

## *Hydraulic Fatigue Dynamic Testing Machine*

### **Model: HDS Series**



#### **1, General introduction**

Fatigue testing equipment is often used to determine how a material will perform over time and repeated use.

**United Test** offer the Electro-hydraulic servo static & dynamic universal testing machine is specialized testing equipment, according various industry application to design and configure machine's structure and components.

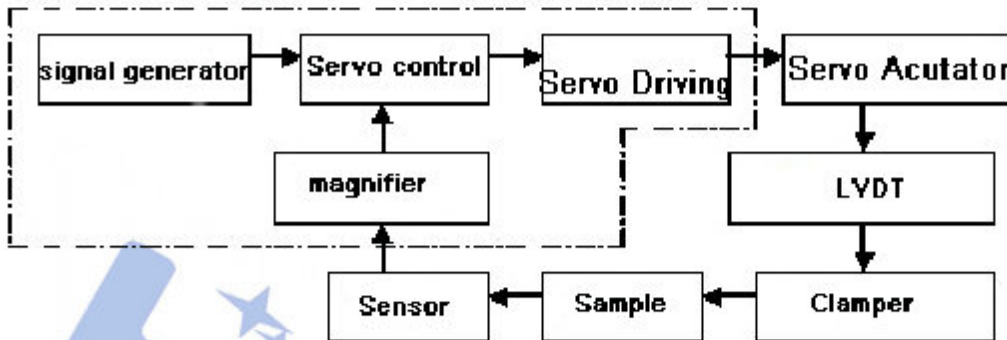
This machine mainly used at a variety of material and components, parts for both dynamic and static mechanical property testing, include tension, compression, low cycling test, match with high-low temperature chamber can execute the temperature test. If add versatile test fixture and software, can check the material cracking growth, fracture load etc., mechanical test. Widely used at aerospace, navy, military, scientific research institution, enterprise new product development, inspection industry etc.,

#### **2, Main Functions**

- 1, Fatigue working life study;
- 2, Cracking extension and breaking load study;
- 3, Tensile, compression, bending test
- 4, Components and parts fatigue and life working test.

### 3, Principle

Working principle and control diagram like below:



### 4, Constant pressure servo oil source

Constant pressure servo oil source system is close type low sound quite design, cabinet structure, this unit will supply the pressure oil for the frame loading. Similar oil source unit picture like below:

#### 2.1, Reliable and quality components

Oil pump is internal gear pump, feature is low noise, hydraulic impulse small, long working life, suitable for dynamic testing machine hydraulic oil source unit.

Motor use industry universal three phase asynchronization motor, with cast iron shell, high anti-vibration performance. Imported brand bearing, with high over loading ability.

System rubber hose assembly use imported Italy brand, with long working life, suitable for high pressure system.

Main overflow valve, solenoid directional valve adopts brand products, filter accuracy 5um.

Electrical part choose famous brand as well.



#### 2.2, System integration design reasonable and reliable:

To low the noise and protect the motor, adopt the elastic coupling to connect motor and pump, can effectively reduce instant impact to motor pump when start and loading.

System set two level pressure, high pressure (rated) 21Mpa, low pressure (start) 3 Mpa. At system start and adjustment, choose low pressure; at test choose high pressure. Work more safe and energy conservation.

With high efficiency water cooling unit, make hydraulic oil keep working at a stable temperature.

With kinds of alarm device, monitor oil source working process. High pressure filter oil block alarm, oil temperature alarm, level low alarm, motor over load protection etc.,

#### 2.3 Beautiful appearance:

Strong electricity cabinet steel plate is painted, good adhesive force, beautiful appearance.

Button, indicator position conform to ergonomics.

Oil source bottom with specialized shock pad.



**4, Main technical specification**

Max. static load	±200KN/500KN/1000KN, full range stepless, Accuracy ±1%
Max. dynamic load	±200kN/500KN
Dynamic fluctuation	Less than ±2%FS
Actuator max. stroke	±75mm
Frequency	0.01~30Hz
Max. speed	700mm/s(21Mpa,70L/min)
Motor power	30Kw
Controller type	Single channel; displacement and load close-loop dual channels
Main test waveform	Sine wave, triangular wave, rectangle wave, oblique wave etc.
Test space	750mm
Test width	530mm
Round specimen clamping range	φ6~φ25mm
Flat specimen clamping range	0-26mm
Weight of oil source	750kg

**5, Main accessories**

High Stiffness Frame	1 set
Constant pressure servo oil source	1 set
Hydraulic clamber	1 set
Servo controller	1 set
Fluid part connection	1 set
Accessories	1 set
Consumable parts	1 set
Computer	1 set
Printer	1 set
Documents (Manual, packing list, certificate)	