INCREASE DRILLING EFFICIENCY BY MINIMIZING DRILLING VIBRATION

CounterForce® technology is the answer to minimizing PDC bit vibration for increased drilling efficiency. Now, you can significantly reduce vibration that causes below-average drilling performance while destroying premium PDC bits. Applying patented cutter orientation, the technology redirects vibration from the bottomhole assembly into the formation so you can improve toolface control, enhance the bit life and dull condition, and raise ROP. CounterForce technology is field-proven with 50 million feet of hole drilled, including vertical wells, curves, and laterals.

* Lateral vibration is detrimental to the integrity of traditional cutting structures, but Ulterra’s® proprietary CounterForce cutting structure redirects the lateral vibration back into the formation keeping the cutters sharper, longer.
ADVANTAGES

- Delivers Higher ROP
- Reduces Bit Vibration
- Smooth Toolface Control
- Enhances Drilling Efficiency
- Directs BHA Vibration to Fail Rock
- Requires Less Energy To Fail Rock
- Delivers A High Quality Wellbore
- Drills More Footage Per Bit
- Lowers Cost-Per-Foot
- Cuts Drilling Time
Less energy can remove more rock when the drilling force is working with you rather than against you, that’s what you get from this technology’s advanced cutter orientation that maximizes rock failure with less energy. Unlike conventional PDC bits, these cutters work together with a proprietary cutter angle that slices the formation. The cutters, which remain sharper to last longer for enhanced ROP while reducing bit trips, allow the bit to grasp the bottomhole pattern. The necessary traction and stability manage what would be destructive and efficiency-robbing vibration so you can also improve toolface control while enhancing the bit life and dull condition.
As WOB and torque rise, ROP should improve and fail the rock. If not, the additional energy will cause vibration. Torsional, axial, and lateral vibration can become stick-slip, bit bounce, and whirl, respectively. One leads to another, increasing the MSE, a common measure of how torque is applied to drill a well. Lower MSE means less torque is required to reach the desired ROP. CounterForce technology requires considerably lower MSE. By overcoming all three types of vibration, more energy is applied by overcoming damaging vibration throughout a run.

MSE is a common measure of how efficiently energy - mainly torque - is used to drill a well. Lower MSE means that less torque is required to achieve ROP.

The CounterForce bit displays considerably lower MSE and hence less energy wasted to damaging vibration throughout the run. For the entire run, the CounterForce design drilled more efficiently and delivered significantly more ROP for the same WOB and torque.
Counterforce has an unmatched ability to drill more efficiently in vertical applications by redirecting lateral vibrations back into the formation. With CounterForce’s unmatched stability, the effect of bit whirl is greatly reduced, thus decreasing its effect on ROP. While looking at the 12.25” market in West Texas, on average CounterForce drill bits drill 30 feet per hour faster than conventional PDCs. This improved performance is achieved because a CounterForce bit can power through the difficult formation transitions with more consistent cutter engagement, causing less vibrational damage to the bit and BHA.

While drilling the curve, an Ultra CounterForce PDC drill bit lessens torque fluctuations resulting in superior tool face control. This allows directional drillers to effortlessly achieve the desired build rates by enhancing the steering ability for improved performance in complex curves. CounterForce allows for efficient rock shearing, providing the smoothest curve possible. In fact, since the introduction of CounterForce into the Williston Basin in North Dakota, the average curve drilling time has been reduced by 45% compared to PDC bits with conventional cutter layouts.
Lateral

DHT reliability and consistency is vitally important for every drilling rig’s operations. The main culprits around downhole tool failures are lateral vibrations and damaging torque fluctuations that lead to a compromised DHT. Mitigating the risks of vibrations and torque fluctuations is an important aspect of drilling with RSS as it directly impacts its performance and longevity. Ulterra’s CounterForce design has consistently resulted in fewer downhole tool failures than other bit vendors with traditional cutter layouts. While drilling on RSS in the EagleFord, CounterForce has cut the tendency of DHT failures in half when compared to other bit vendor’s traditional cutter layouts, making CounterForce the go-to bit selection for operators running RSS.

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Competitors

- 32% for Competitors
- 13% for CounterForce

*Nontraditional cutting structure shows a 32% likelihood of being pulled for a DTF, while CounterForce design shows only a 13% chance. Cutting the tendency for a DTF by more than half.
Ulterra is dedicated to maximizing the efficiency of oil and gas drilling operations through the use of groundbreaking drill bits and application technologies. Throughout the world’s drilling basins, we are building our reputation on performance. Let Ulterra show you how we can improve your drilling efficiencies and lower your costs by contacting a representative near you.