

Developing a wheel gun torque and performance testing solution for CES Europe Ltd.

Delivering a robust tool performance testing rig for specialists in the delivery of pit lane equipment to the Motorsport industry.

CES Europe Ltd, based in Banbury, Oxfordshire, required a new performance testing solution for their series of air driven pit lane tooling – in particular, for their wide range of impact wheel guns.

CES are one of the leading suppliers of pit lane equipment in the UK, holding a complete range of new and re-manufactured wheel guns, any and all required spare parts, as well as an extensive range of air cylinders, trollies, air couplings and gantry assemblies.

The tools and equipment from CES are supplied to a wide variety of racing teams across the globe in motor sports such as rallying, touring cars and even Formula 1. In these sports, speed and accuracy in the pit lane is absolutely crucial in gaining a competitive advantage. Teams must look for every opportunity they can to improve their performance against their competitors.

For their tool performance testing solution, CES wanted to be able to prove to their customers that their impact wrenches could achieve a specified torque level, within an allocated time period, as well as providing a trace graph for the customer (torque vs. time) to substantiate these results. Ultimately, CES wanted to show their customers just how quickly their tools could reach the required fastening torque for wheel nuts, under the most realistic fastener conditions for the pit lane environment.

Crane Electronics were approached to provide a solution that could fulfil all of their requirements and replicate the fastener conditions as closely as possible, whilst also being able to measure, display and record the vital data.

We worked closely with CES Europe's Managing Director, Tony Giles, as well as their Service Technicians, who regularly test and service their range of wheel guns. Our aim was to outline their complete requirements and propose our final solution.

We proposed a solution that consisted of a testing unit which would incorporate our series of high-torque static transducers and joint kits for the tool testing, as well as a data collector and supporting software for the overall measurement, display of torque traces and the recording of the data.

Customer: CES Europe Ltd, one of the leading suppliers of pit lane equipment in the UK, holding a complete range of new and re-manufactured wheel guns and all required spare parts and accessories.

The Challenge: To provide a solution that demonstrated that their impact wrenches could achieve a specified torque level, within an allocated time period, as well as providing a trace graph for the customer.

Crane Products: We developed a testing unit incorporating high-torque static transducers and joint kits as well as a data collector and supporting software for recording and communicating the results.



CES are a leading supplier of pit lane equipment to the motorsport industry, specialising in new and re-manufactured wheel guns.

The stand-alone test unit consisted of two up-rated stationary transducers. These were upgraded from our standard stationary transducers to handle the extreme vibrations that the impact tools would transfer during application of testing. The transducers were then each topped with our leading joint kits: one in a left-hand position and the other in a right-hand position. This would give the customer the ability to test their impact wheel guns in different directions: a crucial element in the pit lane environment as different directional tools are required for tightening and untightening on both sides of the car.

The testing unit was then connected to our leading TorqueStar Pro data collector that would display and record the test rundowns in real-time. Crane's OMS Lite torque software was installed on CES's computer system in order to be able to transfer the critical data recorded during use. We were aware that CES's end users would also require the production of torque traces and reports, so we modified and tailored the reporting module of the software to suit the requirements of the client.

Once the project and the testing unit was complete, analysis showed that we were able to provide a solution that was capable of measuring 500Nm in just 0.7 seconds; extremely fast results for such a high torque level. We knew that this would be critical for the client, being able to prove their tools were performing to the peak of their abilities, but it was equally as important for their customers as it would enable them to take advantage of every split second possible.

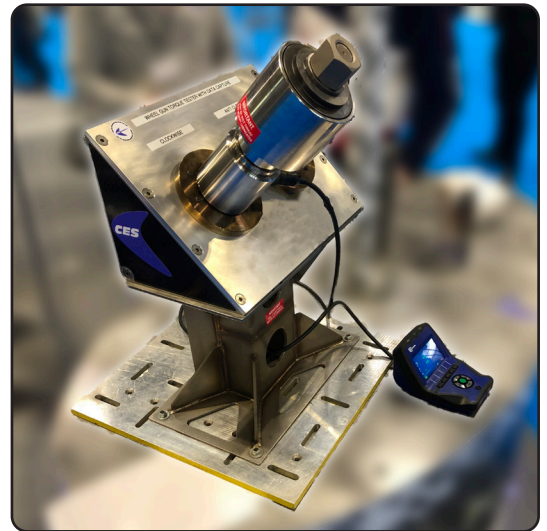
CES Europe Ltd were very happy with the overall solution provided which allowed them to physically demonstrate the efficiency and accuracy of their impact wheel guns to their customers in the motorsport industry. CES were so happy with the solution that they displayed it, along with their wide range of pit equipment, on their stand at the Autosport International Exhibition at the NEC, Birmingham UK, allowing them to demonstrate the performance of their tools in-person.

John Jones, UK Sales Manager at Crane Electronics, who helped deliver the project with CES commented:

"We were approached by CES to work on this project and were really excited to be able to help them prove the speed and accuracy of their pit lane tools. In the Motorsport industry we know that one of the most critical aspects in competition is timing, and in the pit lane this is even more significant.

The performance of fastening tools is highly dependent on the conditions of the actual fastener on which they will be used. Our solution allowed CES to replicate the wheel nut joints and demonstrate and prove the high accuracy and speed of their wheel guns. We were delighted to be able to help them to achieve this."

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.



The impact wheel gun test rig built by Crane, on display on CES Europe Ltd's exhibition stand at Autosport International.



Locations

UK - Watling Drive, Hinckley, Leicestershire LE10 3EY, UK
USA - 1260 11th Street West, Milan, Illinois 61264, USA
Germany - Im Rank 5, 73655 Plüderhausen, Germany

