



High Dynamic Wheel Replacement Dynamometer

System Content

MTS LOW INERTIA DYNAMOMETERS

- » Permanent Magnet dynamometer
- » In-line torque measurement
- » Speed measurement
- » Lubrication and cooling support

MTS POWER ELECTRONICS

- » Vector control drive
- » Isolation transformer
- » Power cabling

MTS DIGITAL CONTROLLER

- » Speed and torque control
- » Advanced controls such as inertia simulation, traction simulation and real time vehicle simulation in combination with Simulink models
- » Data acquisition, scheduling, data reporting and analysis

MTS INSTALLATION AND SUPPORT SERVICES

Introducing the MTS Series 323 MAST Virtual Test Lab. This new technology from MTS lets you evaluate a broad range of ADAMS based automotive components and subsystems models using an ADAMS model of the test system to apply the vibration forces in exactly the same manner as in a physical test.

Typical automotive components tested on the Series 323 Virtual MAST and standard MAST systems include radiators, instrument panels, engine mounts, fuel tanks, seats and similar components and assemblies.

The MTS MAST Virtual Test Lab, like the actual system, provides up to six degrees of freedom of motion and up to three auxiliary control channels. These additional channels can be used to control torque input fixtures. Controlled motions include: vertical, lateral, longitudinal, pitch, roll, and yaw. These inputs reproduce the inertial vibration environment typical of automotive bodies, subsystems, and components.

ADAMS dynamic models are easily integrated into the MTS MAST Virtual Test Lab. This allows you to simulate physical system simulations prior to actual physical testing. The virtual tests are run using the same interface that you will use during the physical test. FlexTest® or RPC® (Remote Parameter Control™) control systems and MTS hydraulics are modeled in this system giving you the most accurate reproduction of testing loads for validation of component or vehicle models. Training and system operational issues can also be accomplished prior to completion of physical prototypes so your operators can begin testing as soon as a specimen is available. Using the MAST Virtual Test Lab ensures that the data collected is already in the same format, speeding correlation and analysis of physical test results.

be certain.

System Specifications

- » Rated Torque: 2500 Nm continuous, 4100 Nm peak
- » Maximum Speed: 3100 rpm
- » Inertia 0.6 kg.m²
- » Acceleration Rate: 65,000 RPM/s

Summary

MTS Systems Corporation is pleased to present its wheel replacement dynamometer dedicated to the testing of transmissions and other Drivetrain components. The combination of low inertia, high torque and short response time make this dynamometer suitable for several applications such as traction control investigation and NVH testing.

MTS offers the integration of this dynamometer in a complete system, including input and output dynamometers for different test applications such as transmission only, or complete driveline testing, in 2WD or 4WD configurations. The digital system proposed by MTS can control all the dynamometers in coordinated modes that are representative of the vehicle operation. It includes engine simulation, inertia simulation and vehicle simulation. Real time models can be used to link the test bench operation with a vehicle model driving on a virtual track.

The system can also connect to the specimen controller and exchange information that would normally be found on the vehicle CAN network.

MTS Testing Experience

Since 1966, MTS has leveraged its unrivaled precision force and motion control expertise to deliver testing products that help customers accelerate and improve their design, development and manufacturing processes. From automobiles to aircraft, from bridges to buildings, from medical devices to

nanotechnology systems, MTS delivers the high-performance test equipment, state-of-the-art software and industry know-how required to create superior products and build a safer, healthier, cleaner and more productive world.

Visit our web site at: <https://www.mts.com>



Example of installation for F1 Gearbox testing (with specific high speed input dynamometer)



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