

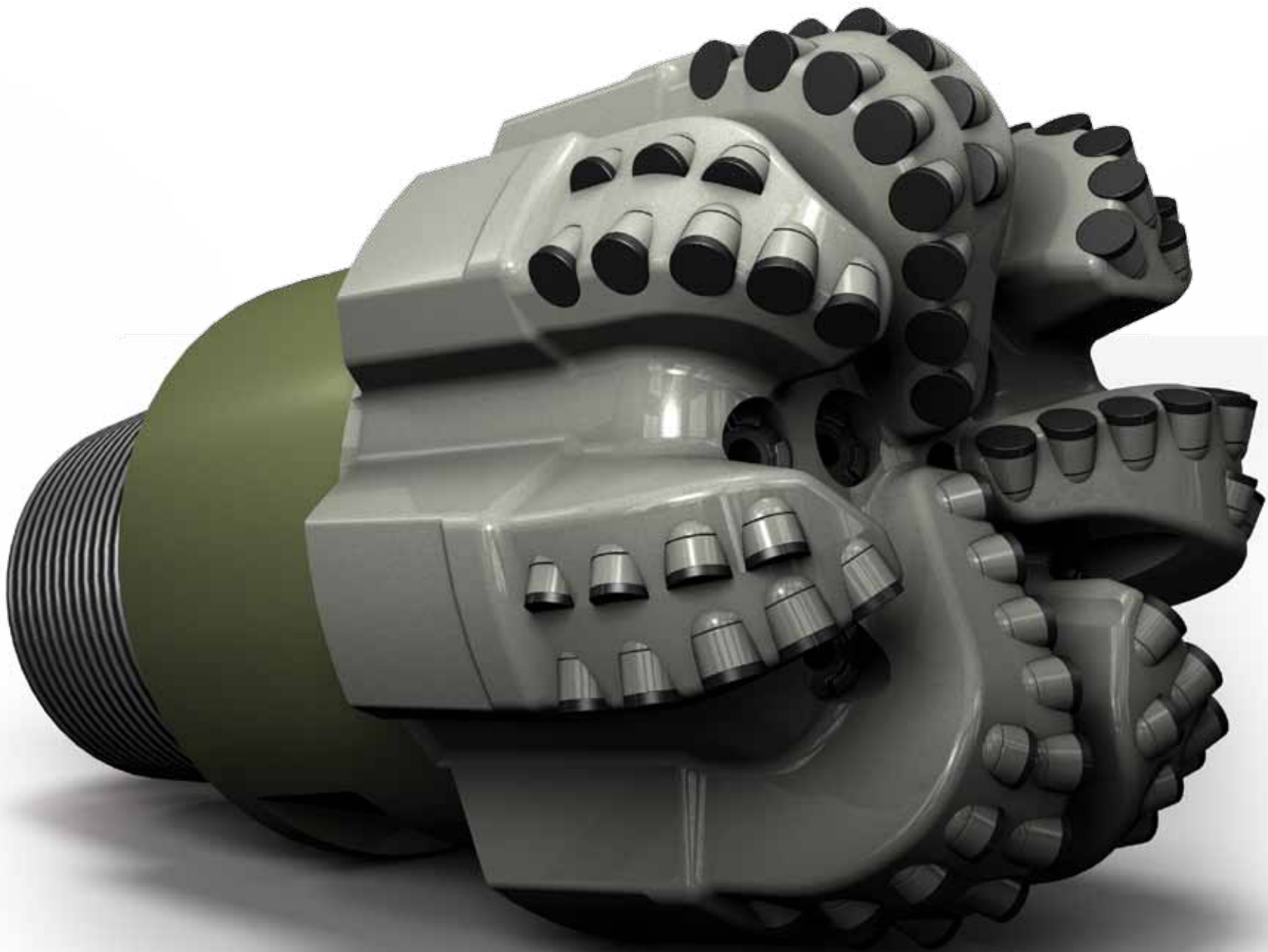


SHARC

High-performance drill bits for hard, abrasive formations



Facing the highly abrasive, interbedded Travis Peak, Cotton Valley, and Hosston formations in eastern Texas and northern Louisiana, engineers developed SHARC high-performance drill bits for hard, abrasive formations. The SHARC family of polycrystalline diamond compact (PDC) drill bits attains consistently high performance and reliability in hard formations, whether run from surface or picked up in the hole.



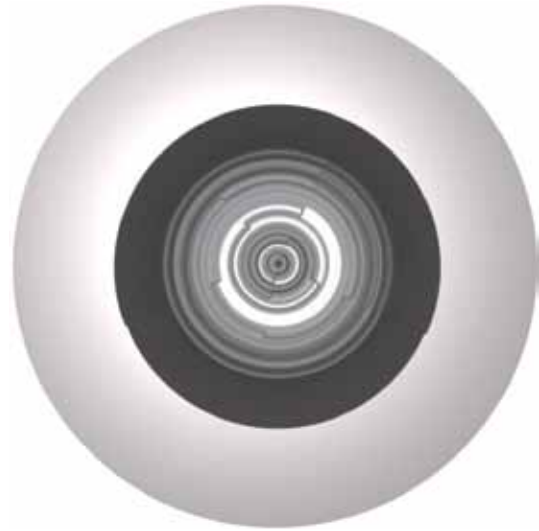
The IDEAS advantage

Before running in a well, all SHARC* PDC bits are designed and certified using the IDEAS* integrated drillbit design platform. This process gives engineers a full understanding of the dynamics of the drill bit at the rock-cutter interface. In a virtual environment, the IDEAS system shows how the bit behaves as an integral part of the whole drilling system. With even the smallest change in cutter position or orientation affecting the dynamic stability of a bit, the IDEAS process provides a detailed graphic representation of the elements that impact drilling.

The IDEAS software details

- rock-cutter interface
- how each tooth, insert, or PDC cutter removes the formation
- the movement of the bit within the wellbore
- the force and bending moment condition of the drillstring
- each element of the BHA

It uses a 4D simulation model to design, test, and analyze bit performance in drilling a virtual well. Drill bits designed with this process move from conceptual to field-proven performance much quicker than those developed traditionally. The result is a bit optimized specially for the well in which it is to be run.



The bottomhole pattern delivered by SHARC bits is completely dynamically stable.



Wear-resistant cutters

To complement SHARC PDC drill bits, an exclusive family of cutters was created for drilling abrasive formations. Featuring the latest in both materials selection and diamond interface design, these cutters are more wear resistant than cutters run in conventional applications. They are designed for a high level of inherent stability so that undesirable vibrations are eliminated, along with the possibility of cutter damage due to impact.

Where bit size and stringent stability objectives allow, SHARC cutting structures have two rows of cutters set on selected blades. These individual cutter rows reinforce each other to provide maximum durability over the critical nose and shoulder areas of the bit. Along with extended drillbit life, this configuration offers hydraulic cleaning and cooling efficiencies so that the bit can be run in fast surface intervals and on low-hp/in² (HSI) motor runs.



Compared with conventional cutters, SHARC cutters have less normalized wear area per normalized rock volume removed.

SHARC

The ultimate in high-performance PDC bits



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