

# 1000 Hz High-Cycle Fatigue Test System



## System Benefits

- Uniaxial system, static capacity  $\pm 25$  kN ( $\pm 5.5$  kip)\*
- Total displacement  $\pm 25.4$  mm ( $\pm 1$  in)
- Able to perform 1 billion cycle test in 11 days
- High mechanical durability achieved through Voice Coil Servovalve technology
- AdapTrac™ amplitude phase control (APC) software increases the effective frequency range for 1,000 Hz sustained testing

\* Dynamic performance dependent upon specimen material, configuration, and grip mass.

MTS has developed a servohydraulic test system for accurate and reliable fatigue testing at 1000 Hz. The system is already being used by several laboratories for testing materials used in advanced aerospace applications.

High cycle fatigue testing to long lives requires high-frequency equipment. A  $10^9$  cycle test would require more than seven months with a traditional 50 Hz servohydraulic testing machine. The same test takes only 11 days with the 1,000 Hz high-cycle fatigue test system.

The 1000 Hz high-cycle fatigue test system maintains high waveform fidelity while running at high frequency. It allows highly accurate control with a static load capacity of  $\pm 25$  kN ( $\pm 5.5$  kip). Environmental chambers and induction heat (available as system options) allow the system to be used for determining temperature effects during fatigue testing.



The MTS 1000 Hz High-Cycle Fatigue Test System

### System components

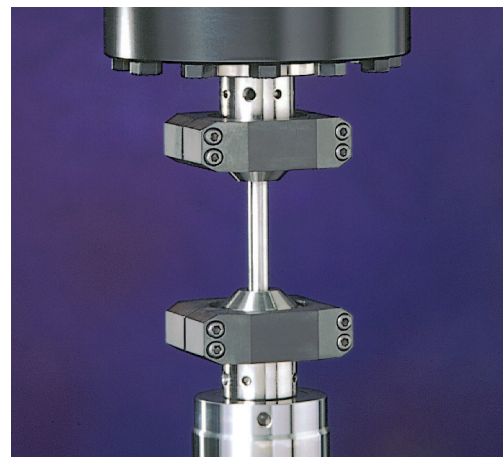
- ▶ MTS 318.25S load unit equipped with a high-performance, high-flow voice coil servovalve
- ▶ Low-mass grips and fixtures
- ▶ TestStar™ II's digital controller
- ▶ MultipurposeTestWare® with AdapTrac Software
- ▶ 505.11 hydraulic power unit

### For More Information

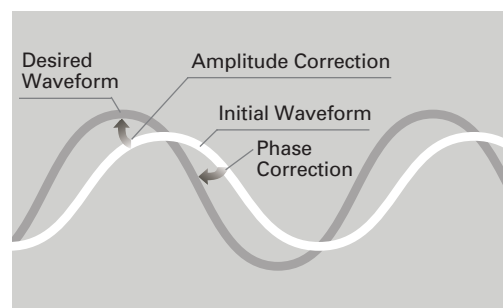
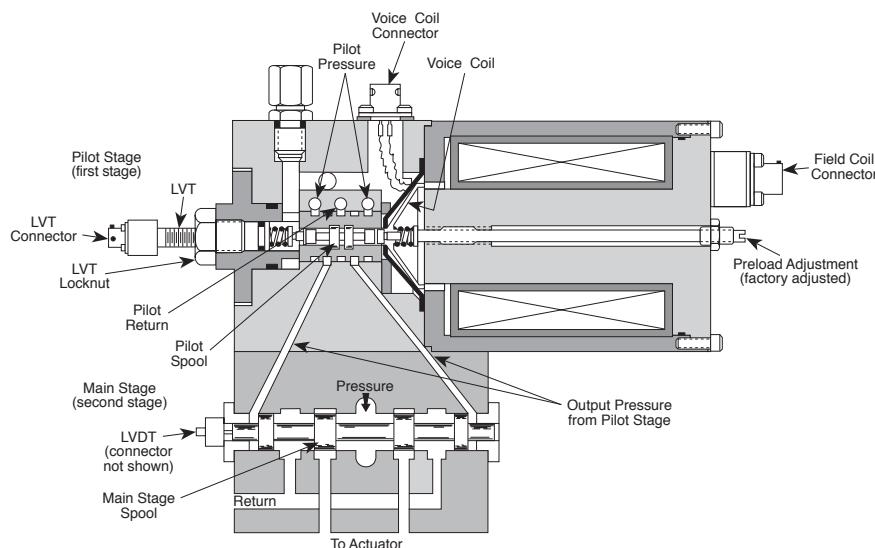
Contact your local MTS sales engineer for more information on the MTS 1000 Hz high-cycle fatigue test system.

### Options for environmental testing

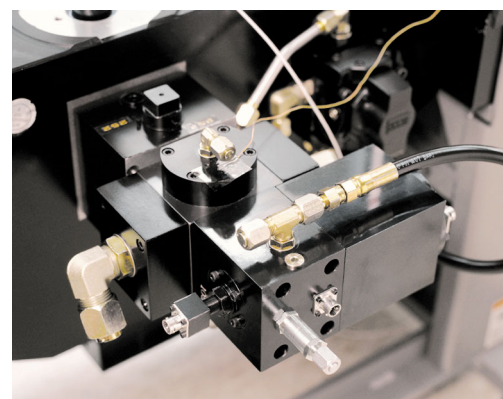
- ▶ Environmental chambers
- ▶ High-temperature furnace
- ▶ Induction heating systems



The MTS Model 609 Alignment Fixture and MTS low-mass grips ensure optimum system response.



AdapTrac Software a standard feature of MTS 1000 Hz High-Cycle Fatigue Test System software, ensures optimum accuracy, speed, and versatility in high-cycle testing.



The 1000 Hz System Servovalve Assembly

Cross section of the MTS Model 257 Voice Coil Servovalve designed to perform high-frequency, high-performance testing.

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