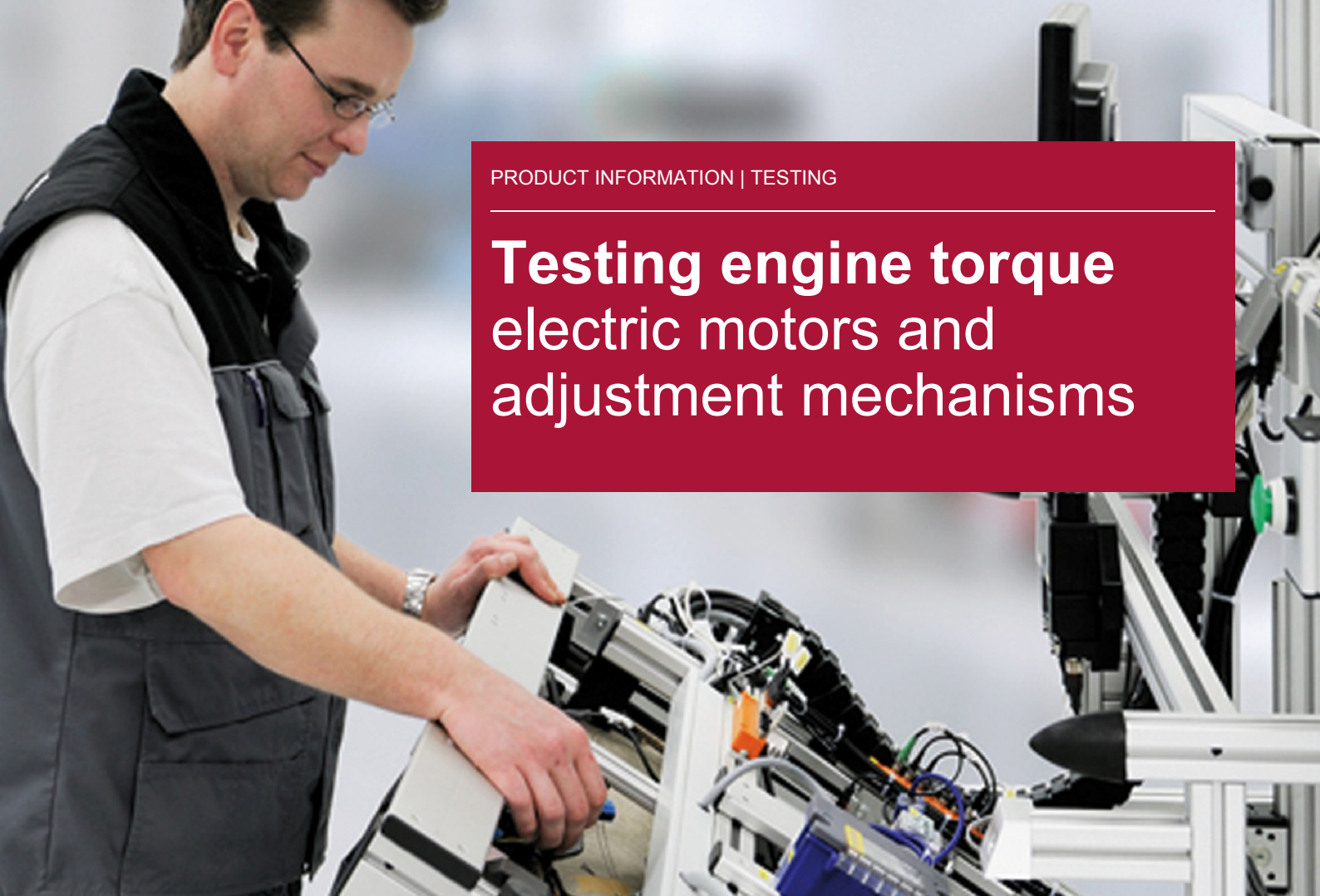


Testing engine torque electric motors and adjustment mechanisms



Load simulation Measuring and evaluating

The standardised test benches for electric automobile motors and adjustment mechanisms are semi-automatic testing stations for electrical and mechanical end-of-line function tests.

A brief description

Typical devices under test (DUT) test objects are automobile modules with servomotors such as tailgate drives, door latches, window lifts and power seats.

