

Laboratory and production testers

D&V Electronics

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Ensuring high accuracy at all times is vital to meeting the demanding time crunch of the production environment

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➤ The compression of manufacturing processes into ever-shorter time windows is a never-ending challenge. A consequence of this trend is that the accuracy of the test results can be jeopardized in the rush to complete this step of the manufacturing process. D&V Electronics has met this challenge by providing accurate and thorough test equipment that performs and completes tests within the brief time allotted in the established production cycle.

D&V Electronics is a manufacturer of test benches for vehicle mechatronic systems and components, specializing in rotating electrics testing. D&V brings to market testers for electric vehicle propulsion motors, inverters, starter motors, alternators, and related subcomponents. The company's test benches are found in R&D labs, on the production floor, and in the aftermarket. By optimizing processes and automating part handling, D&V's production tester portfolio is freeing up production staff.

D&V Electronics is able to compress tests to fit the production cycle. For example, the latest SST-162 Solenoid test bench performs testing routines three times faster than previous solenoid test benches by performing tests while concurrently analyzing data. The ST-138 starter motor test bench has multiple test cell stations on a rotary



CLOCKWISE FROM TOP LEFT: D&V's ALT-262 automated end-of-line production test system; the EPT-100 electric motor and powertrain test system; the SST-162 fully automatic in-line solenoid tester; the ST-138 starter tester, which has a high throughput, for production testing

table, thus allowing tests to be completed while simultaneously loading and unloading other stations.

Many D&V Electronics machines are equipped with proprietary high-speed data acquisition and measurement systems, which collect more than 100MBps of data. This vast amount of measured data is scrutinized in detail to better recognize fault signatures and other anomalies. In the case of motors and generators, this means fewer rotations are required and test times can be reduced, or additional test parameters can be collected within an allotted time. This speed and accuracy is particularly important when testing larger motors, with more rotating mass, where bearing and torsional vibrations would otherwise take more time to verify.

The D&V Tester Software suite now includes a workflow designer that helps quality engineers to optimize and synchronize material handling and test execution. In addition, the latest D&V test benches include visual troubleshooting windows for easy and quick assessment of machine I/O and fault conditions. Production staff are now able to quickly isolate and resolve issues, and reduce equipment downtime.

D&V Electronics has integrated machines directly into conveyor-fed production

lines for starter solenoids, electrical powertrain motors and alternators. Parts arrive on pallets to the test station where engagements, connections and testing are all performed automatically. A four-axis robot arm can be integrated into the test bench, for example the ALT-262, to precisely and repeatedly make electrical connections to the device under test. One advantage of this solution is that changeover time between one part's setup and the next is greatly reduced.

In those cases where parts cannot be oriented for testing on pallets, a robot arm can be integrated to precisely load and unload parts. The ST-120 is a starter test bench that has been designed for robot-based material handling.

Once parts are loaded and the test sequence begun, the test bench can automatically engage parts and processes. For example, the EPT-126 vehicle motor test bench has automatic spline shaft engagement that is made once the motor is securely located in test position. This increases the test capabilities and greatly reduces part setup time, providing more time for testing and other activities. ◀