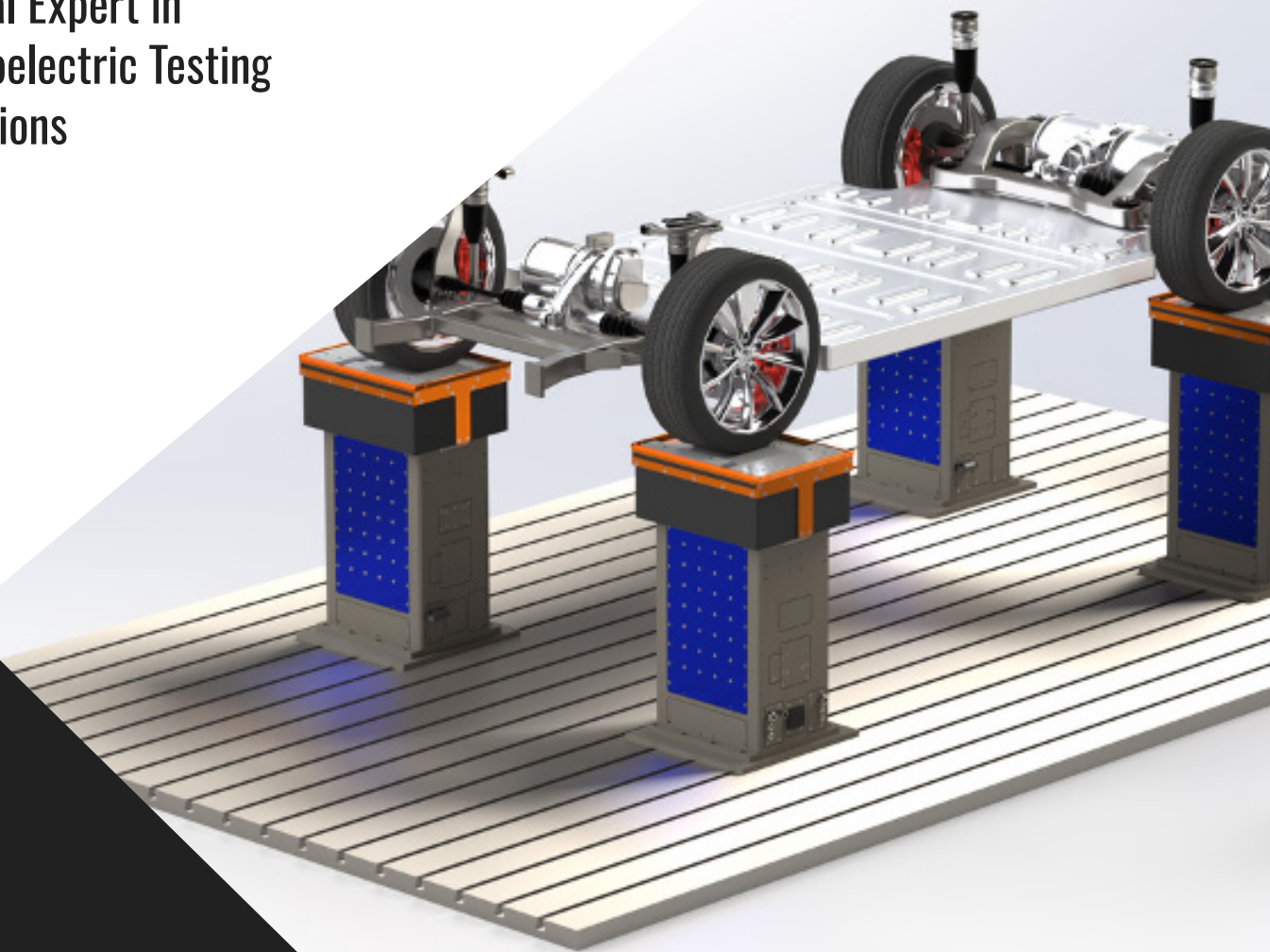


Electric Modular Test Systems

Global Expert in
Servoelectric Testing
Solutions



REV. 1.0 OCT2025

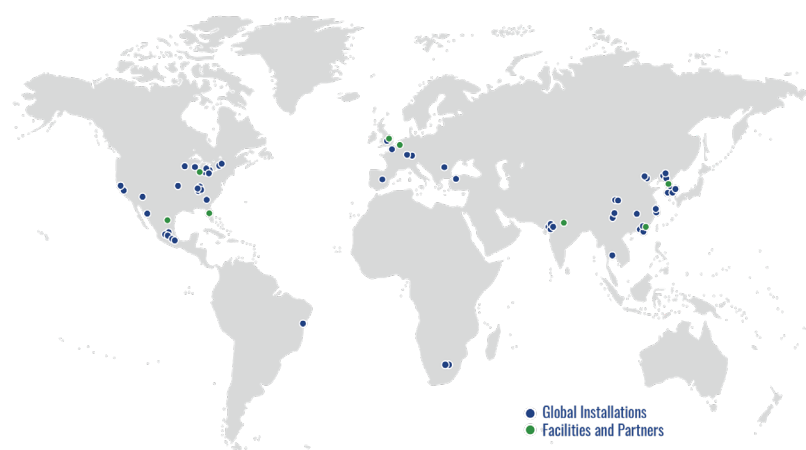
eMpulse
test systems

eMtest - Electric Modular Test Systems

A configurable test platform utilizing four servoelectric actuators , arranged in either vertical or horizontal orientation. Each actuator can operate independently or in coordinated motion, enabling a range of test modes including static, fatigue, and dynamic loading.

Designed for flexible test setup with interchangeable fixtures and adaptable control logic. eMtest supports synchronized multi-axis control, independent channel operation, and load sharing configurations. Applications include structural component testing, material property evaluation, and subsystem-level simulation under controlled force, displacement, or velocity conditions.

The modular design allows for rapid reconfiguration to match specific test requirements while maintaining high resolution, low noise, and closed-loop control fidelity.



Advantages

Increased Performance and Accuracy

High-Resolution Optical Encoder Feedback: Motors equipped with high-resolution optical encoders capable of achieving an impressive resolution of 10nm (0.00001mm). This level of precision ensures accurate measurement and control, enabling detailed analysis of the design under test (DUT) performance under various conditions, and unmatched repeatability.

Fully Digital Signal Processing: Signals are processed digitally, eliminating noise and signal drift that often plague analog systems. Digital processing enhances reliability, particularly in high-demand testing environments.

Proven Software Integration: Ensures seamless integration into existing workflows, reducing setup time and improving operational efficiency.

Real-Time Digital Communication: Components within the system are interconnected via real-time digital communication protocols. This architecture minimizes latency, enabling rapid adjustments and maintaining synchronization across the system.

High Fidelity and Low Noise: High fidelity 32-bit closed-loop control ensures smooth, accurate motion across all test speeds, without switching valve types or control strategies. The system's design prioritizes signal integrity. Low noise levels enhance the accuracy of test results, particularly in scenarios requiring fine resolution.

High Frequency Response: The eMpulse systems support high-frequency response, critical for replicating dynamic conditions in real-world scenarios.

Greater Efficiency

Direct-drive electric motion is more efficient than hydraulics - resulting in only 1/5 of the energy consumption, no fluid handling, reduced maintenance, and a cleaner test environment.

High-Frequency Capability

Motor coherence up to 400 Hz enables test profiles that demand high dynamic response, exceeding the capabilities of servo-hydraulic actuators.

Thermal Management for Extended Testing

Increased efficiency in converting electrical to mechanical energy, results in significantly lower heat generation. This improved efficiency reduces the size of the active cooling infrastructure, minimizes thermal loading on components, and contributes to lower overall operational costs.

