

ShockWave shaped-cutter technology

Drill Faster. Drill Farther.

The **ShockWave™ shaped cutter** from Baker Hughes, saves time and money by extending cutter life to enable your drill bit to drill faster and farther. Designed for the Baker Hughes **Dynamus™ extended-life drill bit platform**, our novel ShockWave geometry improves cutter-rock interaction for efficient drilling and increased durability in all applications.

Drill faster, farther

The ShockWave shaped-cutter geometry increases stress on the rock, enabling the rock to fracture with less energy. The result is a cutter that drills like a single chamfer cutter with the impact resistance of a dual chamfer cutter, resulting in increased ROP for a given weight on bit (WOB).

Heat on a cutter's face causes it to wear and chip faster. This cutter's unique shape moves the rock up the trough and breaks it as it hits the ShockWave feature. Cuttings are projected away from the face of the cutter—resulting in lower heat on the diamond table. Less heat on the diamond table results in longer cutter life.

Optimize placement, performance

Combining our advanced design modeling and bit-testing capabilities with our unmatched shaped-cutter portfolio, Baker Hughes drill bit experts can optimize the placement of Shockwave

shaped-cutters on your bit to deliver optimal performance across multiple formation types and applications.

Our Tetrahedron 3D bit drilling simulation software evaluates cutter and bit body interactions with the rock. Complex formation types are modeled, and field-based parameters are used to create a digital twin of the target application. The proprietary cutter force models have been calibrated by lab tests from the high-pressure simulator drilling lab. The customized cutter placement optimization process includes the Tetrahedron performance analysis that determines the ROP response and bit aggressiveness for the given cutter layout, rock properties, and drilling mode.

The simulation is set up to accurately reflect the application description and is calibrated to reflect the bit damage identified by the dull study for the application. Using this powerful software, our service delivery teams determine the selection of the best drill bit frame for the application and establish the ideal placement of ShockWave shaped cutters to your drilling performance.

Contact your Baker Hughes drill bit representative today and discover how ShockWave shaped cutters can help you drill faster and farther on your next well.

Applications

Abrasive and interbedded formations

Benefits

- Lowers WOB requirement for a given ROP
- Reduces friction on diamond table
- Lowers heat generation at cutter/rock interface
- Breaks up rock cuttings to improve efficiency
- Enables faster drilling and longer runs