Final Inspection Gear
-Seskion GmbH-

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General

The testing software was developed for a customer for the final testing of gearboxes and uses various measuring devices from different manufacturers. The previous problem was the use of the various test devices and the resulting error rate and the enormous test duration. With the software now in use, the tests can be automated and done in parallel. The tester has a user-friendly interface that is customizable as well as clearly laid out. The result is a reduced test duration, a reduction of the error rate and a complete test protocol.

Problem	Solution	Result
- Various measuring devices - Susceptibility to errors - High test duration	- Customized software - Automated and parallel execution	- Reduced test duration - Reduced error rate - Complete reporting

Microsoft Visual Studio, C# (.NET Framework 4.5) and NI Measurement Studio were used for programming and development. The individual measuring devices were inserted into the software by means of plug-ins, so that further measuring devices can be implemented very easily.

Codes on the test parts are scanned into the software by a scanner. The software retrieves order data and the serial number configuration using an implemented interface to the database (MS-SQL) and compares this with the current data. Likewise, after the test, the measured values are stored in the system for seamless logging and can be retrieved at any time.

The measuring devices used here are as follows:

- Linear Gauge Counter
- Sound and vibration measurement
- Analog I/O Cards
- PLC control

Software insights

For the Quality Management it is necessary that the mechanic logs in with his name. When comparing the current test results with the database, this name is always logged.
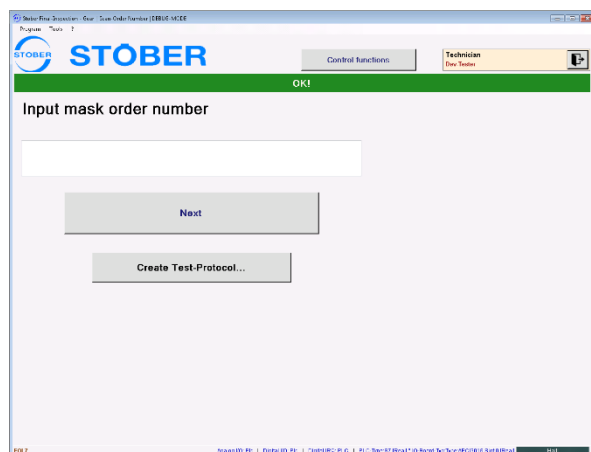
The order data can also be entered manually in an input mask in the same way as here. Usually these are loaded automatically from the system after scanning the code.