Advantages

Improved Troubleshooting

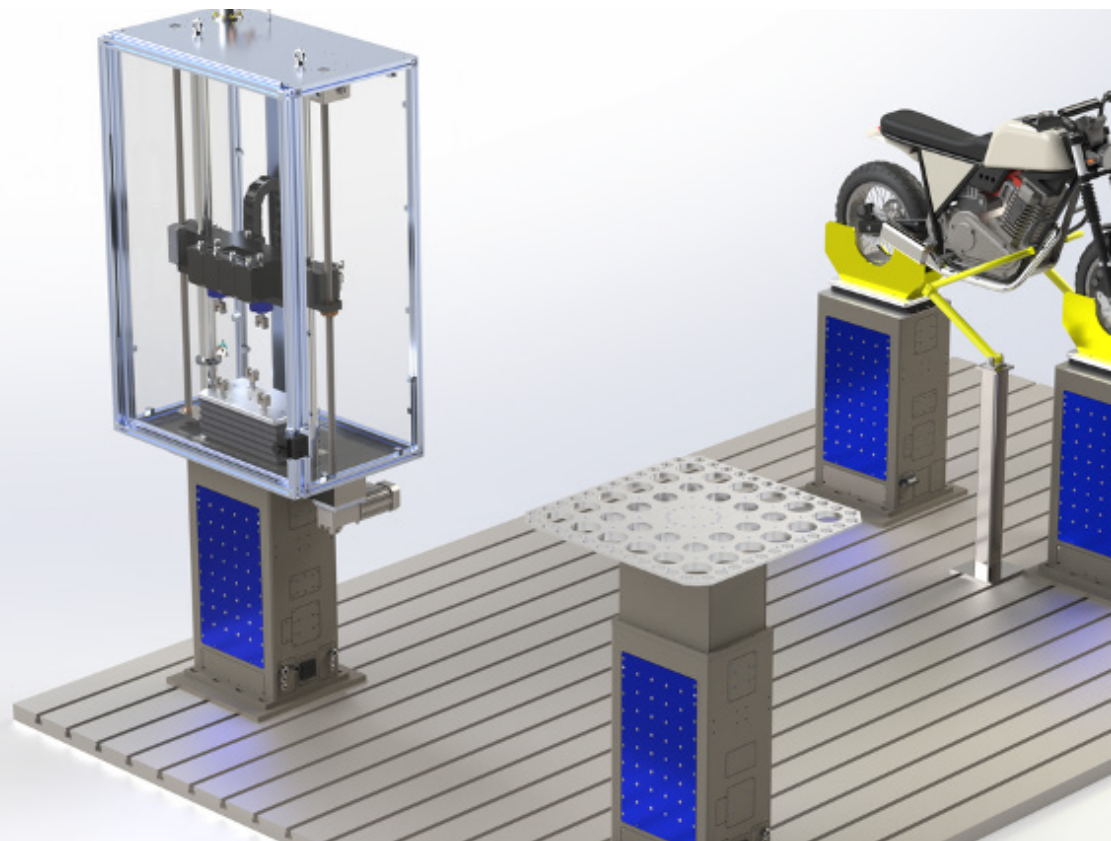
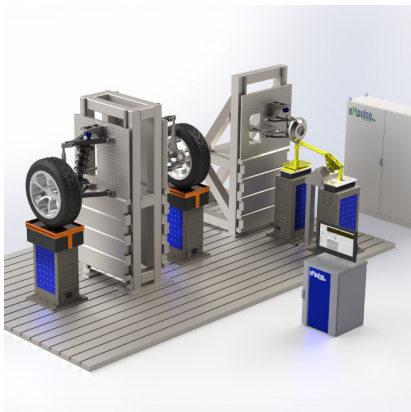
Smart diagnostics capability within the controls can direct operators to the specific hardware causing a fault condition. Remote log-in capability allows eMpulse engineers to aid in troubleshooting anywhere in the world.

Solid Welded Construction

Precision CNC machined and ground surfaces to 0.0001" tolerances to ensure perfect alignment for system longevity. Nickel plating surfaces resist long-term corrosion better than zinc, powder-coating or paint.

Improved Reliability

A less complicated actuator assembly resulting in fewer parts yields an increase in reliability and lower maintenance costs.



