

## TruForce

## Servo-Hydraulic Fatigue Testing Machine | 10kN -250kN

TruForce TF-LF Series Servo-Hydraulic Fatigue Testing System is suitable for testing of various materials, such as isolation cushions, composite materials, steel products, aluminum alloys, super alloys and so on. It consists of robust load frame with the most advanced digital controller and professional application software in the industry, a number of specialized hydraulic fixtures for fatigue test, extensometers and other accessories.

### Typical Fitigue Test Standards:

- ASTM E466 Standard Practice for Conducting Force Controlled Constant Amplitude Axial Fatigue Tests of Metallic Materials
- ASTM D3479 Standard Test Method for Tension-Tension Fatigue of Polymer Matrix Composite Materials
- Standard Practice for Open-Hole Fatigue Response of Polymer Matrix Composite Laminates
- Standard Test Method for Crack-Tip Opening Displacement (CTOD) Fracture Toughness Measurement

### Advanced Features:

- Extremely stiff load frame and precision-machined columns for excellent alignment
- Fatigue rated actuator with high quality load cells.
- Professional and intuitive application software in the industry
- The latest all-digital control system enhances the hardware and system software in an all-round way.
- Adjustable test space for different test needs.
- Compact design to save laboratory space
- Super quiet hydraulic servo pump station

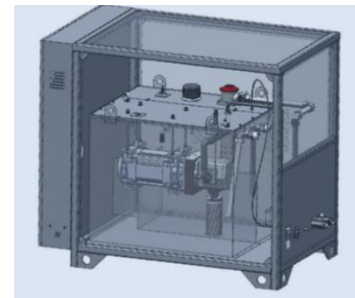


### State-of-the-art Control System

- Control mode: All-digital PID closed-loop control of force and displacement. The control mode can be switched smoothly and without disturbance;
- Frequency range: 0--500Hz;
- Main test waveforms: Sine, square, triangle, ramp, hold, profile and custom waveform activities;
- Measurement Resolution of Test Signal:  $\geq 1/7,000,000$ . Indication accuracy: 0.005FS.;
- Accuracy of signal generator: 0.01%;
- Data acquisition frequency: 10KHz;

### Hydraulic Servo Pump Station

- Enclosed structure with sound insulation design;
- Pumping station is designed and manufactured according to standard modularization, with mature technology and stable performance. Configured relay voltage regulator module connected to actuator
- The oil pump features low noise, excellent durability and long service life;
- Oil pump motor set is equipped with shock absorber (vibration absorber pad is selected) to reduce vibration and noise;
- Use high and low pressure switching valve group to control the start and stop of hydraulic system (remote control of servo controller)



### Hydraulic Grips

- A selection of grips inserts to accommodate different specimens;
- The jaw is fixed on the clamp body by the stretching spring and the spring hanging column, which is convenient to install and replace;
- Suitable for static and fatigue test with force through “zero”
- Adjustable gripping pressure to accommodate a variety of specimen materials.

### Water Cooling System

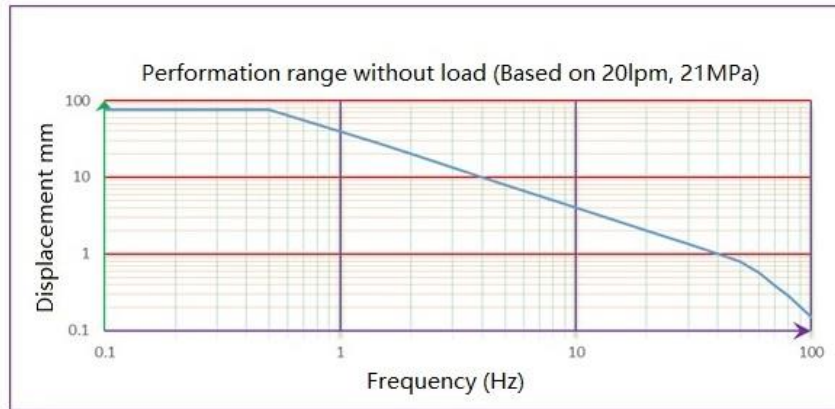
The water cooling system will start operation when oil temperature exceeds the set temperature. It features safety protection: compressor overheating protection, overcurrent protection, high and low pressure protection, over temperature protection, flow protection, phase sequence/phase absence protection, exhaust overheating protection and so on.



## Dynamic Characteristics

Amplitude-Frequency Characteristics without loading

The relationship between test frequency and displacement amplitude below is determined by 20L/mi flow rate of Hydraulic Power Supply



## Dynamic Testing Software

- Multipurpose dynamic testing software includes high and low cycle fatigue testing software module;
- System resource management module: It can configure hardware resources of the system and display static and fatigue test loading control.
- Various control modes (position control-force control) can be changed during the test and real-time acquisition, display and storage of test data.
- Application software: safe, reliable, powerful, good execution, scalable and scalable, and can automatically analyze and process test data.