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Below you can see a graphical display of a test result. The Measurement Studio from National-Instruments was used for this display. The graphical display makes it easier for the tester to detect errors in the test procedure.
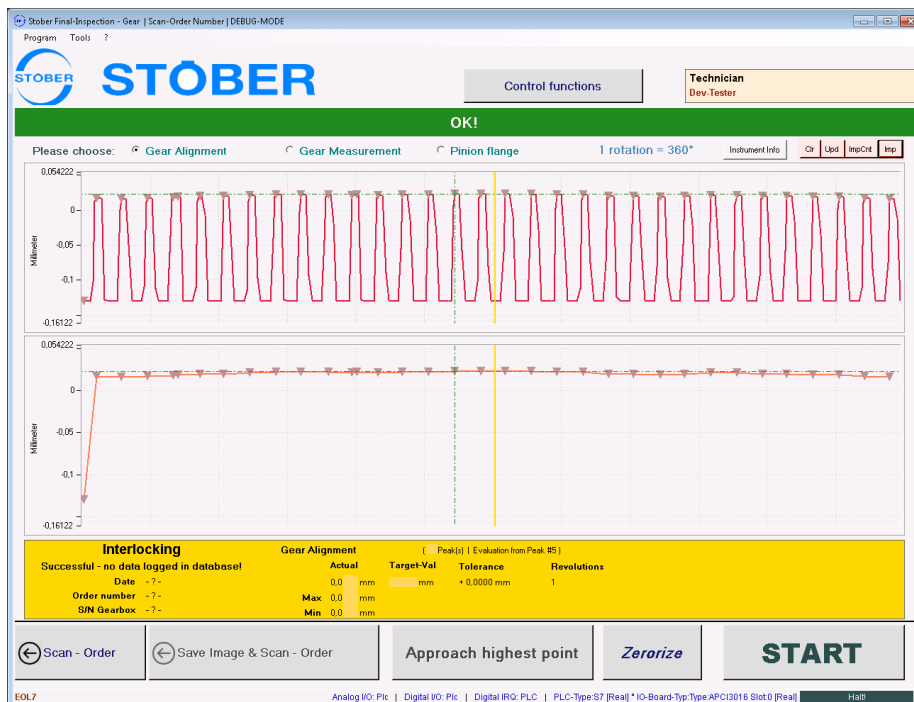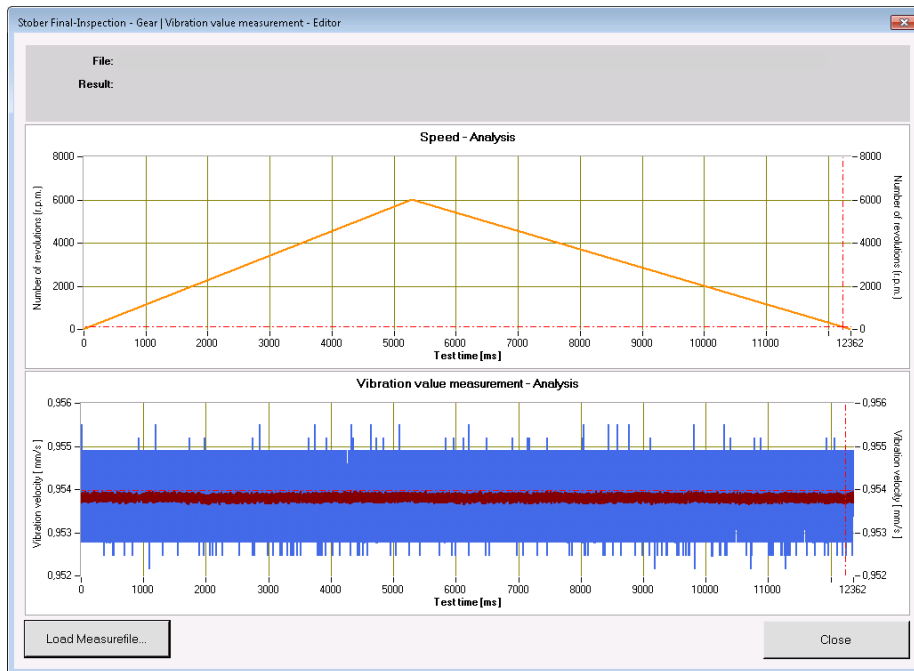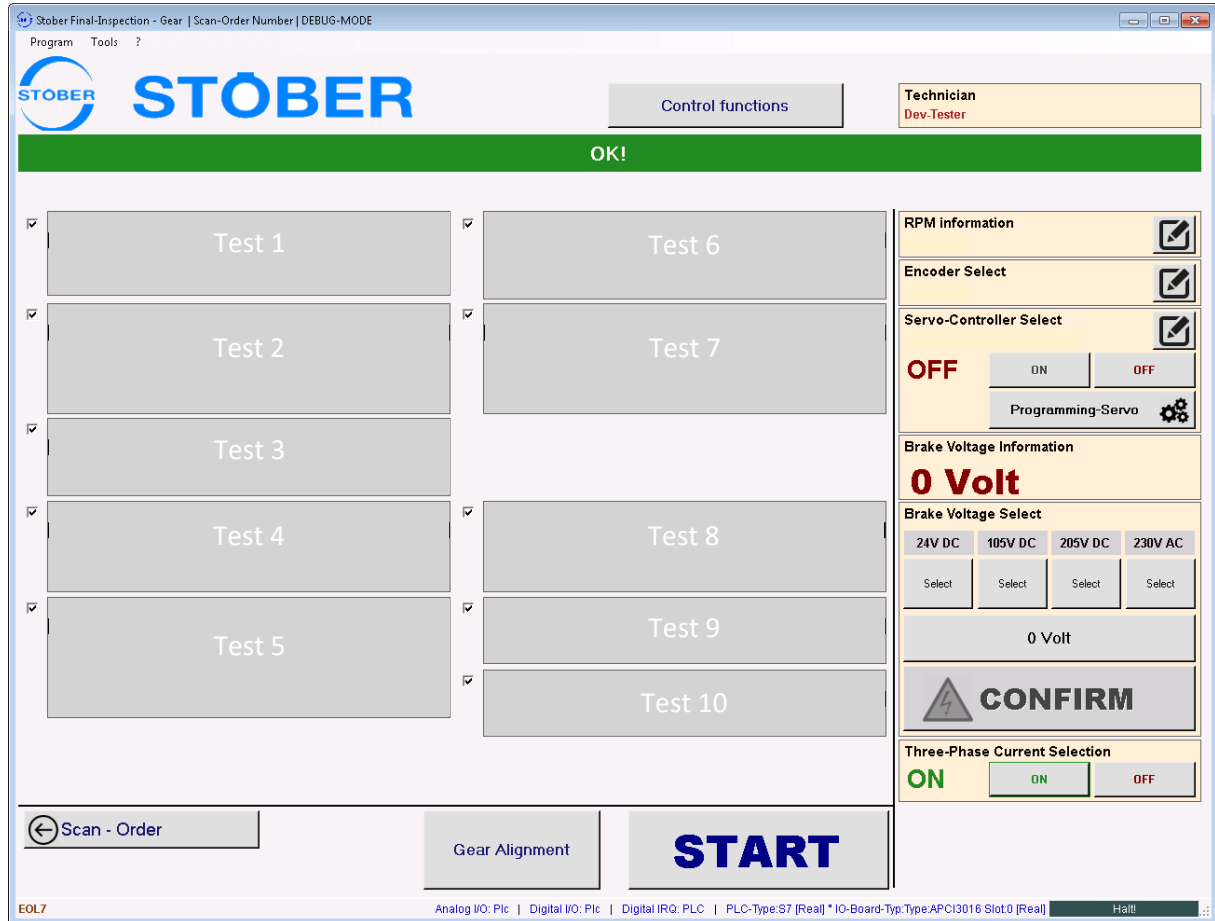
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All individual tests can now be performed via a user-friendly interface. Here in this example, all individual tests are displayed and can be performed in parallel.

