With the new rivet test device from HST it is possible to execute traceable and documented reference measuring of rivet test tools, e.g. of riveters and rivet nut setting devices according to valid norms for the first time.

With help of the calibrated rivet test device it is possible to determine the quality of the tool, to document and subsequently get the release for the A-classified connections.

The execution of the tests always is carried out with the combination of the rivet test device, the original blind rivet or rivet nut from the charge of production and one or more steel stripes, which are similar to the original build parts in consistence and strength.

Besides the quality evaluation of the tool it is also possible to get a conclusion about the rivet connection of the product.

Insofar not only the capability of the tools used in production (MCT – Machine Capability Test) but also the behavior in the process is simulated and documented with the aid of the new rivet test device.

By executing further comparison experiments at a rivet spot a process capability can be proved.

The management and documentation of the data happens, like already approved in the fastening process technique, by the standard software “QS-Torque” with the “QST-Rivets” module.
The rivet test device from HST supports at evaluation of the quality of riveters and rivet nut setting devices. For checking the test devices also original rivets (for example rivet nuts) on according steel stripes are used, which are brought in by a stack into the measuring cell.

With this not only the riveter is checked but also the complete rivet procedure with rivet and steel can be evaluated. The test device is available with stationary layout as well as mobile version layout.

A measuring cell is equipped with transducers for power- and track measurement. The power measurement can be executed up to 20 kN (optional 50 kN on request).

With the measuring cell the rivet power and the rivet track can be measured.

The measuring cell can be used for tests of
- Riveters for setting of blind rivets
- Rivet nut setting devices for setting of rivet nuts

Therefore, only the head of the measuring cell must be exchanged. Alternatively, two measuring cells with the according head can be used.

For the different rivet devices different mouth pieces for the measuring cell are available. The basic equipment of a rivet test device includes the following components:
- Measuring cell with transducer for force up to 20 kN and stroke
- Riveter mouth piece
- 1 x 5er-Stack for blind rivets
- 1 x 10er-Stack for blind rivets
- 1 Set 5er-Rivet test steel stripes with 50 pieces
- 1 Set 10er-Rivet test steel stripes with 50 pieces

The measuring electronic covers the measuring amplifier and transducers for force and stroke.
The test device will be equipped with the following Soft- and Hardware:
- 1 License QS-Torque
- 1 License module “QST-Rivets”
- 1 Notebook DELL for executing the software

The notebook will be installed with the operating system Windows 7 Professional.
It is also possible to install a specific Windows-Client. In this case the sequence of the installation must be discussed. A connection into a company’s network according to the company’s internal IT/guidelines is also possible.

A connection to an existing QS-Torque Oracle database generally is possible. For the mobile usage of the test device the QS-Torque module “Client-Server” for the synchronization of the data between the local and Oracle database is necessary.

The mobile version of the test device includes following additional components:
- 1 x mobile measuring cart
- 1 set batteries
- 1 x Inverted Rectifier
- 1 x Charge Controller
- 1 x Cable reeling

The dimensions of the mobile test device cart are (approx. in cm):
- Length: 110
- Width: 65
- Height: 110

The weight of the mobile test device cart is approx. 200 kg.

Force sensor accuracy: +/- 0,25 %
Stroke sensor accuracy: 0,01 mm
Example for stroke measurement
Comparison of curves from rivet tool and bench with consideration of the extension from the rivet.

Example for force measurement
Comparison of curves from rivet tool and bench.

The delivered software supports the direct connection (interface) of the PowerRiv® and NutBee®. With those riveters evaluations of both measuring parts (rivet device and measuring cell) together are possible.

Riveters without the data interface can be tested also of course. But in this case only the data from the test device is available for the evaluation.
Blind rivet setting tools

Example for complete evaluation (Cm/Cmk)

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![Graph showing data points and lines for forces and paths in a measurement context.](image-url)