

AxeBlade

Ridged diamond element bit

APPLICATIONS

- Vertical, curve, and lateral sections
- Any BHA configuration
- Medium to hard formations with unconfined compressive strengths (UCSs) greater than 5,000 psi [35 MPa]

BENEFITS

- Reduces rig time and saves costs by delivering faster, instantaneous ROP
- Achieves directional objectives in less time and maximizes production zone exposure

FEATURES

- Axe* ridged diamond elements combine shearing and crushing actions to cut rock more effectively
- Thicker diamond table on cutter ridge increases cutting element durability and maintains desired ROP throughout the run
- Ridge-shaped cutting element geometry reduces cutting force requirement for less overall torque, less reactive torque fluctuation, and better toolface control

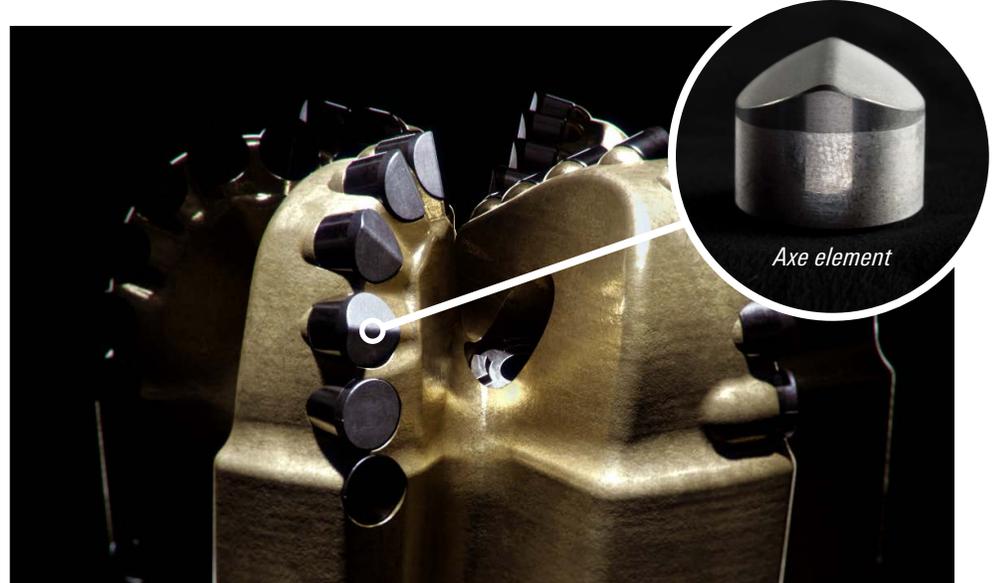
The AxeBlade* ridged diamond element bit enables significant ROP improvement in a wide range of applications while also improving steerability in directional wells. Field tests and extensive BHA runs repeatedly demonstrate typical ROP improvement up to 29%, but as high as 84%, as compared with premium PDC cutters using the same bit design. Performance of the AxeBlade bit is owed to the Axe element strategically placed across the bit blade. Axe elements feature a unique ridge-shaped geometry that combines the shearing action of a conventional PDC cutter with the crushing action of a tungsten carbide insert (TCI).

Increased cutting efficiency for instant ROP improvement

The crushing and shearing action of the Axe element achieves at least 22% deeper penetration to provide higher instantaneous ROP using the same weight on bit and rpm applied to conventional PDC cutters. The key is in the ridge-shaped geometry which yields a diamond table that is 70% thicker than a conventional cutter, while providing higher frontal impact resistance. This feature translates into improved durability and dull conditions for maintaining maximum ROP throughout the run.

Enhanced control in directional applications

The reduced cutting force required by AxeBlade bits translates to less overall torque, reduced reactive torque fluctuation, and better toolface control in curve applications. This advantage enables better build rates and higher overall ROPs, helping maximize production zone exposure and minimize drilling time.



Fitted with ridged diamond elements, the AxeBlade bit increases ROP and improves steerability, maximizing cutting efficiency while reducing torque fluctuation.

Specifications

AxeBlade Bit	Formation Type	Cutting Element Size	Classification
	Hard, brittle	13 mm 16 mm	3D cutting element