The database can be used to specify which individual tests must be performed with which test values (target values, tolerances, etc.) on an order-specific basis.

At the end of the test procedure, all test results are stored in the database. This data can then be used for research & development or quality management.
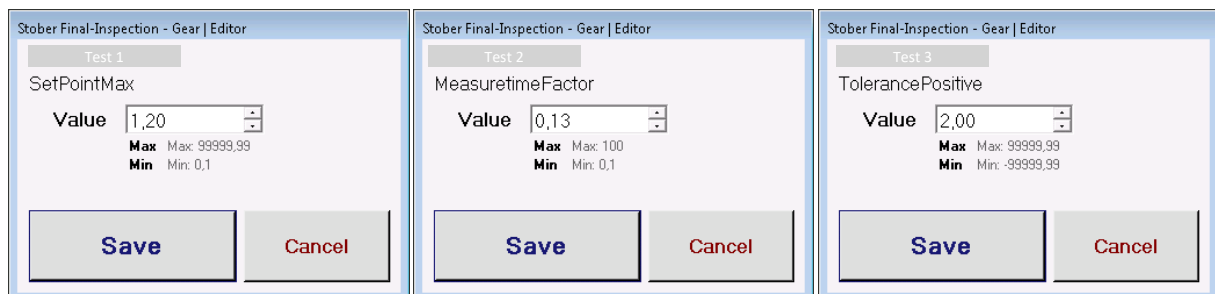
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Of course, errors, warnings and notes can also be displayed via the interface.

