

EPT & BST SERIES

EV/HEV ELECTRIC MOTOR, INVERTER & BATTERY TESTING SOLUTIONS



D&V Electronics' EPT and BST technology delivers Insight to clients, based on our 10 year history of testing electric motors and drives.

Always Testing the Future®, D&V Electronics develops solutions for Performance evaluation, Endurance validation and Production testing of hybrid / electric vehicle motors, ISG / BSG products and inverters & drives.

EPT SERIES

The EPT Series of testers are developed and offered as open, modular solutions that provide complete product testing platforms. As a leader in the automotive testing industry, D&V seamlessly integrates our world-leading technologies in data measurement and analytics with bespoke dynometric powertrains. The result – accurate and trust-worthy readings and calculations that allow our clients to thoroughly explore and define their products' performance, reliability, durability and safety.



SOFTWARE

D&V tester software provides a simple-to-use and configurable user interface (GUI) and a functional back-end of the test system. The GUI allows users to create custom displays from a



rich set of visualizations including scopes, plots, formula editing and status monitoring. Testing scripts (via visual flowchart or text-based with Intellisense) allow flexibility in creating exacting test profiles. Scripts, reports, and GUI visualizations can be combined into Studies that can be stored for future re-use. Users have complete access to all measured raw data and calculated values for complete plotting flexibility via D&V's plot engine and tool set. Drag and drop profile generation and vehicle simulation tools add to the user's ability to re-create real-world demands in a test bench environment.

DATA ACQUISITION & MEASUREMENT

Extremely fast data acquisition and data processing technologies allows for signals such as voltage, current, torque, power, efficiency, resolver feedback, rotor position and analog signals to all be captured and synchronized. This allows the viewing of instantaneous dynamic performance of measured signals, calculated values and references, all at the same synchronized clock speed.

POWER & SPEED

The EPT Series dynometric powertrains are designed and selected from around the world to exceed customers' specific testing needs, and include in-built modularity and flexibility. Our systems have accommodated traction motor speeds exceeding 25,000 rpm, torque levels to over 1300Nm, and BSG / ISG acceleration requirements up to 5000 rad/s².

BATTERY SIMULATOR & POWER SUPPLY

D&V's peerless, in-house developed, Programmable Battery Simulator and Power Supply systems provide wide ranging voltage and current outputs, programmable internal resistances, extremely fast switching and unparalleled stability. Operation is permitted in both stand-alone mode or integrated system mode. In either mode, D&V's operation control, monitoring and measurement allows for complete end-user control, and safe system operation.



ENVIRONMENTAL

Optional environmental testing capabilities allow the EPT and BST Series of testers to replicate a full range of climatic conditions with thermal chambers that include humidity, liquid nitrogen cooling, oil & water/glycol conditioning systems. D&V's sound and vibration software for production, durability and performance systems includes new state of the art automatic fault detection and diagnosis technique that removes reliance on humans for problem detection.

AUTOMATION

D&V has developed multiple part load/unload and electrical connection systems for motor and inverter testing solutions, specifically suited for the client's volume production environments. Rapid, precise test results are combined with labeling systems, pin stamp and reject bin options.

TESTING APPLICATIONS

The D&V approach to testing solutions is a system of state of the art components and systems assembled to exceed the customer's needs.

