

Xplorer Kaldera

High-temperature seals

APPLICATIONS

- High-temperature environments
- Hard and abrasive formations

BENEFITS

- Increases seal life and integrity in temperatures exceeding 500 degF [260 degC]
- Superior durability for longer on-bottom drilling time and run length

FEATURES

- Specialized fabric compounds
- Proprietary HT grease formula
- Improved lubricity
- Higher load capacity

Xplorer Kaldera* high-temperature seals for roller cone bits are specially designed to endure HT drilling environments like geothermal wells for extended periods.

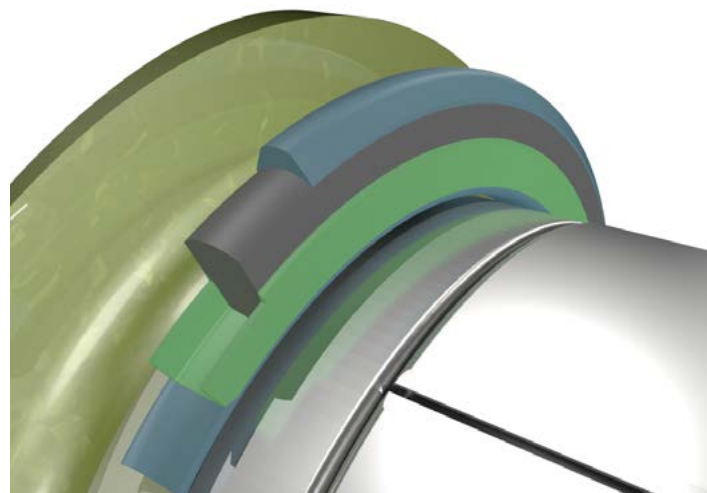
In many cases, the TCI roller cone bits used to drill hard and abrasive lithologies to access steam or hot rock in basement formations are exposed to temperatures that exceed 500 degF. Under these conditions, standard 300 degF- [149 degC-] rated elastomer seals and lubricating material quickly degrades, causing bearing failure and resulting in operational inefficiencies: reduced on-bottom drilling hours leading to multiple bit runs and increased development costs.

Xplorer Kaldera seals are made of specialized fabric compounds and utilize a proprietary high-temperature grease formula. These innovations increase seal life, lubricity, and load capacity at elevated temperatures for HT applications.

Tested against baseline bits, Xplorer Kaldera seals have proven durability in high-temperature applications. For example, in geothermal superheated steam applications where temperatures can reach 530 degF [277 degC], Xplorer Kaldera seals resulted in top performance, including:

- improving on-bottom drilling time by 3–37%
- increasing run length by 33%.

A secondary seal protects the primary seal. It guards against abrasive particles in the wellbore fluids that contact the bearing seal. A proprietary thermoplastic fabric is positioned on the seal's dynamic face to resist wearing, tearing, and heat damage.



The multiple elements of Xplorer Kaldera seal technology increasing run length by 33%.

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SMITH BITS

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