

Press Release

DEPRAG SCHULZ GmbH & CO., experts in screwdriving technology, receive "The Deutscher Kalibrierdienst" accreditation for their calibration laboratory

Screw assembly error - 15,000 cars recalled to the factory! Headlines such as these shatter car owners' confidence and damage the image of an automobile manufacturer. A car contains around 1200 to 1400 screws and various assembly tools are employed in the automotive sub supply industry as well as by the OEM manufacturer. Diverse safety requirements set high demands on quality management. DEPRAG SCHULZ GmbH & CO. now has a calibration laboratory accredited by the Deutscher Kalibrierdienst (DKD), in which torque testing instruments can be checked and recalibrated with the highest precision.

Roughly 12 kilos of screws are used in the construction of a medium sized vehicle. 15 percent of these are subject to the safety hazard marking "Danger to life and limb". Precision and stability is vital for these components! If brakes fail, a resulting accident could have catastrophic effects. If paneling constantly rattles, although this does not influence safety, it does affect customer satisfaction. Both cases could be caused by an incorrect torque setting. It is then no surprise that the accuracy of assembly tools is top priority for the automobile industry. Therefore modern assembly tools are equipped with torque transducers which are responsible for control, documentation and recording of torque values during assembly.



The precision of a measurement transducer must be checked regularly, for instance by a production employee at shift change. This check is conducted in a testing station. Testing stations meet the highest standards of accuracy, but they in turn must also undergo checks at regular intervals- this is known as recalibration. This service is now offered in-house by the internationally renowned specialists for screwdriving technology, DEPRAG SCHULZ GmbH & CO.



The measurement parameter for the tightness of a screw is "torque". It identifies the rotational degree which exercises force on a rotatable object- the screw. The Physikalisch-Technische Bundesanstalt in Braunschweig is Germany's national metrology institute and is responsible for determining fundamental and natural constants such as torque. All measuring systems are oriented to this value. Globally each individual national authority carries out regular round robin proficiency tests in order to guarantee worldwide conformity to the measurement of "torque". The central requirement for quality assurance in screwdriving is the traceability from the measurement system in use, back to the "national standard". In order to deal with the scope of work required for calibration of every measurement device in operation, the Physikalisch-Technische Bundesanstalt has been supported since 1977 by the DKD (German Calibration Service). In this way the authorities in Braunschweig can focus on high-level calibration and the DKD laboratories concentrate on calibration for industry.

The test laboratory at DEPRAG, one of only four DKD accredited calibration laboratories in Bavaria is run by proficient, specially trained personnel who carry out high precision repeatable measurements. There are also stringent requirements regarding the surrounding environment. Constant levels of both temperature and air humidity is just as important for comparative measurements as precise measuring instruments, appropriate equipment and tested reference transducers. It is possible to determine calibration parameters in a torque range from 0.01 Nm (1 Ncm) to 500 Nm in the new DKD accredited test lab. The best measurement capability is 0.1 % of the target measurement value.

What happens during calibration? An example: A measurement platform used by a car manufacturer to check torque for certain tools during production must itself also be tested and recalibrated. The quality control department sends the platform to the accredited DEPRAG laboratory for a DKD calibration. After in-depth testing and recalibration the platform is returned to the manufacturer along with a DKD calibration certificate on which the exact details of the calibration test results are documented. Those responsible for quality may rest assured that the company internal testing equipment corresponds to the "national standards", that their measurement instruments work precisely and consequently that the quality of screwdriving is guaranteed throughout production.



In principle calibration is only valid at the time when it is carried out. The procedure should therefore be repeated at certain intervals. The frequency varies from case to case. If a measurement station is often used during assembly then correspondingly, it must be tested often. If the measurement equipment is only used from time to time then the intervals can be longer. If the work pieces to be assembled are subject to higher safety standards then more frequent monitoring, testing and if necessary new calibration is recommended. Recalibration periods from three months to three years are generally recommended.

The electric and pneumatic screwdrivers manufactured at DEPRAG must also of course be tested before delivery. As screwdriving specialists, DEPRAG offer a wide spectrum of products including screwdrivers with shut-off clutch which must also be inspected with a machine capability test. These tests are carried out using in-house control measurement platforms which are externally checked and regularly recalibrated. This takes place in their professional DKD accredited in-house laboratory following requirements for traceability to "national standards".

DEPRAG SCHULZ GmbH & CO. is an international leading supplier of screwdriving technology and automation, air motors and air tools, based in Amberg, Germany. The company offers full service for almost every sector of industry and has a team of over 600 employees and representatives in over 40 countries. DEPRAG's expertise in the challenging sphere of screwdriving and applications technology is now accentuated by the DKD accreditation of their calibration laboratory. The company's services now completely encompass all aspects of screwdriving technology by providing an accurate and professional torque measurement service including DKD calibration certificate for every type of threaded fastener assembly.

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