



Model 4268 ES

CEMENT EXPANSION / SHRINKAGE CELL

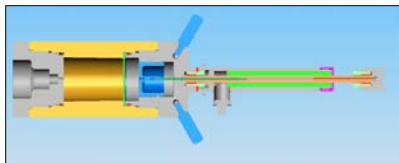
A Critical Tool for Oil Well Drilling and Cementing

The expansion or shrinkage of oil well cement during curing can positively or negatively impact the integrity of a completed well. The Model 4268ES Cement Expansion / Shrinkage Cell is an option to a Model 5265 Static Gel Strength Analyzer (SGSA), Model 4265 Ultrasonic Cement Analyzer (UCA) or Model 4265H UCA. When combined with a precision pressure controller, the system continuously measures the expansion or shrinkage of a cement sample under high temperature and high-pressure conditions.

The system measures the change in volume of the sample using a diaphragm and displacement piston combined with a precision LVDT. The resulting translation of the piston is scaled in units of milliliters (mL) or percent expansion. Test data is presented graphically by Chandler Engineering Model 5270 Data Acquisition and Control System.

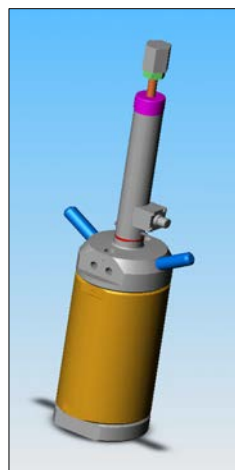
Description

The Model 4268ES Cement Expansion/Shrinkage Cell makes use of the programmable temperature controller that is a part of an existing Chandler Engineering Ultrasonic Cement Analyzer (Model 5265 or 4265). With an add-on pressure controller and Model 6265-I Intensifier, the system is capable



of precise pressure control within ± 50 psi necessary for expansion or

shrinkage measurement. Multiple segment ramps and dwell temperature and pressure schedules may be defined for the sample using the controllers.



FEATURES

- ✓ Continuous Measurement Under HPHT Conditions
- ✓ Cement Sample Isolated From the Pressurizing Media
- ✓ Single Vessel Curing to Preserve Sample Conditions and Testing Integrity
- ✓ Programmable Temperature and Precision Pressure Control
- ✓ Easy to Install and Use in Chandler Engineering Model 4265 UCA; 5265 SGSA and 4265H Horizontal UCA

Specifications

Vessel Volume	200mL
Measurements	±20 mL volume change of the cement sample, sample temperature, sample pressure. Piston displacement may reach -32 mL for initial sample compression
LVDT Measurement Range	±0.500 inches / ±12mm
Maximum Temperature	400°F / 204°C
Maximum Pressure	10,000 psi / 69 MPa

Utilities

Power	85 – 240 VAC, 50 VA or less, 50/60 Hz (LVDT electronics and related data acquisition hardware), refer to power requirements of the specific instrument (Model 5265 SGSA or 4265 UCA)
Water	Filtered pressurizing water, 20-100 psi / 140-670 kPa
Coolant	Clean water or Ethylene glycol solution
Air	Filtered, dry compressed air; 75-125 psi / 520-860 kPa
Drain	Suitable for hot water

Manufacturer's specifications subject to change without notice



CHANDLER ENGINEERING

2001 North Indianwood Avenue, Broken Arrow, OK 74012
Tel: +1 918-250-7200 Fax: +1 918-459-0165
e-mail: chandler.sales@ametek.com www.chandlereng.com

Houston Sales and Service

4903 W. Sam Houston Parkway, N., Suite A-400, Houston, TX 77041
Tel: +1 713-466-4900 Fax: +1 713-849-1924