

BISS Electra Series Servo-Electric test systems feature fatigue rated, high-stiffness, precision-aligned, free standing single footprint annular load frames. The basic system consists of vertical load frame, servo-electric actuator, force transducer, servo controller and safety interlocks. Wide range of accessories such as grips, displacement transducers, high temperature furnace and temperature control unit are available. The 2370 controller provides required control on stroke, load and strain. These single foot print units are designed to suit for Monotonic, LCF, Creep, Creep crack growth rate, Creep-fatigue crack growth, Creep-fatigue interaction, Stress relaxation, Quasi-static tests etc.

Standard features

- Fully self-reacting floor standing load frames, no need for foundation
- Mechanical / Hydraulic / pneumatic anti vibration pads
- Force rating from 10 to 300kN dynamic
- Stiffness of frame: Up to 2000kN/mm
- Actuator stroke up to 200mm
- Low friction and wear resistance actuators
- Working temperature up to 1600°C
- Encoder based displacement measurements
- Virtually noiseless
- Servo controlled force and displacement
- Green and energy efficient system with in-built UPS for continuous operation
- Zero backlash design
- Speed range 0.00001mm/min to 250mm/min
- Runs on single phase power supply
- Resistive Heating furnace & Induction Heating
- PID Temperature control unit
- Water cooled hydraulic grips (option)
- 32-bit data acquisition
- 40-bit servo-loop calculations
- Data acquisition rates up to 24 kHz
- Digital servo loop update rates up to 32 kHz
- User friendly application software
- Just Plug and Play
- Operator control panel for basic operations of the machine such as, Enable, E-Stop, Actuator Jo Up/Down slow/fast, Cross head position up & down, lock and unlock at any height, Hydraulic grips operation, machine status etc.



Applications

- Tensile, compression, flexure, shear, peel tests
- Low cycle fatigue testing
- Thermo-mechanical fatigue studies
- Creep, creep crack growth, creep fatigue crack growth, creep fatigue interaction
- Stress relaxation
- Strength and characterization of metals
- Room temperature, Low & high temperature tests
- Tests subjected to environmental conditions
- Testing of metals, plastics, wood, ceramics, intermetallic, composites, rubbers etc

Specifications

Model	Electra 10 UT-20-0010	Electra 25 UT-20-0025	Electra 50 UT-20-0050	Electra 100 UT-20-0100	Electra 150 UT-20-0150	Electra 200 UT-20-0200	Electra 300 UT-20-0300
Capacity, kN	10	25	50	100	150	200	300
No. of columns	2						
Column clearance, mm	600 (Optionally up to 800)						
Maximum vertical daylight, mm	1200 (Optionally up to 2500)						
Minimum vertical daylight, mm	300						
Total weight, Kg	450	700		1000			
Load accuracy	±0.5% of readout down to 1/500 th of capacity ASTM E4, ISO 7500-1						
Strain accuracy	±0.5% of readout down to 1/50 th of range ASTM E 83						
Stroke, mm	Up to 200						
Stroke resolution	Down to 0.01 µm						
Stroke accuracy	±0.5% of readout						
Speed range mm/min	0.00001 to 250				0.00001 to 150		
HPS flow, LPM (Option – Hydraulic grips)	4						
Power Supply AC	1 Ø 220V / 3 Ø 440V						
Vacuum chamber (Option)	5 x 10 ⁻² mBar						
Furnace (temperature, °C)	Split tube furnace with working temperature up to 1150 °C Box type furnace up to 1600 °C						
Grip Cooling Unit (LPM)	2 – 10LPM						
Environment Chamber	-190 °C to +100 °C (or) -70 °C to +150 °C						

Note: Specification are subject to change without prior notice