NEXTGEN MATERIAL TESTING

YOUR QUALITY TESTING CHOICE

Resonant Column and Torsional Shear Tester

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE

Description

RESONANT COLUMN combines the features of both resonant column and torsional shear into a single unit including the current driven motor to apply torsional load to sample, a series of transducers with signal conditioning, a cell and back pressure electro-pneumatic control system and a data logger.

GET A QUOTE

Application

- RC test
  - shear wave velocity
  - secant shear modulus G
  - damping ratio D
  - ratio from free-vibrations
- TSS test
  - Secant shear modulus from stress-strain response
  - damping ratio from hysteresis loops
- Automatic calculation of:
  - Resonant Frequency

NORTH AMERICA (CORPORATE HEADQUARTERS): 170-422 Richards St., Vancouver, BC, V6B 2Z4 Canada
CALIFORNIA: 3503 Jack Northrop Ave., Suite # AF937, Hawthorne, CA 90250
Toll Free:+1 (888) 332-3582 | Fax: +1 905 247-0555 | www.nextgentest.com

- Shear wave velocity
- Shear modulus
- Shear strain
- Damping ratio from half power bandwidth
- Damping ratio from free vibration decay

Main Features

- Combined Resonant Column / Torsional Simple Shear device
- Automatic detection of fundamental frequency
- RC: damping ratio from half power bandwidth and from free vibration data
- TSS: damping ratio from hysteresis loops
- Internal floating frame for large angular and axial deformation
- Confining pressure up to 1 MPa
- Suitable for 50 mm dia. specimen (or 38 mm on request)
- Integrated signal generator and oscilloscope

Specifications

The RESONANT COLUMN consists of:

- aluminium cell with stainless steel columns and acrylic transparent cylinder with 170 mm int. dia. x 200 mm ext. dia., including channels for bottom drainage;
- test accessories for 50 mm (38 mm) dia. specimens;
- Internal floating frame for assembling the electrical motor that applies the torsional loads; this motor has four NeFeB 10 x 25 x 40 mm magnets and eight coils.
- main control box including:
  - power supply
  - current amplifier
  - 8 channels signal conditioning unit
  - USB data acquisition and signal generation board
  - two electro-pneumatic converters for cell & back pressure
- sensor kit containing:
  - axial LVDT transducer
  - automatic volume change apparatus with flow inversion
  - three Pressure transducers
  - two Eddy current displacement sensors (with miniaturised driving system)
- PC and software

NG-ResoColumn	
Maximum Torque	1 Nm
Maximum Angular Deformation	10°
Maximum Cell and Back Pressure	1 MPa

NG-ResoColumn	
Excitation Frequency	- Dynamic (RC) 1-300 Hz - Cyclic (TS) from 0 to 50 Hz maximum
Optional Sensor	MEMS accelerometer
Optional Calibration Kit	N°2 calibration bars kit + N°2 calibration weights

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