This can be individually adapted and configured depending on the type of error. In addition to the safety of the device to be tested, the safety of the tester is always in the focus here.
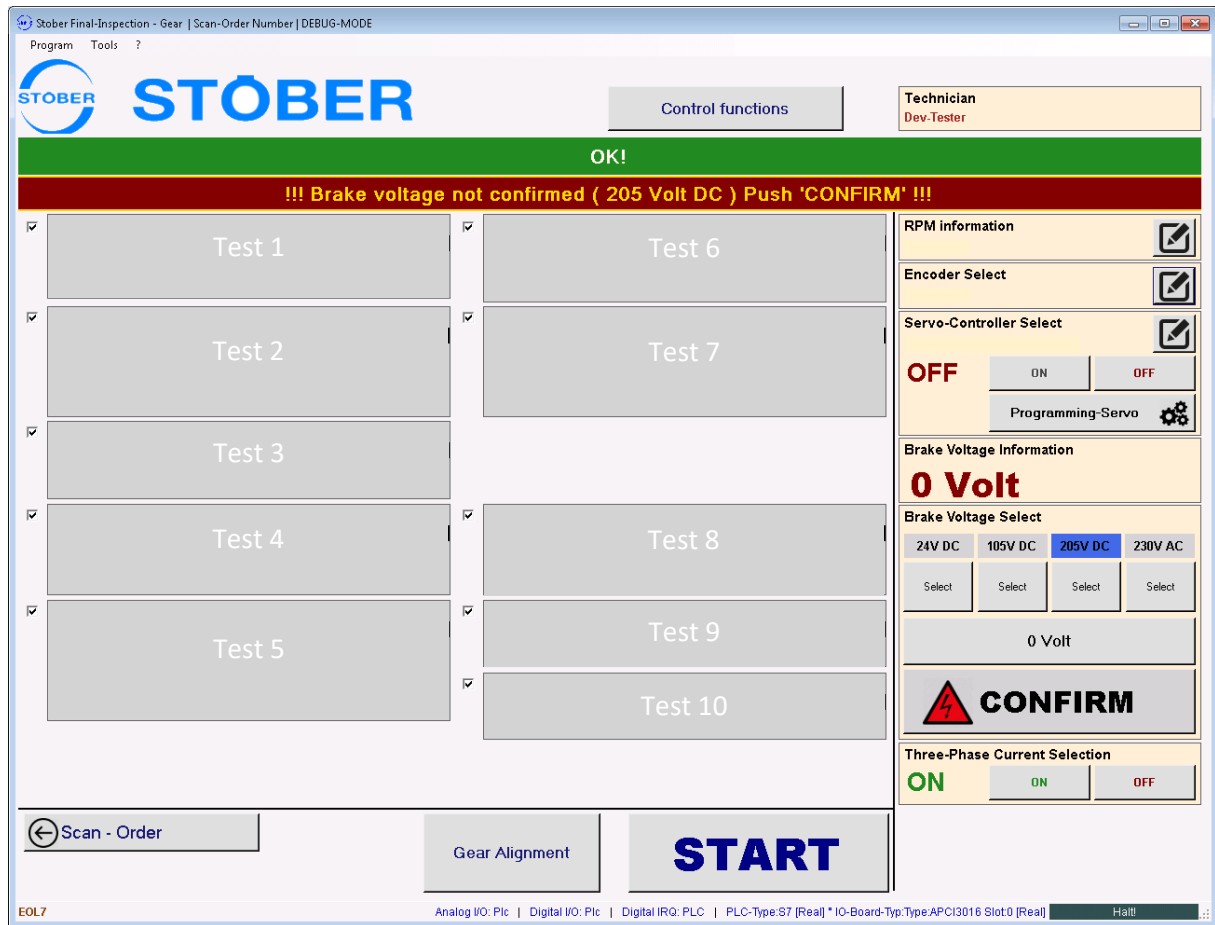
In the manual test sequence, all factors such as the target value and the tolerances can be set via the interface.

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The configuration of the software is password protected. This ensures that only a certain group of people can make important changes to the individual software.

The software is used at several test stations, so there is a database access where all test stations can be configured with only one input. Therefore, when parameters are changed, only one input has to be made and no one has to run through each test station individually and change the values there.

All important changes can be made via the configuration. All data is stored both locally and cloud-based in an XML file.