

Model: FT-3137

12-CH CONSTANT STRESS / STRAIN FATIGUE TESTER



Outline

The 12-Ch Constant Stress/Strain Fatigue Tester applies constant strain oscillation to up to twelve dumbbell-shaped test pieces while a static load or elongation is being applied. It counts the number of cycles until the samples are broken. The load applied to the sample is monitored in real-time on a PC screen during a constant strain test, and elongation is monitored in a constant stress test. By a constant stress test, variation of test results caused by the slack of the test piece (buckling) can be minimized, obtaining more accurate fatigue characteristics of materials and enabling fatigue tests with better correlation to actual products.

Features

- A test can be performed on up to twelve test pieces simultaneously.
- Having a breakage detection device for each channel, it counts a number of strokes until breakage and stops operation when all the test pieces are broken.
- An S-N curve (presentation of load to the number of strokes, or elongation to the number of strokes) is displayed in real-time on a PC screen during a test.
- Test results can be saved as CSV files.
- A rotary handle is attached for easy setting of test pieces on the chucks.

Specifications

MODEL	FT-3137
Reference Standard	JIS K 6270-1, ISO 6943 (Constant Strain Method)
Test Piece	Shape: JIS Dumbbell Type 2 or 3 Number: 12 Mounting Pitch: 80mm
Test Frequency	1 to 5 Hz variable (driven by an inverter-controlled motor)
Chuck Stroke	Lower Chuck: 3 to 60mm (Adjustable by eccentric wheel setting) Upper Chuck: 0 to 200mm depending on the specimen (driven by electric actuators)
Load Detection	Load-Cell 300N (12 sets)
Elongation Detection	Encoders with 0.1-mm resolution
Control Unit	Controllers: 6 digits (for each of the 12 Channels) Displayed data : Number of strokes set and tested , strain value, load value, the channel of breakage, number of strokes until breakage
Thermostatic Chamber	RT+10°C to 150°C of test temperature range Temperature Accuracy: $\pm 2^{\circ}\text{C}$ from 50°C to 100°C, $\pm 3^{\circ}\text{C}$ from 101°C to 150°C
Temperature controller	Digital display controller with a Pt100 sensor, PID control
Heating System	3 x 1330W heaters with sirocco fan stirrer After stopping heating, the stirrer continues to work with a cooling timer.
Chuck Movement	(1) Lower chuck by rotating handle for test piece setting (2) Upper chuck by PC control for test piece setting
Software	(1) Acquisition of test data (2) Setting and input of test conditions (3) Showing test results (4) Storage of test results (CSV format)
PC	A desktop PC with serial I/F Windows 11 Professional English
Utility Required	Power Supply: 3-phs 200VAC 50/60Hz 60A M8 terminal block (for testing machine body) *The main unit power cable is not included. Single phase 50/60Hz 7A (PC) Compressed Air: 0.5MPa or more (dry and clean air) approx. 100L/min
Outer Dimensions and Weight	Test machine: approx.1920 (W) x 845 (D) x 2320 (H) mm (excl. protrusion) Weight: approx. 1740 kg



~ Simulate product testing in the lab ~

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