The assembly to be tested is mechanically adapted, electrically connected and applied with electrical voltage curves according to the programmed testing procedure. The mechanical function test can contain a load simulation which is able, for instance, to simulate the force curve of a tailgate. The test is conducted by

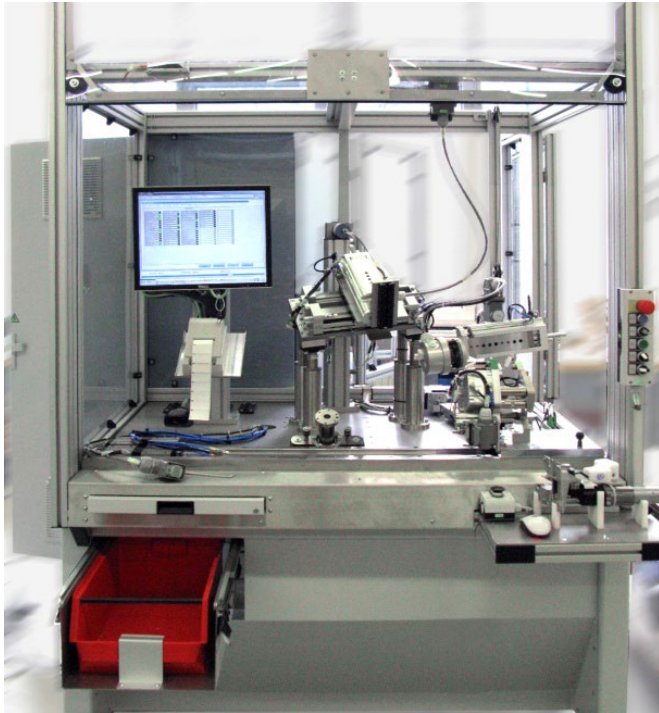
measuring voltage and current as well as force /path and torque / angle curves. National Instruments hardware and software tools are used to collect the measurement data.

The test results are represented visually or outputted in the desired data format.

Functional principle

In order to draw up the test schedule the sequence of test steps is first configured and then the test characteristic to be allocated to which tolerance is specified. In the evaluation the tolerances of the respective test characteristics can then be allocated through individual measurements, statistical mean values or a series of measurements. If, for example, a measurement is outside the tolerance the test process is stopped and the cause of the error is displayed with the measurement data or an alarm signal is emitted.

The test object is placed in a specific fixture, mechanically adapted and electrical connected. Once the test room is closed the test programm starts automatically, and the test object is applied with the specified voltage curves.

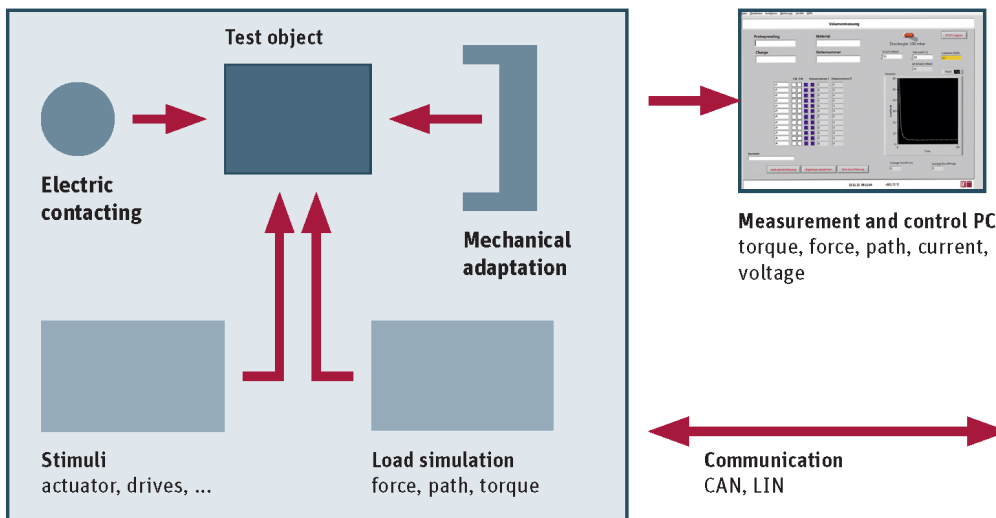


Depending on the test task, current and voltage are measured at the outlet of the test object and compared with the stored set values.

The test object is adapted to a motor that simulates loads with a regulated torque. The torque / angle curve of the test object is recorded; force / path measurements are also possible. IO parts are mark with an appropriate identification while NIO parts are signalled to the machine operator and can be transferred to a separate side track.

Product variants

The testing facilities are customised and include the framework with protective housing and safety features, the testing technology appropriate to the application, controls and an operating panel with graphic user interface. The PC-based hardware and software consists of approved standard components from National Instruments. Additional elements such as identification technology and labelling systems can be added.



Test cells

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