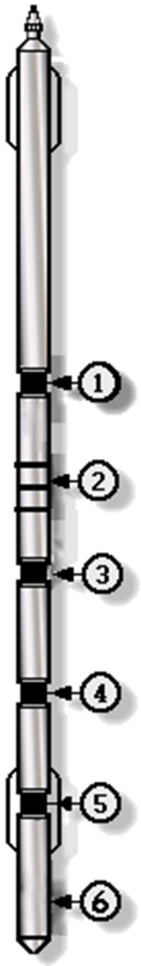
CENTURY GEOPHYSICAL LLC.
PRODUCT DESCRIPTION

4323 Express Stack$_{TM}$ Sonic Tool

Background Information

The Full Wave Sonic tool contains a single transmitter and three receivers to record formation travel times. The full wave form data is also recorded simultaneously, along with near, mid, and far travel times, borehole-compensated delta time, calculated sonic porosity, receiver gains, near/far amplitudes and natural gamma. The sonic or acoustic log uses the basic principle of sound waves traveling through a media. The Century sonic system uses a single transmitter and receiver system for recording the travel times of the formation. The receivers are spaced approximately 3,4, and 5 feet, from the transmitter. Therefore, a 0.3 m (1 ft.) calculation can be made to measure this interval transit time.



Features		
Properties Measured (see diagram)		**Tool Specifications**
1. Transmitter: 24 khz. piezoelectric Offset: 154.4 cm (60 in.) **2. Acoustic Isolator:** Thermoplastic polyester Offset: N/A	**3. Near Receiver:** (3 ft.) spacing Offset:226.7 cm (105 in.) **4. Mid Receiver:** (4 ft.) spacing Offset:297.18 cm (117 in.) **5. Far Receiver:** (5 ft.) spacing Offset:337.9 cm (133 in.)	**Length:**354.4 cm (126 in.) **Temperature:** 120 C (248 F) **Diameter:** 63.5 mm (2.5 in.) **Pressure:** 350 kg/cm^2 (5000 PSI) **Weight:** 34 kg (75 lb.) **Logging Speed:** 9 m/min.@0.06 SI (30 ft./min. @ 0.2 ft. SI)

Sensor Response Ranges		
Sensor	**Response Limits**	**Accuracy**
Near Receiver (NR)	40 to 4096 usec	+/-0.5 usec
Mid Reciever (MR)	40 to 4096 usec	+/-0.5 usec
Far Receiver (FR)	40 to 4096 usec	+/-0.5 usec
Delta Time	-400 - +400 msec	+/-5%
Sonic Porosity	-10 to 100	+/-2%

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