

[Baker Hughes Inc.](#) (NYSE:BHI) announced today the commercial release of its Dynamus® extended-life polycrystalline diamond compact (PDC) drill bit which can significantly reduce drilling costs by eliminating trips to replace bits or bottomhole assembly (BHA) tools that wear out in high horsepower drilling operations. The Dynamus bit is built on a robust frame that incorporates stabilizing elements to prevent lateral vibrations as well as proprietary cutters engineered to minimize wear. Reducing vibrations not only extends bit life, it also helps extend the life of other BHA tools and deliver smoother drilling performance for improved borehole quality.

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The Dynamus bit is built on a new, robust frame that incorporates stabilizing elements to prevent lateral vibrations as well as proprietary cutters engineered to minimize wear. (Photo: Business Wire)

“Our customers are demanding more from their drilling equipment than ever before. They are drilling through harder formations and interbedded sections using more horsepower, more torque and higher weight-on-bit,” said Scott Schmidt, Vice President, Drill Bits at Baker Hughes. “Unfortunately, this often leads to excessive downhole vibrations, premature cutter breakdown, damage to the bit body itself or some combination of the three, and that it turn leads to unplanned trips. In high-cost applications, or over the course of a drilling campaign, these trip costs, or even the cost of drilling ahead with a damaged bit or BHA, can add up to millions of dollars.”

The Dynamus bit includes StayTrue® shaped diamond insert elements which stabilize the bit to reduce lateral vibrations by more than 90 percent—mitigating vibration-induced damage to both the bit and highly sensitive BHA components containing electronics. The bit’s long-life StayCool® 2.0 cutters deliver superior performance across a wide-range of formation types by generating 30 percent less heat than standard PDC cutters. This reduces wear and premature weakening of the cutters that is often a result of excessive heat generation.

The Dynamus bit’s elements and cutters are incorporated into a newly designed body comprised of an extremely tough matrix material that resists cracking and is capable of handling extreme operating loads that would damage conventional PDC bits. A new, holistic Finite Element Analysis (FEA) protocol was developed and implemented during the design phase to accurately predict the Dynamus bit’s reaction to real-world forces. These FEA simulations helped the design team optimize the bit’s blade strength and structure to minimize risk in the most demanding applications.

In the Delaware Basin, a Dynamus bit recently demonstrated its value by increasing a customer’s ROP by 32 percent compared to the average ROP on offset wells drilled through the same interbedded formations. The customer was able to complete their section in a single trip, whereas previous wells had required multiple trips to drill through the same section. When the bit was analyzed after the job, it had 70 percent less wear damage than the best offset bit, even though it had drilled further, indicating that the Dynamus bit effectively mitigated and withstood the extreme drilling forces that offset bits weren’t able to.

“The Dynamus bit is going to deliver significant value for our customers,” said Schmidt. “Now they don’t have to rein-in WOB or torque. Instead, they can harness their full horsepower to drill full sections faster than ever without worrying about tripping.”

This Dynamus bit is the first in a new line of long-life bits that Baker Hughes is developing to help operators address various drilling dysfunctions, improve performance and reduce costs.

The Dynamus bit is the latest example of Baker Hughes’ strategy to improve well efficiency, optimize production and increase ultimate recovery.

Baker Hughes is a leading supplier of oilfield services, products, technology and systems to the worldwide oil and natural gas industry. The company’s 32,000 employees today work in more than 80 countries helping customers find, evaluate, drill, produce, transport and process hydrocarbon resources. For more information on Baker Hughes, visit: www.bakerhughes.com.

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