



Testing machines for micro compression

MCT-W Series

The MCT-W series micro-compression testing machines are used to determine the strength of micro-components and micro-particles ranging in size from a few microns to several hundred microns, as well as ultra-fine fibers.

Microcompression displacement measurement

Possibility of determining compression characteristics for various micro components. Possibility of supplying models with different resolutions and measurement ranges (range up to 100 μm with a resolution of 0.01 μm , range up to 10 μm with a resolution of 0.001 μm).

Wide range of loads

Possibility of supplying equipment with a load range from 9.8 to 1950 mN or from 9.8 to 4900 mN.

High testing accuracy

Load setting accuracy $\pm 1\%$

Length measurement and image saving (optional)

The testing machine can be equipped with an additional device for measuring the length of a sample, displaying the image on the screen and saving it in the PC memory.

Standard measurement of sample dimensions

The sample sizing function allows you to measure the diameter/length of a sample.

Display sample during compression (optional)

A special optional device allows monitoring of the sample during the test.

High temperature testing capability (optional)

Tests can be carried out not only at room temperatures, but also in the range from 50 to 250 $^{\circ}\text{C}$.

Application areas

Various micro-components, ceramic particles, finely ground metal powders, rubber particles, pigments, food powders, pharmaceuticals (microcapsules), ultra-fine fibers.

Specification MCT-W series

1. Model name	MCT-W series			
	500	501	200	201
2. Loading block				
Loading method	Electromagnetic force			
Load range (mN)	9.8-4903		9.8-1961	
Loading accuracy	Within $\pm 1\%$ of the specified force value or 0.1 mN (whichever is greater)			
Readability	5 mN (when tested with a force of 49 mN or less)		2 mN (when tested with a force of 19 mN or less)	
3. Displacement measurement unit				
Way	Differential transformer			
Measurement range (μm)	0~100	0~10	0~100	0~10
Min. magnification (μm)	0.01	0,001	0.01	0,001
Linearity	Within $\pm 2\%$ of full scale			
4. Optical monitor				
General strengthening	Approx. x100, x500 (x200, x400, x1000 as an option)			
Objective lenses	x10, x50 (x20, x40, x100 as option)			
Eyepiece	x10			
Lighting method	Epiluminescent			
Lighting lamp	Halogen 6 V / 20 W			
Path of light	Possibility to switch between visual observation and shooting			
5. Optical head				
Collimation method	Two-way synchronous collimation system			
Detector	Optical encoder			
Effective measurement range (μm)	Approx. 200 (with x50 objective lens)			
Minimum magnification (μm)	0,1			
6. Indenter				
Indenter for compression from above	Type: flat indenter (diameter 50 μm) (500 μm indenter and triangular pyramid indenter available as option) Material: diamond; weight 2.10 g \pm 0.02 g			
Bottom compression board	SKS Flat Board (Diamond Compression Board is available as an option)			
7. Object table				
Vertical positioning range	Approx. 60mm			
Square	Approx. (W) 130mm x (D) 130mm			
Horizontal positioning range	25 mm for both X and Y directions; min. magnification: 0.01 mm (0.001 mm as option)			
Positioning accuracy	Within $\pm 0.5 \mu\text{m}$			
8. Test parameters				
Test mode	Compression test, load-unload test, cyclic test			
Sample form	Particle, fiber or other form			
Number of test cycles	Max 1000			
Data processing unit	Compressive strength calculation, display of test parameters and results. Display of load and strain data Display of load/strain curve Display of strength/particle diameter curve Display of strain/time curve Display of strength curve against any other selected parameter			
9. Operating conditions				
Power Requirements Temperature	115, 220, 240 V \pm 10% (selectable), 50/60 Hz, 800 VA			
	Recommended 22 $^{\circ}\text{C}$ \pm 1 $^{\circ}\text{C}$ Operating range from 10 to 35 $^{\circ}\text{C}$ Temperature fluctuations during equipment operation should not exceed $\pm 1 \text{ }^{\circ}\text{C}$.			
Humidity	80% or less (non-condensing)			
10. Weight	Measuring unit: approx. 45 kg; Control unit: approx. 13 kg			



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