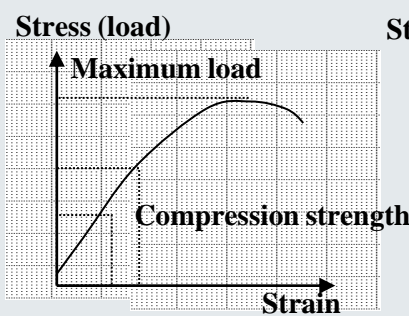


# - X-Y Recorder - X-Y Recorder Material Properties Testing

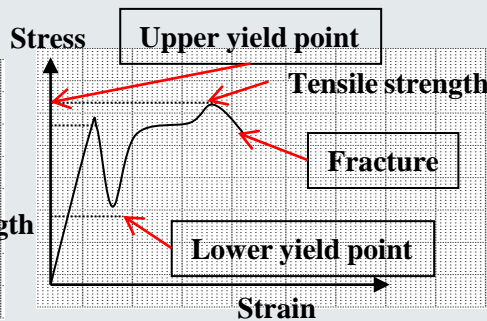
Digital oscillographic recorder proves useful in strength tests for materials such as steel, concrete and composites.

- “Creep tests”, “Compression strength tests” and “Tensile strength tests” are types of material strength tests. X-Y recording can display and record 2 physical variables such as displacement and load measured by a tension compression testing machine.
- The RA2300A/RM1102 Digital Oscillographic Recorders come with “X-Y recorder mode” allowing for “repeated overwriting”, “high resolution recording paper output” and “data acquisition”.
- In addition, the RA2300A Omniace III allows direct connection to strain gauges, pressure sensors, displacement sensor.

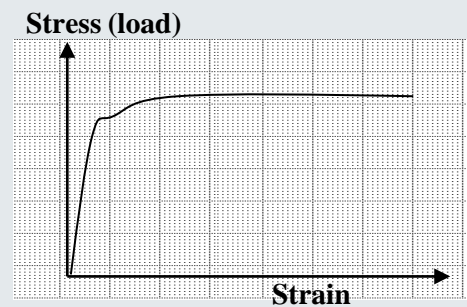
## Image of materials test with X-Y recorder



Material strength, compression strength test

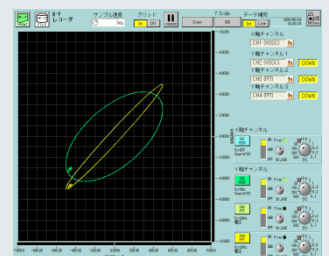
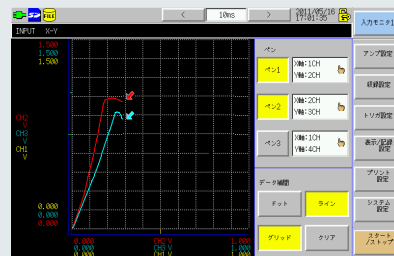
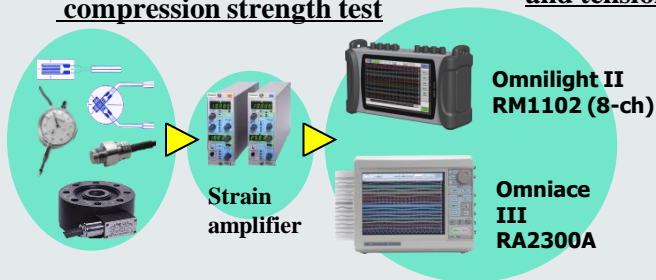


Material strength and tension test



Material strength and compressive creep test

\*Waveform is a diagram.



## **i** High temperature creep test

Creep is a problem that effects materials used at power plants and chemical plants operated at high temperatures over long durations by gradually advancing plastic deformation through microstructural change, carbide coarsening and holes and ruptures. Test pieces held at a high constant temperature are subject to a constant tensile force that starts below the yield point to measure strain and break point and evaluate material properties. Creep tests and creep rupture tests were performed at high temperatures to find the creep characteristics of heat-resistant steel weld metal for oil reaction tower (550 ° C), creep characteristics of 11% Cr steel for a steam turbine (650 ° C) and creep resistance performance testing of Ni-base superalloy steel weld metal (750 ° C).

Digital Oscilloscope Recorder

# RA2300A Series Omniace III

## Did you know?

The RA2300A/RA2800A can simultaneously measure voltage, current, control timing, vibration, rotation, pressure and more directly from sensors.



Amplifier	Model	Specifications
2CH High Resolution Amp.	AP11-101	$\pm 100\text{mV}$ to $\pm 500\text{V}$ , A/D res. 16 bit, $10\ \mu\text{s}$
2CH High Speed Amp.	AP11-103	$\pm 100\text{mV}$ to $\pm 500\text{V}$ , A/D res. 12 bit, $1\ \mu\text{s}$
Event Amp.	AP11-105	Input: 8 logic (Voltage/Contact)
2CGH TC/DC Amp.	AP11-106A	Input: R, T, J, K, W ( $\pm 100\text{mV}$ to $\pm 50\text{V}$ )
2CGH AC Strain Amp.	AP11-104A	Response frequency: 2 KHz
2CH DC Strain Amp.	AP11-110	Response frequency: 50 KHz
2CHG Vibration/RMS Amp	AP11-109	$\pm 100\text{mV}$ to $\pm 500\text{V}$
F/V Converter	AP11-108	Input: 1kHz to 10KHz



Universal testing machine