

Press Release

New service card to remind customers when their measuring instruments are due for a routine check

Torque Measuring in the calibration lab on the test bench

DEPRAG Support: making quality management for screwdriver assembly systems easier

Vehicle manufacturers can tell you a thing or two about it: recall actions harm your image and destroy customers' trust [in your product]. In its annual report for 2009, the German Federal Motor Transport Authority in Flensburg listed a total of 140 recalls, affecting 617,000 vehicle owners. According to the report, 60 percent of the recalls were the result of mechanical defects. At 17.3 percent, vehicle brake systems are frequently affected. An example from April 2009: an incorrect torque was the probable cause of a recall, in which 10,000 owners were obliged to return their compact cars to the workshop. A screw on the rear brake anchor plate was incorrectly tightened. It threatened to come loose and fall into the brake drum. In a worst-case scenario, the rear wheel could have seized.

It follows that preventing screw tightening faults during assembly is of the utmost importance. By implication, it is not only in the automotive industry that producers need to constantly focus on screwdriver accuracy. Modern screwdriver assembly tools are equipped with torque transducers which record, control and log the correct torque during the assembly process. However, these transducers have themselves to be regularly counter checked during the production process, in order to prevent deviations from the standard. For example at a shift change, the incoming production operative checks that the torque transducer is operating correctly. This check is made at an inspection station. Such an inspection station delivers extremely accurate measurement results, but, likewise, must be tested on a test stand at a DKD-accredited laboratory (DKD = German Calibration Service). This is where a recalibration is carried out.

Screwdriver technology experts DEPRAG SCHULZ GMBH u. CO. of Amberg, Bavaria is equipped with one of four DKD-accredited calibration laboratories in the state of Bavaria. Specially trained and skilled staff carries out highly accurate and consistent measurements. Environment control requirements within a calibration laboratory are set high: Essential for accurate measurement results is an even temperature and humidity level, accurate measuring instruments, appropriate measurement equipment and traceable calibrated reference transducers. The DEPRAG calibration laboratory calibrates transducers with a torque range of 0.01 Nm (1 Ncm) to 500 Nm. The smallest assignable measuring uncertainty is 0.1 percent of the measured value.

For DEPRAG customers the routine measuring instrument checks are even more straightforward. When a customer purchases a product for which calibration or inspection is required, he receives a service card, which, once filled in, is returned to DEPRAG. From that point onwards, the customer will be reminded, free of charge and without

obligation, when the product is due for an inspection. Manfred Siegert, After-sales Service Manager at DEPRAG SCHULZ GMBH u. CO. refers to the requirements of the DIN EN ISO 9001:2008-12 standard, which governs the calibration of measuring instruments: "Measuring instruments must be calibrated and/or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards. If necessary, they must be adjusted or readjusted and identified as such so that their calibration status can be recognized". He emphasized: "For DEPRAG customers the new service card makes the quality management process very much easier".

The essential measurement indicator for tightening a screw is the torque. The torque indicates the measurement of the torsion that is exerting a force on a rotary system (the screw). In Germany, as a national metrology body, the National Institute for Science and Technology in Braunschweig is responsible for determining fundamental and natural constants, as well as the units derived from them, such as torque. Regular inter-comparisons between the individual national accredited bodies ensure that the "torque" measurement indicators correspond with one another. In 2008 the DEPRAG calibration laboratory received its DKD accreditation for calibrating torque transducers.

Laboratory manager Carsten Rosenkranz said: "This accreditation is evidence of the many years of our technical screwdriving experts' experience and skill when it comes to making accurate torque measurements. The ability to achieve traceable calibration for all internally used torque measuring instruments guarantees a high level of reliability and precision of our own compressed air and electrically-driven screwdrivers, and supports our customers' quality management processes with regular calibration and adjustment of the measuring instruments and screwdrivers deployed within the production process."

Since in principle each calibration applies only to the moment it was carried out, the process needs to be repeated at regular intervals. The interval between calibrations varies depending on the case. A measurement station which is constantly in operation in the assembly process needs to be tested more often than a measuring instrument that is used only occasionally under laboratory conditions. A thorough inspection and recalibration are particularly necessary if the assembly concerned is subject to a high safety criticality level. Calibration cycles can, therefore, be anything between three months and two years. With the new DEPRAG service card, the task of keeping to these inspection intervals is now made very much easier. On their response, customers simply need to state their desired inspection cycle and they will then receive reminders of inspections becoming due, in good time, and without obligation. It means they will never overrun calibration intervals.

DEPRAG screwdrivers with integral transducers are delivered to the customer adjusted and calibrated. The product range available from the screwdriver technology experts also includes screwdrivers with shut-off clutches, which undergo a machine capability analysis. These tests are carried out against reference measurement platforms, which

are also traced back to National Standards by regular calibration at the in-house laboratory. In this way, DEPRAG can ensure that the screwdrivers and measuring instruments it supplies meet a high-quality standard with regard to measurement reliability. But the customer service provided by this all-around service supplier does not end here. With its new free support service, DEPRAG is able to keep an eye on its customers' measuring instruments. The service includes both DKD and factory calibrations, as well as comparison measurements and machine capability analyses. With its new service card, the screwdriving technology manufacturer is helping its customers to comply with DIN EN ISO 9001:2008-12 and providing the required traceability to National Standards.

DEPRAG SCHULZ GMBH u. CO., based in Amberg, Germany, is an internationally leading supplier of screwdriving technology and automation, air motors, and pneumatic industrial tools. With its 600 employees, DEPRAG is represented in over 50 countries. Its DKD-accredited calibration laboratory adds to the full-service provision for many industrial sectors. With its high level of expertise in screwdriving and applications technology, it carries out torque measurements in almost every field, providing expert knowledge and DKD certification.

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