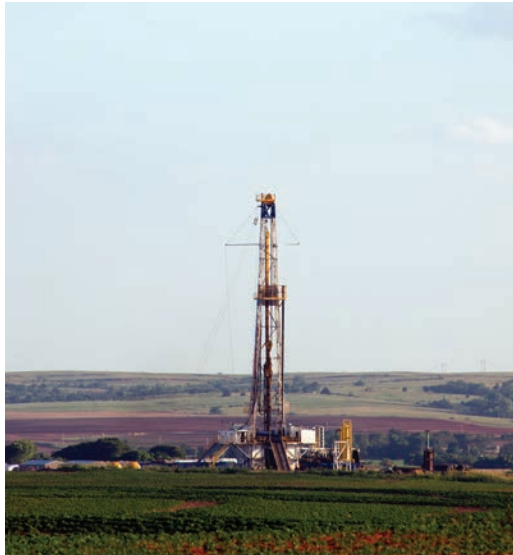


Larger cores help provide operators a better understanding of reservoir dynamics

New Halliburton 1.5-inch sidewall coring tool proven to be one of the most reliable and versatile tools in the industry

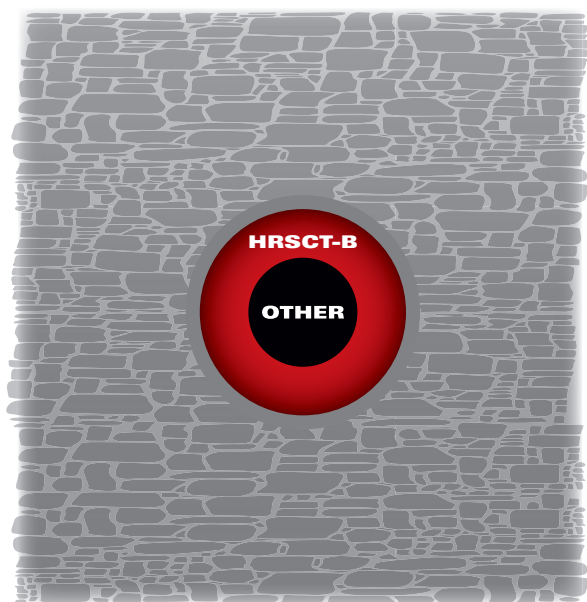


OVERVIEW

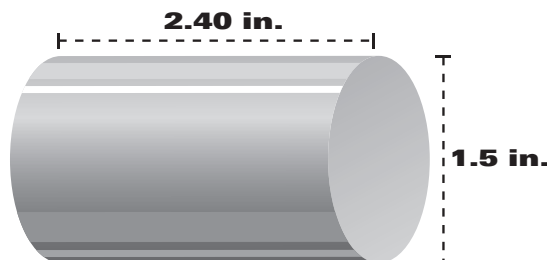
When determining the porosity and permeability of a formation, many clients choose to obtain core samples. Magnetic resonance imaging and other types of formation tests are also used, but many producers prefer to look at core samples to get a more detailed understanding of the formation.

Halliburton recently developed the HRSCT-B™ rotary sidewall coring tool that provides undamaged samples, without microfractures typical in percussion cores. The tool provides samples that are 1.5-inches in diameter and 2.4-inches in length, more than three times the volume of other tools. It's rated to withstand temperatures up to 400°F (204°C) and pressures up to 25,000 psi. Cores can be extracted from consolidated clastics and carbonates offshore, conventional and unconventional wells, making the tool one of the most versatile in the industry.

CHALLENGE	SOLUTION
Larger sidewall cores from tight formations Clients needed a sidewall coring tool that provided a larger sample and better description of the porosity and permeability of formations. Percussion cores use an explosive charge that can form microfractures resulting in unreliably high porosity values, making it difficult to examine.	Larger core samples – three times the size of others The HRSCT-B tool can obtain cores 1.5 inches in diameter and up to 2.4 inches in length, giving clients a sample that is three times the volume of other sidewall coring tools. The tool provides quality plugs without damage, allowing for the most accurate and reliable core analysis.
Different environments and formations Accurate samples are needed in a variety of different formations, including sandstones, carbonates and shales in high-pressure/high-temperature environments. Some have thick mudcake and many have formations that make it difficult to obtain a perfect cylindrical sample.	Undamaged cores obtained in extreme environments The HRSCT-B tool is rated to withstand temperatures up to 400°F (204°C) and pressures up to 25,000 psi. A locking mechanism secures the tool to the formation, enabling the bit to drill into the formation without binding, even at angles, producing a clean, undamaged sample.
Intricate parts created manufacturing challenge The coring tool apparatus consists of many intricate parts from the control electronics to the motor drive section to the mandrel section. The bit box is comprised of metal-to-metal seals with dozens of gears working at varying different speeds depending on the formation characteristics.	Coring tool one of the most reliable in industry All of these intricate parts come together to form one of the most reliable sidewall coring tools in the industry. The tool can hold up to 60 cores at once using multiple core separator tubes. The Graphical User Interface (GUI) surface system display enables real-time monitoring during coring.