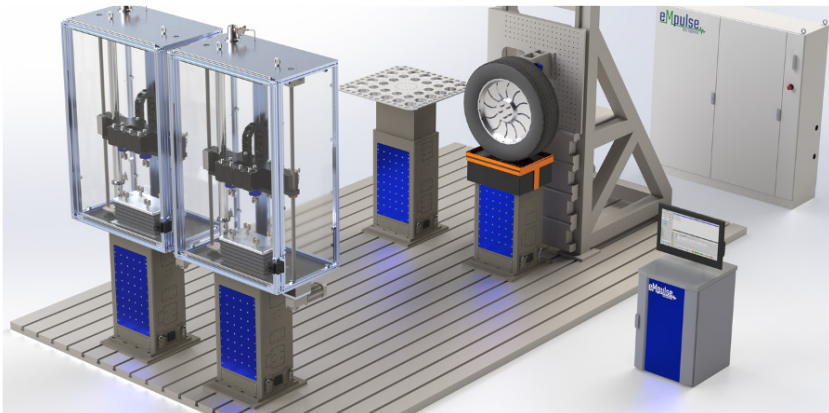
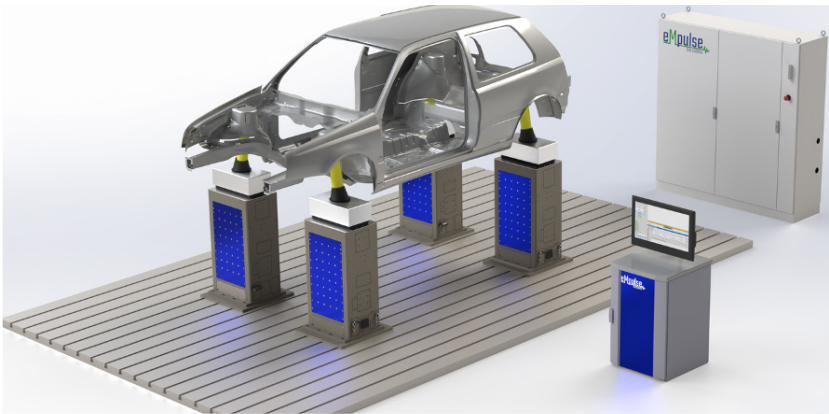
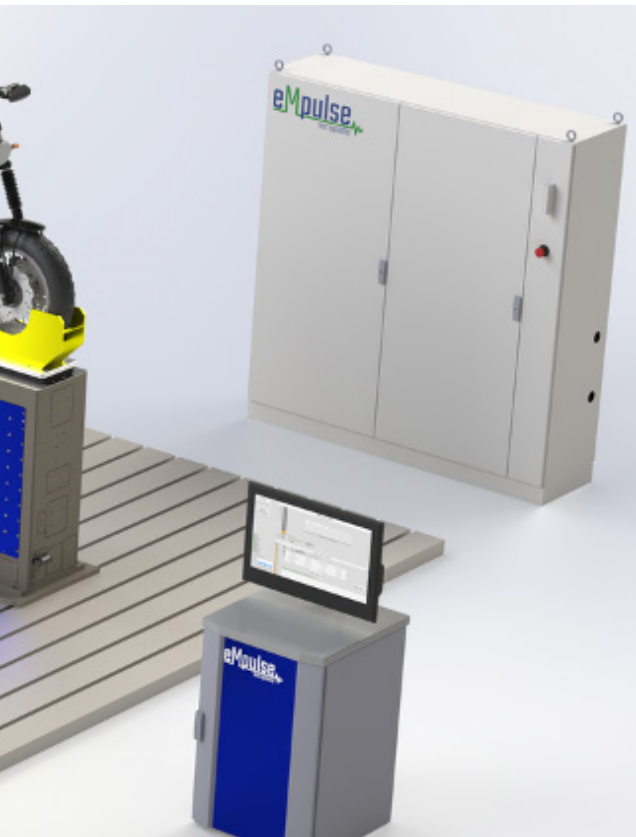
Integrated Safety Features

Our actuators are compact, easy to install, and require minimal maintenance, resulting in lower overall system costs. These features are built into the control architecture to ensure operator safety and specimen integrity during every test cycle. Every system includes comprehensive safety monitoring:

- Safe Limited Speed (SLS)
- Safe Limited Acceleration (SLA)
- Absolute encoder fault detection
- Safe Torque Off (STO)
- Internal motor/drive temperature monitoring
- Customizable specimen-specific protection limits

Reduced Maintenance

Servolectric actuators are compact, easy to install, and require minimal maintenance, resulting in lower overall system costs.



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