MODEL FT-1518
# CCD DE MATTIA FLEX CRACKING TESTER

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Outline

This equipment has a temperature chamber, in which it applies repeated flexures on 20 test samples and captures images of cracks generated by the mechanical fatigue and growing on the samples using a camera to evaluate durability of the samples. It stops in every preset interval to capture images and store them on a PC. Crack width can be measured automatically[*] or manually. In manual mode, measurements can be done with a mouse on a captured image. Data can be edited afterwards. It is possible to draw a S-N curve showing crack width over the number of flexures.
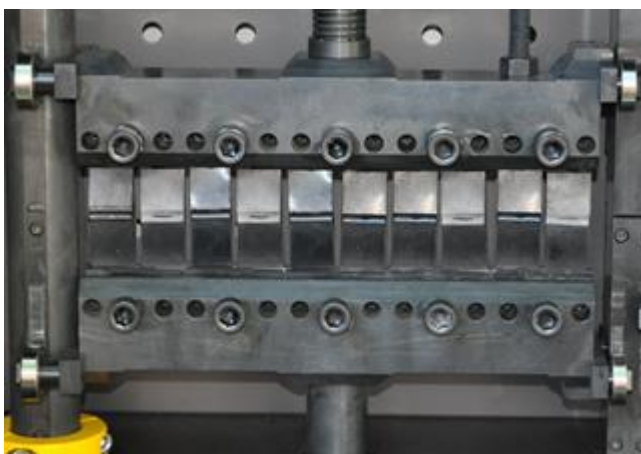
Feature

● Performs a test on 20 test pieces simultaneously.

● Performs a fully automatic test including capturing and storing images on a PC merely by setting numbers of strokes and captures.

● Operations with an intuitive dialogue method through a touch panel screen.

● Possible to make an automatic[*] or manual measurement of crack width. In case a crack width is difficult to recognize, it can be corrected afterwards.

● It is easy to measure a crack width manually as images are very clear.

● Draws a S-N curve of each test piece, and the results are saved as a CSV formatted file.

● If the lubricating oil for the bending drive is insufficient, the equipment will automatically stop to prevent damage to the equipment.

● It has a robust design that can withstand long-term use.

[*] The automatic measurement of crack length has limitations. Accurate measurement may not be possible depending on the condition of the image.

Application

● Flex cracking test and crack growth test of such materials like vulcanized rubber.

Products like tires, belts and anti-vibration rubber are subjected to repeated strain from the outside. In a long time, a crack will appear and then grow, which will at last cause a fatigue breakdown. The FT-1518 performs flexure tests on samples shown in JIS K 6260 or ISO 132 at a temperature between RT+10°C and 150°C while capturing crack images to evaluate relationship of flexures and fatigue.
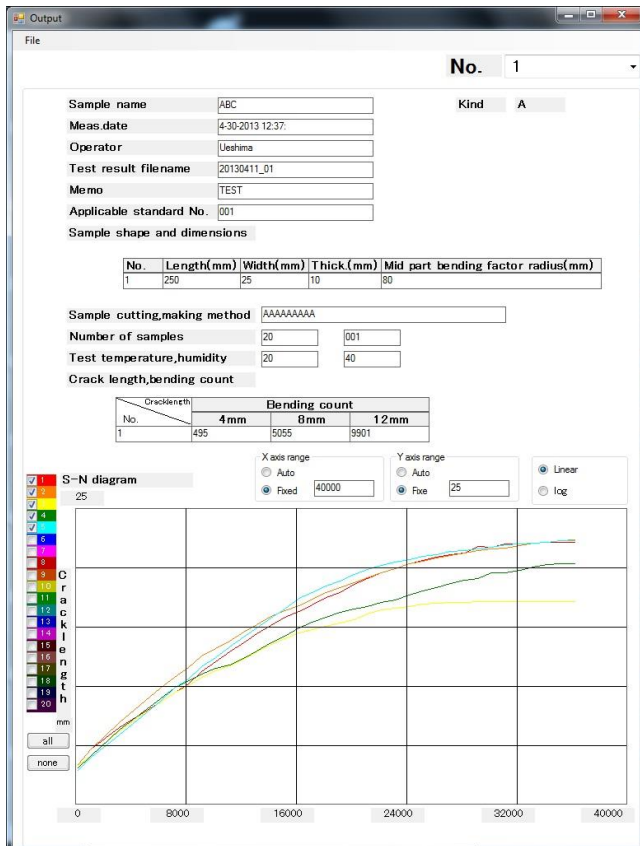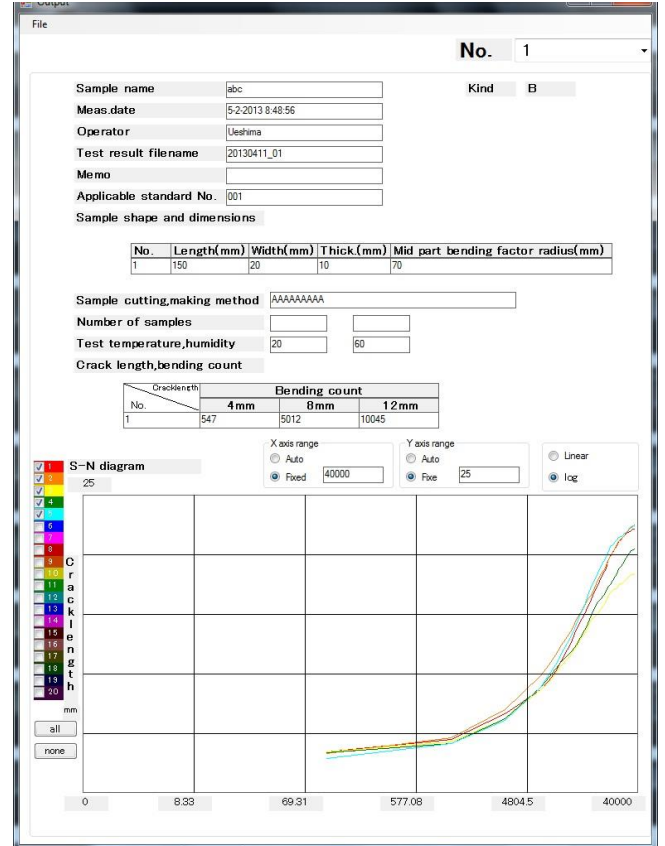

