



FULL VEHICLE VIBRATION TESTING (N-POST)

Combat Capabilities Development Command (CCDC) Ground Vehicle Systems Center's (GVSC) Physical Simulation Team (PST) has three separate test beds that contain Hydraulically Powered Vertical Actuators. Through multiple data collection efforts, we are able to simulate displacements and accelerations to bring a real world test profile to vehicles with up to 5 axles, and 80,000 lbs. Advantages to laboratory simulation include repeatable inputs for part qualification, compressed testing for shorter durations, and significantly decreased costs.

Analysis Capabilities

- Fatigue Damage Estimation
- Mean Miles Between System Abort
- Statistical Time History Editing
- Cycle Counting Analysis
- Data Acquisition
- Ability to record several channels on various on-going experiments
- In-house and portable field data acquisition systems
- Acceleration, Strain, Rotational Rate, and Displacement

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3 Axle / 55,000 Lb Wheeled Vehicle



6 Road Wheel / 75,000 Lb Tracked Vehicle



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Vehicle Capacity

- up to 5-axle wheeled vehicles
- up to 12-road-wheel tracked
- up to 80,000 GVW

Actuators

- (16) -38 kip, 20 inch stroke
- (5) -11 kip, 14 inch stroke



2 Axle / 18,000 Lb Wheeled Vehicle

Benefits

- Able to replicate vehicle loads per the Operational Mode Summary/Mission Profile and all Army test sites.
- Reduced cost and schedule in comparison to traditional track testing.
- Observation of test specimens in motion allows the test engineer to evaluate the vehicle negotiating difficult or problem-causing terrain.
- Controlled environment for repeatability of previous test conditions, eliminating changes in motion due to time, the driver, and weather or test parameters.
- ISO 17025 Certified.

FOR FURTHER INFORMATION:

U.S. ARMY COMBAT CAPABILITIES
DEVELOPMENT COMMAND — GROUND
VEHICLE SYSTEMS CENTER:

<https://tardec.army.mil/>

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