Bearing TestStand – 5 DOF

THE MTS TESTSTAND APPROACH

The MTS TestStand approach enables OEMs, suppliers and contract test labs to adapt to evolving vehicle subsystem and component testing requirements with speed, efficiency and confidence.

The MTS TestStand approach is designed to offer the cost advantages of an in-house system, but with faster deployment and less risk. Essentially, it is a collaborative effort between the test lab and MTS to define specific test objectives and then determine how best to achieve them within the available budget and timeframe.

TestStand solutions leverage more than four decades of MTS ground vehicle testing expertise, as well as high-quality MTS TestLine™ components. To keep costs in check, MTS works closely with customers to determine which elements of the test system they can machine in-house or manufacture locally, with our guidance.

BEARING TESTSTAND

This TestStand is designed to test and validate the durability and performance of automotive bearings by imposing block cycle loading histories, approximating real-world operating environments. The system applies vertical, lateral, longitudinal, Mx, and Mz loads to a bearing specimen while an electric motor spins it in its fixture. Precise control of specimen loading is achieved with integrated load cells, while an isolation bearing supports the test specimen and shields the electric motor from test forces and moments. FlexTest controller software allows users to efficiently program and monitor both simple and very complex block-cycle tests.

The physical rig comprises a steel base plate; five Series 244 linear hydraulic actuator assemblies with servovalves and required manifolds; five Model 661 load cells; a 7 Kw electric motor; a 5 DOF specimen test fixture; a FlexTest® Servocontroller; a Series 293 Hydraulic Service Manifold with system accumulation and emergency shut-off features, and hydraulic hoses.

System Performance

- Max. Load (vertical, lateral, longitudinal): +/- 15 kN
- Frequency (vertical, lateral, longitudinal): 20 Hz
- Max. Load (Mx, Mz): +/- 5 kNm
- Angular Displacement x: +/- 6.0 deg
- Angular Displacement z: +/- 6.0 deg
- Speed range: 10-3000 RPM
- Speed change: 200 RPM/sec

System Options

- Customer-specified onsite acceptance testing
- SilentFlo HPU Options

System Content

- Steel base plate (2.5 m x 2.0 m)
- Five Series 244 linear hydraulic actuators
- Five Model 661 load cells
- 7.5 Kw electric motor & drive
- One 5 DOF bearing test fixture
- One FlexTest System Controller and Software
- One 505 SilentFlo™ Hydraulic Power Unit
- One Series 293 Hydraulic Service Manifold
- Hydraulic hoses
- Installation and Support Services
EXPERT SUPPORT, WHEN AND WHERE YOU NEED IT

Test professionals throughout the world rely on MTS’ innovative technologies, high-quality test systems and applications expertise to optimize their testing programs. We complement this industry-leading portfolio with an unmatched suite of global service and support, all designed to increase your uptime and reduce your total cost of ownership.

By supporting your test program from facilities planning and system integration through final equipment de-commission, MTS offers a single, reliable resource for helping you optimize your system performance, manage your budget, protect your data integrity and maintain your schedule predictability.