is either

**Customer:** One of Europe's largest manufacturers of compact equipment for construction, agricultural, ground maintenance, landscaping and mining industries.

**The Challenge:** A series of hydraulic pipe leaks were being identified during the equipment testing and auditing stage, post-manufacture, due to a number of incorrectly tightened fasteners.

**Crane Products:** Implementing a simple operator guidance system, complete with Crane's WrenchStar Multi digital torque wrenches and TCI Multi controllers.



The customer is a renowned manufacturer of market-leading compact excavators, loaders, telehandlers and tractors for a variety of applications in construction and heavy industries.

acknowledged and completed by the operator on screen, or automatically by the recording of a torque value reading with the WrenchStar Multi.

The digital torque wrenches were also supplied with auto-ID wrench heads, to ensure that correct wrench head for each job, such as fastening the previously leaky hose fittings, was highlighted for the operator. Auto-ID wrench heads allow the WrenchStar Multi to automatically adjust its torque readings, accommodating for the size and length of the particular attached head, making it quick and easy to swap between different jobs.

In addition to the process control software and the series of digital torque wrenches, Crane also supplied all of the required equipment for the whole assembly station including a TCI Multi lineside controller that communicated all of the wrenches readings to the software. As well as an I/O cabinet including stack light, barcode scanner, RFID reader and a wireless push button.

Since the new systems implementation, the customer has been extremely happy with the solution and the results received. The number of incorrectly fastened hose fittings and therefore leak failures identified fell significantly. In addition to this, if there is ever an instance where a component of fastener on the machinery does fail during the quality auditing stage, they now have complete traceability of the assembly process to be able to prove if it was or wasn't fastened correctly during assembly and what potential issues may have occurred to cause the problem.

The customer was so impressed with the solution implemented that they are looking to purchase more assembly stations to implement within their manufacturing facility. After all of the initial training for their operatives by Crane Electronics, the system is now fully maintained in-house by the customer and any future stations can now be installed solely by the customer with support from Crane Electronics available should it be required.

Alex Breen, Technical Sales Manager at Crane Electronics Ltd comments:

“Being able to deliver a completely new process control solution for the customer is something we take pride in at Crane Electronics. We were able to provide a complete, stand-alone assembly station with our innovative torque measurement equipment, to provide the customer with a simple way of guiding the operator through the assembly process whilst also providing the customer with a means of collecting vital assembly torque data for traceability.

We were delighted that the customer was so happy with their new solution and improved process and we look forward to being able to build a great relationship with the customer in the future.”

**For more information about how we can provide a solution for your business, please contact us online at [www.crane-electronics.com](http://www.crane-electronics.com) or alternatively, email us at [sales@crane-electronics.com](mailto:sales@crane-electronics.com).**



The customer manufactures a wide range of compact heavy-duty equipment including excavators, telehandlers, tractors and loaders.



#### Locations

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