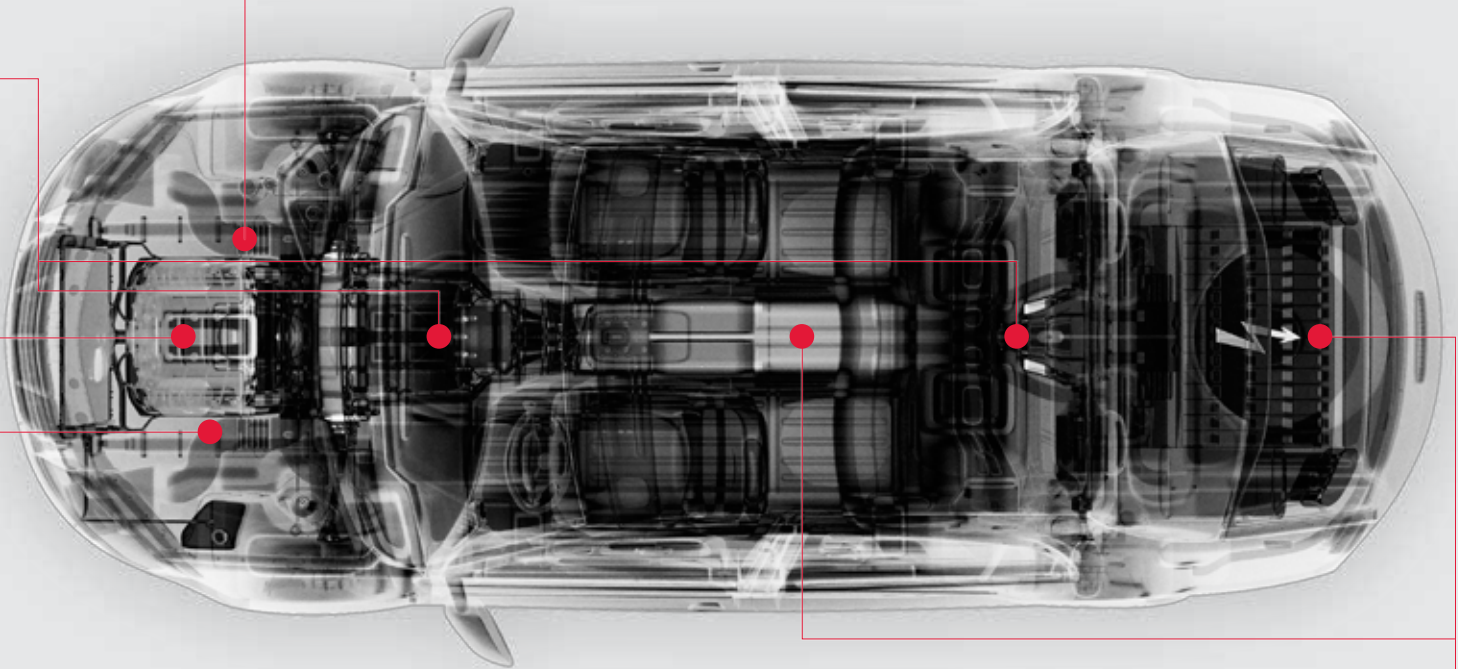


ELECTRIC / TRACTION MOTORS

D&V's e-motor testing solutions are designed to be a complete development, testing, and validation platform for the design of EV and HEV systems. Designed to emulate real-world scenarios to stress and measure the electrical, mechanical and thermal characteristics of a wide range of e-motors addressing the needs of both light and heavy-duty applications.

INVERTERS

D&V's inverter testing technologies create a complete development, testing and validation system which can be a standalone solution or incorporated into other, larger testing configurations. The tester measures and checks the electrical characteristics of the inverter, including power (mainly IGBT) losses, protection circuits operation, position feedback processing, temperature reading, DC/DC characteristics (if present), interfaces, digital inputs etc.



ISG / BSG

D&V is ready with multiple solutions for 48V system testing. Fully customizable automatic tests measure complete BSG performance curves (comprising output torque, mechanical & electrical power and efficiency). In addition, BSG performance can be assessed when in motoring and/or generating modes, and at programmable voltage and battery resistance levels.

BATTERIES AND SYSTEMS

D&V's battery testing technologies can be integrated into e-motor and inverter testing solutions for a systems based approach to testing energy flow and storage. These systems are also available as stand-alone solutions for cell and battery-pack testing, and can include vehicle simulation. The BST architecture is designed to be high-fidelity, modular and expandable to allow real-time analysis of different battery capacities and chemistries in both charge and discharge modes.

PRODUCT PROFILES



ISG / BSG & 48V - EOL / PERFORMANCE / ENDURANCE

- Single unit or dual unit test stands available
- Peerless Regenerative power supply technology
- Belted and direct-drive configurations available for 48V BSG/ISG systems



E-MOTOR & DRIVE - LABORATORY / PERFORMANCE

- Enhanced product development and analysis functionality
- High-fidelity measurement and data acquisition system with sampling rates up to 10Ms/s
- Extremely fast switching and unparalleled stability in power controls



E-MOTOR & DRIVE - ENDURANCE

- Durability and validation testing functionality
- Thermal chamber control/DUT coolant conditioning capabilities for full environmental simulation
- Continuous drive cycle testing, complete with Drive profile simulation capabilities



E-MOTOR - PRODUCTION

- Automated or semi-automated load/unload for end-of-line, or in-line systems
- High accuracy power, NVH and resolver position testing
- Can be integrated with plant automation and production line activities
- Available with integrated part identifying and marking systems that also report to production SCADA systems

INVERTER, CONTROLLER & DRIVE - EOL / PERFORMANCE / ENDURANCE

- Complete testing of multiple e-motor and controller configurations
- Performance testing with load motor, or with motor emulation
- Endurance testing capabilities with or without thermal chambers
- Production testing with or without coolant



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