QuadPack® Plus Bits

New Leader In High Performance Drilling
(Includes bit sizes 13-1/2” and smaller)

Drill Bits and Services has completely revamped its line of roller cone bits and created a new performance leader, the QuadPack® Plus bits. Drill Bits and Services manufactures the bit line in a remarkable new plant, a facility which sets the benchmark for efficiency, precision, and quality control.

The QuadPack Plus series features a robust platform to achieve increased rates of penetration and durability. In addition, the bit line offers an optional feature, the Energy Balanced® series, a cutting structure which provides unmatched vibration control. The result: operators can maximize bit life and protect sensitive BHA measuring devices while achieving lowest cost-per-foot.

Drill Bits and Services dedicated a highly talented team to re-design, test, and deploy a new generation of roller cone bits to take the lead in reliability, using the most advanced R&D technologies. Full scale laboratory testing enabled the company to fine tune bit designs by applying actual drilling parameters such as weight-on-bit, RPM, and operating temperatures. The company modeled computational fluid dynamics (CFD) to optimize cleaning efficiency, taking hydraulics to a new level. And finally in the field, hundreds of bit runs confirmed that QuadPack Plus bits outperformed the others, run after run.

PROVEN ROBUST PLATFORM

- Unique arm profile creates fluid lifting action to entrain cuttings and move them up the hole for more efficient cleaning.
- Larger, More Robust Arms
- Enhanced Seal Reliability
- Larger Bearing Capacity
- More Responsive Pressure Compensation System

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Drill Bits

Dynamic Cleaning Action Sharply Enhances Rate of Penetration and Efficiency

1. UNIQUE ARM PROFILE
   Only QuadPack Plus bits feature a curved aero profile that creates flow channels and lifting surfaces that entrain cuttings up the annulus.

2. COMPARE QUADPACK PLUS TO CONVENTIONAL BITS
   CFD tests (Computational Fluid Dynamics) show that QuadPack Plus bits dramatically improve cleaning circulation with greater force and thoroughness. This illustration is a stylized rendering of an actual CFD test.

3. ORIENTED NOZZLE FLOW
   Oriented nozzles are directed towards the leading cutting-edge to maximize cutter formation engagement. Flow channels between the arms provide efficient passage to clear cuttings off bottom hole and circulate them up the annulus. This illustration is a stylized rendering of an actual CFD test.

4. BETTER CLEANING BELOW THE BIT
   CFD tests show QuadPack Plus bits provide more complete sweep across the bottom of the hole to improve rates of penetration and decreasing redrilled cuttings. This illustration is a stylized rendering of an actual CFD test.

5. LARGER, MORE ROBUST ARMS
   The result is greater durability, improved protection, and larger reservoir for increased grease capacity. Left, the former arm. At right, the new larger arm.

6. MORE RESPONSIVE PRESSURE COMPENSATION SYSTEM
   A more responsive system significantly reduces differential pressure variation on the seal. This equalizes pressure inside and out, which greatly diminishes seal stress and enhances the durability of the bearing-seal system. The rubber diaphragm system is quick acting in achieving pressure equalization.

7. GREATER SEAL RELIABILITY
   Greater reliability is the result of higher thermal properties and improved wear resistance in seal materials. The system has also been re-designed to be more effective in preventing contamination encroachment.

8. INCREASED BEARING CAPACITY
   Efficient load distribution across the bearing surface has significantly increased the load carrying capacity for today’s more demanding application. Left, the former bearing. At right, the new bearing for bits 13-1/2” and smaller.

Longevity Features Provide Leading Performance and Reliability

The QuadPack Plus hydraulic system includes oriented nozzles, flow channels, and arm lifting surfaces which work synergistically. The system was engineered to create a highly controlled, upward circulating spiral of fluid to entrain and lift cuttings with maximum efficiency. This illustration is a stylized rendering of an actual CFD test.