Tec Gihan

yawara

Measurement of Elasticity

＊【YWS-5N-1/-SL】

SOFT MATERIAL MEASUREMENT

“Sensitive Touch" Measurement Using the High-precision Sensor

Features

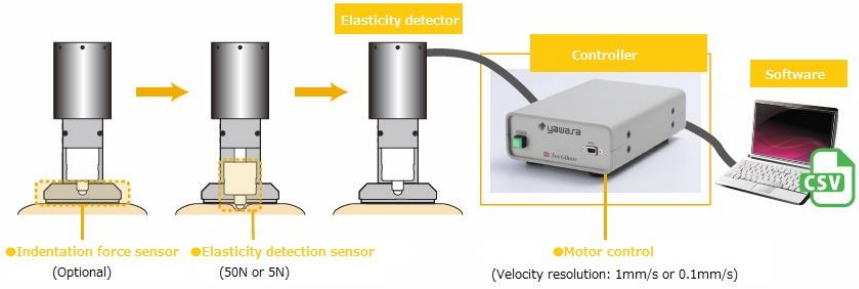
◇ Measures F-S curve of soft materials (low elastic material) to calculate physical values including Young's modulus, slope, hysteresis and energy.

◇ Servo control enables measurement at a constant speed regardless of the load, minimizing errors.

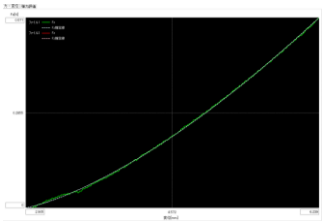
◇ Lineup includes 50N model suitable for handy on-site tests, 5N model for measurement of softer materials.

＊【YWS-50N】

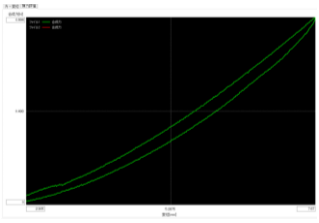
System



Software



Detects a point of contact to compute Young’s modulus



Measures data for both ways

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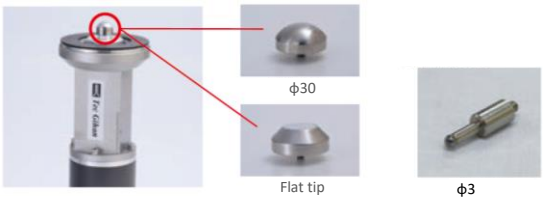
Options

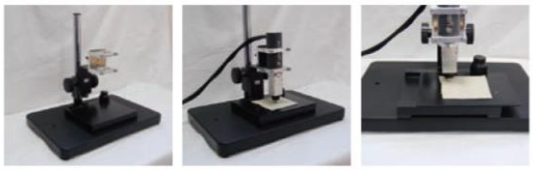
Indenter Tips

The size of an indenter tip can be ordered.
Not only a round indenter, but also a flat or elongated tip are available according to your needs.



Fixation Stand

Test environment is important since the calculation is based on "indentation load and displacement".
The stand allows stable repetitive testing by holding the Yawasa in place.



Specifications

Product name	YAWASA YWS Series		
Model	YWS-5N-1	YWS-5N-1-SL	YWS-50N
Rated capacity	5N		50N
Pressing force sensor	×		○
Rated Young's Modulus	10^{0}-10^{4}kPa		10^{1}-10^{5}kPa
Elasticity Detector			
Elasticity sensor - Rated capacity (Fx·Fy·Fz)	±5N · ±5N · +5N		±10N · ±10N · +50N
Displacement	18mm from origin		10mm from pressing surface
Pressing force sensor – Rated capacity	–		200N
Operating temperature range	-10 to +50℃、20 to 85％RH (Non-condensation)		
External dimensions & Weight	ϕ40xH175 Approx. 320g		ϕ54xH171 Approx. 330g
Controller			
Power supply	12V DC (AC adapter included)		
Communication	USB Mini-B cable (1.5m)		
External dimensions & Weight	W100xL140xH40 (excl. protrusions) Approx.530g		
Components	Elasticity detector, Controller, Software (Win10), Software dongle, AC adapter power cable, USB Mini cable (1.5m), Indenter (2pcs: ϕ10, ϕ20), Indenter replacement tool, precision screwdriver		

Model Selection

Capacity

50N YWS-50N	5N YWS-5N
Hard materials	Soft materials

Velocity

Standard 1 – 10mm/sec	Low(-SL) 0.1 – 2mm/sec
Materials thicker than 2mm Soft specimens	Thin materials less than 0.5mm thick Specimens with small deformation of 10^{4}kPa or more

*Materials with very small deformation such as wood, metal or plastic are difficult to measure.

With/Without a pressing force sensor

With a pressing force sensor	Without a pressing force sensor
For measurement holding the Yawasa by hand, monitoring pressing force	Tests using the stand or using different indentation adapters depending on samples

Indenter tip

Large diameter tip	Small diameter tip	Flat tip
To evenly measure materials with high variability (e.g. Jelly)	Small, thin, hard materials or pinpoint tests	Sphere specimens

For precise measurement, no more than 1/6 of the indenter diameter should be pushed down to a sample.

***The design and specifications are subject to change without prior notice.**

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