Inside Test Chamber

Camera
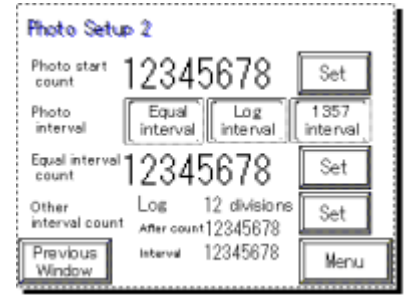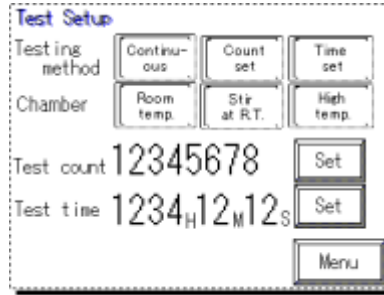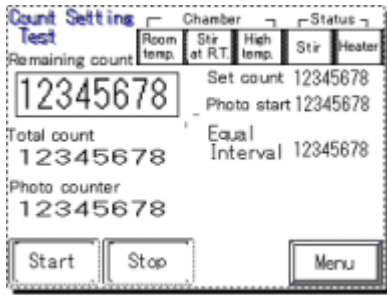
Software

PC Software Screen (S-N Curve)

LIN Scaling on X-Axis

LOG Scaling on X-Axis

Sample Crack Images
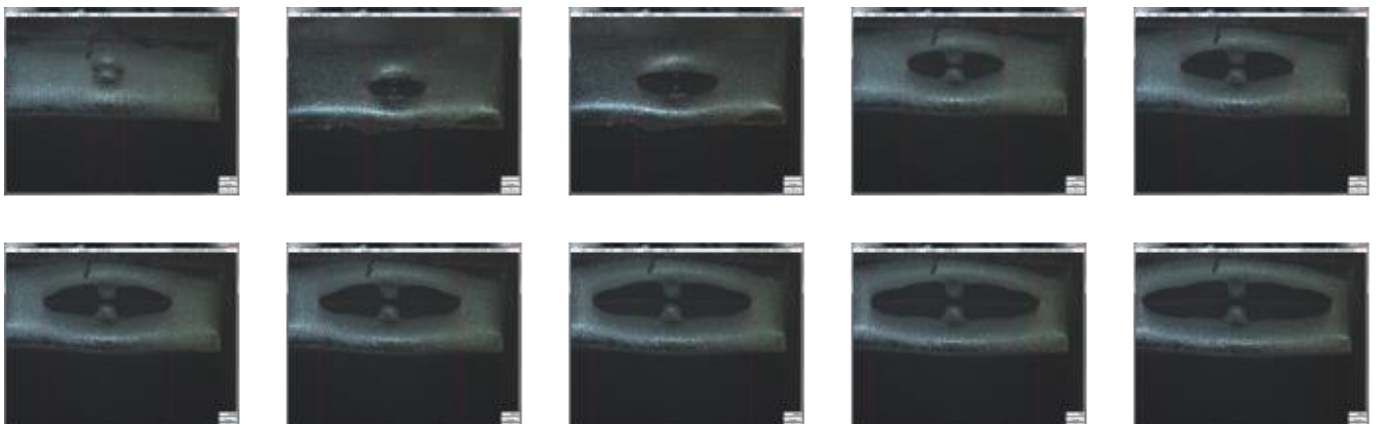
Specification

Name	CCD De Mattia Flex Cracking Tester
Model	FT-1518
Applicable Standard	JIS K 6260、ISO 132
Test Piece	According to JIS K 6260 or ISO 132
Number of Test Pieces	20
Flexure Speed	300±10 cpm
Stroke	3 to 100 mm
Temp. Control Range	RT＋10℃ to 150℃
Counter	Number of strokes done: 8 digits Preset number: 8 digits Preset time: 9999H 59M 59S
Temperature Controller	PID Controlled digital temperature controller
Sensor	Pt100Ω
Heating Method	Heater 4kW with agitation fan
Agitation Equipment	Motor: 3-phs. 200V 40W with agitation fan
Drive Equipment	Motor: 3-phs. 200V 750W (for drive) 3-phs. 200V 60W (for chuck traverse)
Safety Device	Leakage breaker, overheat protector, door sensor (eccentric wheel section, side door, back door), overload detection of drive motor and agitation motor, low oil level detector, belt slip detection
PC Software	Image capture during a test, crack growth measurement and analysis from the captured images after a test is completed
PC	OS：Windows 10 Monitor resolution: 1280×1024 or more Requires RS-232C and USB connecting with the equipment and the camera respectively.
Options	・Sample curing mold ・Puncher jig for Crack growth test piece slit ・Equipment stand (height 280mm)
Utility	Power supply: 3-phs. 200V 40A, 50/60Hz (for the main equipment)
Dimensions & Weight	Approx. 1010(W) x 815(D) x 1320(H) mm, approx. 520kg