

MODEL FT-1518 CCD DE MATTIA FLEX CRACKING TESTER



#式會社上島影作所



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.

eature

- 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 longterm 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.



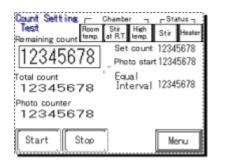
Inside Test Chamber



Camera

Software

Touch Panel Screen



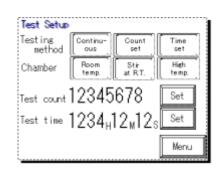


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Previous Interval 12345678 Window	Menu

PC Software Screen (S-N Curve)

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		20130411_01							
		TEST							
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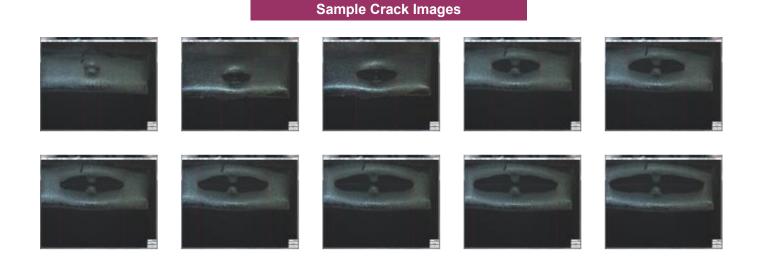
LIN Scaling on X-Axis

No. 1 Kind B Sample name abc 5-2-2013 8:48:56 Meas.date Operator Ueshima Test result filename 20130411_01 Memo Applicable standard No. 001 Sample shape and dimensions No. Length(mm) |Width(mm) | Thick.(mm) | Mid part bending factor radius(mm) Sample cutting, making method AAAAAAAAA Number of samples Test temperature,humidity 20 Crack length,bending count
 Bending count

 8mm
 12mm

 5012
 10045
 Orscklength 4mm 547 5012 No. X axis range Y axis range Auto Auto Fixed 40000
Fixe 25 S-N diagram C Linear Iog √ 4 √ 4 √ 2 6 8 9 10 11 12 13 14 14 15 16 17 17 18 13 14 11 15 16 17 17 18 11 19 h all none -0 8.33 69.31 577.08 4804.5 40000

LOG Scaling on X-Axis



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℃				
	Number of strokes done: 8 digits				
Counter	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)				
Drive Equipment	3-phs. 200V 60W (for chuck traverse)				
	Leakage breaker, overheat protector, door sensor (eccentric wheel				
Safety Device	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.				
	Sample curing mold				
Options	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				