TRIPLE THE VOLUME



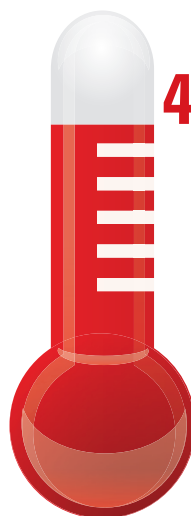
The HRSCT-B sidewall coring tool can extract 1.5 inch cores that are 2.4 inches long, providing a sample three times larger than other sidewall coring tools.

RELIABLE

35/35 CORES RETRIEVED



In Southwest Louisiana, the operator obtained 35 out of 35 core samples in just one run downhole, averaging 3.5 minutes per sample.



400°F

The HRSCT-B sidewall coring tool is rated to withstand temperatures of 400°F and pressure up to 25,000 psi.



25,000
PSI

VERSATILE CORING TOOL

CAN BE USED IN MANY DIFFERENT
ENVIRONMENTS AND FORMATIONS

This versatile coring tool has been used to retrieve cores from land-based wells with tight sandstone formations, deepwater offshore carbonate wells in Brazil, and unconventional shales throughout the US.

New Halliburton 1.5-inch sidewall coring tool proven to be one of the most reliable and versatile tools in the industry



Rotary sidewall coring needed for numerous undamaged samples

The decision to drill a well in a particular field is one of the most important an oil and gas company can make. Producers, geologists and petrophysicists spend hours combing over seismic surveys, magnetic resonance images and more to determine if a well will produce. Numerous core samples are needed to help make these critical decisions. Sidewall coring gives producers a large number of samples, but the size of the samples has historically been a limiting factor. Percussion drilling is commonly used to obtain sidewall cores, but the explosive charge used to shoot barrels into the formation can often damage the core sample, resulting in higher than normal porosities. Rotary sidewall coring tools provide better, undamaged samples.



New sidewall coring tool provides larger cores and better samples

Halliburton recently introduced its latest sidewall coring tool, the HRSCT-B tool. This versatile, reliable coring tool is a new approach for acquiring multiple sidewall core samples. It is efficiently designed to provide a combination of high-speed bit rotation, torque and bit advancement for the best drilling performance. The tool provides undamaged core samples that can easily be acquired in a single run for a range of testing and analysis. Core samples are 1.5 inches in diameter and up to 2.4 inches in length, giving clients a sample more than three times larger than other sidewall coring tools.



Coring tool can be used in variety of environments and formations

This versatile coring tool is rated to withstand temperatures of up to 400°F (204°C) and pressure up to 25,000 psi, making it ideal for high-pressure/high-temperature wells. It can also be used in a variety of wells from conventional and unconventional to offshore. It features a locking mechanism that secures the tool to the formation, enabling it to drill without binding.

Tool operates faster and more reliably than competitors'

The HRSCT-B tool apparatus consists of many intricate parts from the control electronics to the motor drive section to the mandrel section. The bit box is comprised of dozens of gears that work at different speeds, enabling reliable drilling and reducing the possibility of lodging and sticking of the bit in the formation. The mandrel section of the tool can hold up to 60 cores using multiple core separator tubes, enabling a greater number of samples. The tool also operates at 1500 revolutions per minute with a 22-inch torque, enabling faster drilling times. The GUI provides real-time monitoring of bit torque, revolutions and bit advance pressure while drilling the core, giving wellsite geologists an excellent visual aid during the coring process.

New Halliburton 1.5-inch sidewall coring tool proven to be one of the most reliable and versatile tools in the industry



Operator retrieved 100% of cores in Southwest Louisiana

In an effort to determine whether or not a well in Southwestern Louisiana would produce, this energy and exploration company elected to use the HRSCT-B tool to retrieve several core samples from a tight sandstone well. The company wanted a detailed look at the porosity and permeability of the formation. 35 core samples – 2.25 inches long – were retrieved from various depths. The cores were obtained in one run downhole and at an average of 3.5 minutes per core, some taking less than 90 seconds to retrieve. This speed and accuracy saved the company time and money.



Energy Company obtained cores from deepwater wells in Brazil

The HRSCT-B tool was used during several core retrievals in deepwater Brazil. In one job, 87 cores samples were recovered in two runs downhole. The deepest core was retrieved at 22,000 feet (6700 meters). In another project, 100% of the 23 cores were obtained from a well that had a depth of close to 14,000 feet (4267 meters). The multinational energy corporation that hired Halliburton has been so impressed with the results in these offshore well that it continues to include the HRSCT-B in its evaluation programs.

Eagle Ford Shale operator acquired needed cores samples faster

This independent oil and gas company needed core samples from a well in the Eagle Ford Shale in South Texas. In one well, all 49 requested cores were obtained in just 5.5 hours and in just one run downhole. In another job in the same region for the same client, 33 cores were recovered in eight hours. The customer was very pleased with the job and the fact that the tool recovered the number of cores they requested.

Versatile coring tool provided reliable information for clients

The accuracy, reliability and versatility of the HRSCT-B tool provided much larger samples and detailed answers about a variety of formations. The tool's ability to retrieve multiple samples in just one run downhole and the detailed reservoir understanding that producers get from the samples is quickly making it a leader in sidewall coring.

