Ball Joint TestStand – Three-Axes Durability

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.

BALL JOINT DURABILITY TESTSTAND SYSTEM

The 6-station, 3-Axes Ball Joint Durability TestStand is designed to test and validate the durability of automotive ball joints by simulating the dynamic loading history imposed on the components in real-world passenger car or truck/SUV service environments.

The system employs eight actuators to apply axial loads and rotational and oscillation motions to six ball joint specimens, simultaneously. Two specimens can be subjected to higher loading of +/-50 kN, while the other four specimens can be subjected to +/-25 kN.

Axial loads are accurately controlled and measured with MTS 661 load cells. Rotational and oscillatory movements are realized with LVDTs incorporated into the actuators and lever fixtures. Ball joints can be evaluated through block cycle testing generated by FlexTest® controller software, or through real-world service simulation using Component RPC® Pro software.

System Performance

- Max. Load: +/- 25 kN (4 stations)
- Max. Load: +/- 50 kN (2 stations)
- Load Frequency Range: 0-50 Hz
- Max. Rotating Angle: +/- 40 deg @ 1 Hz
- Max. Oscillation Angle: +/- 25 deg @ 2 Hz

System Options

- cRPC® Pro Software
- MTS Engineering Consulting Service

System Content

- 6 specimen test stations
  - 4 stations with +/-25 kN load
  - 2 stations with +/-50 kN load
- T-slot plate with loading frames and fixtures
- Series 244 and 242 actuators
- FlexTest System Controller and Software
- Two Series 293 Hydraulic Service Manifolds
- SilentFlo™ Hydraulic Power Supply
- MTS 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.