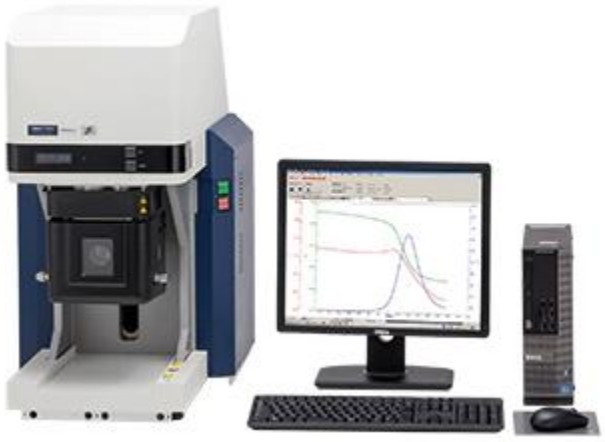
Dynamic Mechanical Analyzer DMA



With its exceptional overall performance and user-friendly design, the DMA 7100 is ideal for uses from routine and high-level research. A navigation guide in the software and the intuitive sample clamping design allow for simple operation.

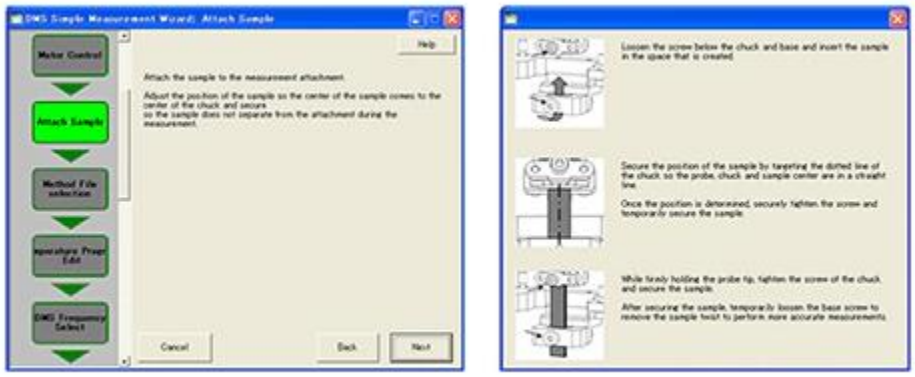
Dynamic mechanical analysis (abbreviated DMA, also known as dynamic mechanical spectroscopy) is a technique used to study and characterize materials. It is most useful for studying the viscoelastic behavior of polymers. A sinusoidal stress is applied and the strain in the material is measured, allowing one to determine the complex modulus. The temperature of the sample or the frequency of the stress are often varied, leading to variations in the complex modulus; this approach can be used to locate the glass transition temperature of the material, as well as to identify transitions corresponding to other molecular motions.

features

1. Easy operation with interactive software and user-friendly sample loading design

The Simple Measurement Wizard in the TA7000 software provides step-by-step navigation from setting measurement conditions to the start of a measurement. The operation procedure is shown with easy-to-understand illustrations which help in setting up suitable measurement conditions and starting a measurement without mistakes.

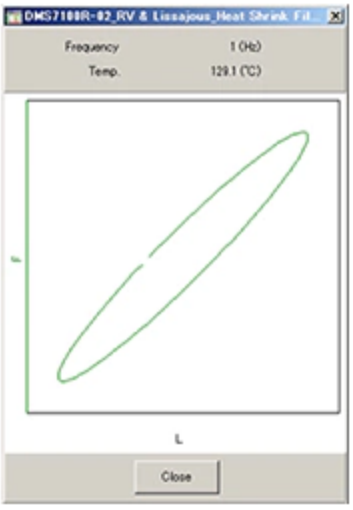
The new measurement head is designed ergonomically to allow easy operation and reliable sample loading.



Simple Measurement Navigation

2. Highly reliable measurement by Lissajous monitor

The instrument comes standard with a Lissajous monitor for observing the relation between stress and strain of a sample being measured. The deformed state of the sample can be verified both in real time and after measurement for each measurement point. This gives users the information about each measurement's validity, thus helping to ensure reliable measurements.



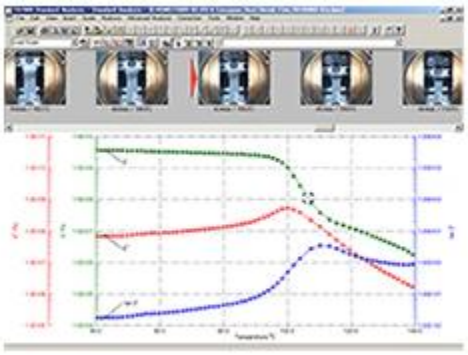
Lissajous Monitor

3. More economical cooling unit

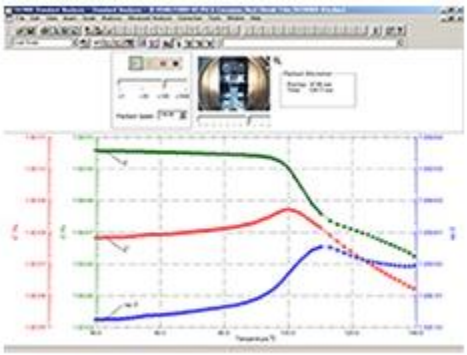
With the LN_2 Cooling Unit option, a sample can be cooled down to -150°C. It is fully controlled by the TA7000 PC station according to the programmed temperature. This unit achieves highly efficient use of liquid nitrogen, consuming up to 30% less than our previous model.

4. Sample observation option (Real View DMA)

The Real View DMA system allows sample observation with the camera during measurement. Visible changes in sample properties such as color and shape can be observed in real time and replayed after the measurement. The acquired images complement the DMA data, making measurements more reliable.



Thumbnails



Slldeshow

Specification

Dynamic Mechanical Analyzer DMA	
Type	**DMA 7100**
Deformation Mode	**Tension, Bending, Shear, Film Shear, Compression, 3-Point Bending**
Frequency	**Sine Wave Oscillation ... 0.01 to 200Hz**
Measurement Range	**10^5 to 10^{12}Pa(Tension), 10^5 to 10^{12}Pa(Dual-Cantilever Bending), 10^3 to 10^9Pa(Shear), 10^4 to 10^{10}Pa(Film Shear), 10^5 to 10^9Pa(Compression), $10^{6.5}$ to $10^{13.5}$Pa(3-Point Bending)**
Program Temp Range	**-150 to 600°C**
Heating Rate	**0.01 to 20°C/min**
Output Values	**Temperature, Frequency, Time, E'(G'), E"(G"),| E*|(|G*|), tanδ, η, J', J", Ft, dL, Stress, Strain**