RSCT™ (Rotary Sidewall Coring Tool)

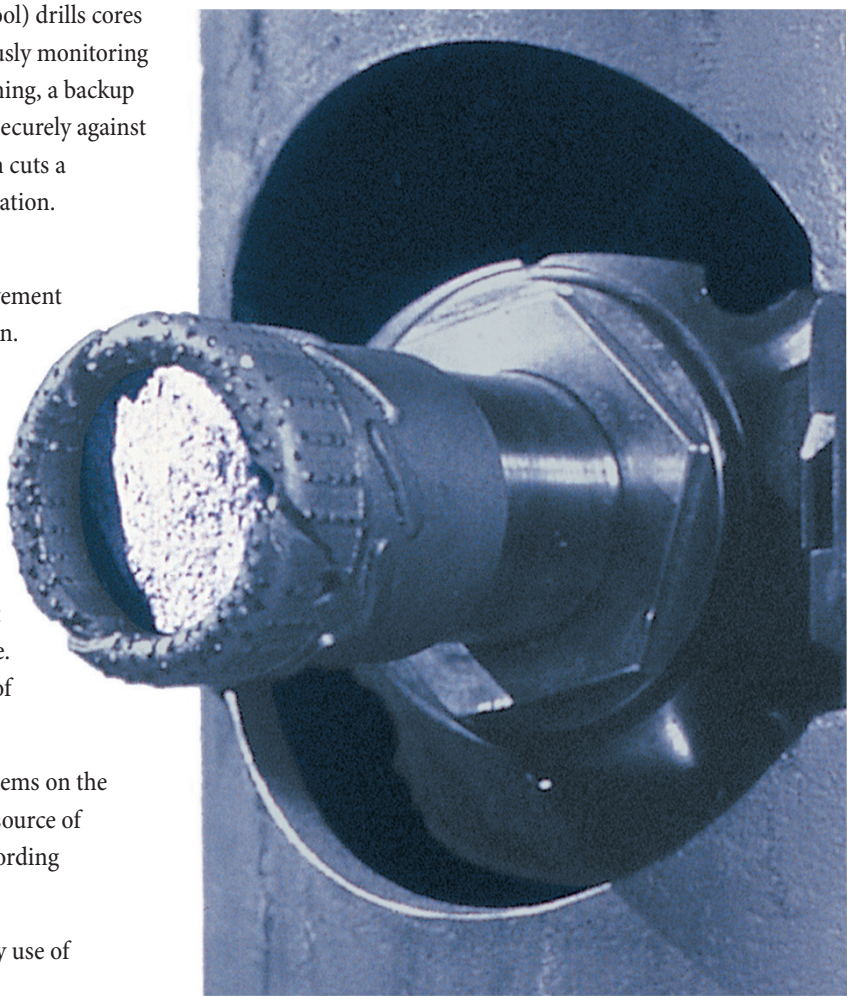
The Halliburton RSCT™ (Rotary Sidewall Coring Tool) drills cores perpendicular to the borehole wall while continuously monitoring the coring process. After gamma ray depth positioning, a backup shoe is extended to decentralize and hold the tool securely against the formation. A diamond bit rotating at 2,000 rpm cuts a 0. 94-in. OD by 1.75-in. long sample from the formation. Surface control of weight-on-bit optimizes drilling.

After the sample has been cut, a slight vertical movement of the bit breaks the core sample from the formation. The bit containing the sample is then withdrawn into the tool, and the core is pushed into a receiver tube. An indicator, on the surface, confirms both the existence and length of the sample. The tool is then ready for the next selected core point.

The RSCT tool is used to obtain core samples in consolidated formations. A tubular-shaped drill bit with diamond cutting edges is used to drill the core. The core is recovered as a cylindrical-shaped plug of the formation.

The system operates independently from other systems on the logging truck or skid. The only input required is a source of AC voltage. A recording device is necessary for recording gamma ray correlation data.

The downhole tool is controlled from the surface by use of the control panel.



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Features

- Enables 30 or more cores to be taken in a single run
- Can be run on Toolpusher™ logging system or coiled tubing to acquire cores in deviated, extended-reach, and horizontal wells
- A core-length indicator takes the guesswork out of core recovery
- Standalone tools can be run on third-party logging units
- Positive depth correlation with a gamma ray tool positioning provides accurate core point location.
- **Drills Undistorted Cores with No Microfractures—** Core samples are undistorted, with consistent cylindrical geometry, which enables a wide range of petrophysical testing and analysis.

Applications

- **Formations.** Originally designed to recover cores in hard-rock formations inaccessible with percussion tools, the RSCT tool can be used with equal success in soft-rock formations.
- **Useful in Formation Damage Assessment.** Enables evaluation of pre-existing formation damage by providing core samples free of distortions caused by percussion tools.

Rotary Core Applications

Rotary core samples collected by the RSCT tool can be used to provide:

- More accurate readings of porosity and permeability that reduce reservoir analysis variables. Microfractures in core samples taken with percussion tools can cause false readings of porosity and permeability
- Information useful in fine-tuning magnetic-resonance imaging (MRIL®) tool data
- Reliable data for rock mechanical analysis necessary for hydraulic fracturing design, wellbore stability analysis, and sand-potential prediction

Health, Safety, and Environmental Benefits

The RSCT tool can enhance safety by eliminating the need to use explosives.

RSCT-B Tool Specifications

Length ft (m)	Diameter in. (mm)	Maximum Pressure psi (MPa)	Maximum Temperature °F (°C)	Weight lb (kg)
23.8 (7.25)	5.25 (133.4)	20,000 (137.9)	350 (176.7)	490 (222.3)