Turbopower™ Turbodrills

LOWERING COST PER FOOT IN HARD AND ABRASIVE ENVIRONMENTS

OVERVIEW
Do you want to lower your cost per foot by avoiding frequent tripping and non-productive time in hard and abrasive and high-temperature environments? Hard and abrasive formations cause rapid bit wear and lead to frequent trips when using conventional drilling motors. High pressure and high temperature environments can cause elastomer breakdown in motors leading to poor motor performance and high nonproductive time (NPT) due to failures. Cost per foot increases significantly with each trip and with the replacement of each failed or worn motor or bit. The Turbopower™ turbodrill is the best turbine drilling motor for customers experiencing high NPT due to frequent tripping for motor failure and bit wear because the all-metal design and system matched diamond impregnated bit keep the bit on the bottom drilling to reach target depth in one run and lower the cost per foot.

MORE SPEED. MORE DURABILITY. MORE FOOTAGE.
The high speed and power output of a Turbopower™ turbodrill matched with a TurboForce™ diamond impregnated bit efficiently drills through hard and abrasive formations and in HPHT environments. The all-metal design allows turbodrills to operate in ultra-high temperatures (up to 572°F / 300°C) and provides resistance to pressure, high-solids fluids, heavy mud weight, and chemicals. Turbodrills can also be used in multi-phase fluids. Advanced components, including PDC thrust bearings, titanium flex shaft, and tungsten carbide insert radial bearings ensure the power and reliability expected from Turbopower™ turbodrills.

Reduce downtime from bit sticking by minimizing bit contact area with the wellbore with the Halliburton patented ASD anti-bit sticking device technology and short-gauge TurboForce™ bit. The ASD creates a small over gauge in the wellbore reducing the chance of the bit sticking resulting from formation movements or stress release. The design eliminates spiraling commonly seen with short-gauge drill bits on conventional turbines.

When precise directional control is required, turbodrills are the industry’s only turbine with At Bit Inclination (ABI). The ABI allows better and faster decisions to keep the wellbore on target. Use fixed or adjustable bent housings within the bearing section to direct the tool when operating in sliding mode, or adjust the bent housing to 0° (zero degrees) for straight-hole operations. Achieve desired dogleg (DL) or build rates with short-bit-to-bend (SBB) turbines or double-bend turbodrills, which incorporate fixed
housings with two bends and shorter lower ends. The reduction in bit-to-bend length results in higher dogleg or build capacity and faster directional response ensuring your wellbore is on target. Tailor the engineered solution to the pressure capability of the rig to ensure efficient power transfer. On 90-percent of standard rigs, Turbopower™ turbodrills are capable of handling the maximum flow rate. For rigs capable of pumping at higher flow rates, use the 9-5/8-inch high-power turbine with an extended bearing section. For low pressure or flow operations, the T2 (two turbine section) configuration doubles the pressure and torque output for a given flow and mud weight compared to the standard single section tool configuration.

Turbopower™ turbodrill maximize asset value in the most hostile drilling environments by reducing well time and cost per foot.

APPLICATIONS

For conventional, hard and abrasive, and HT/HP wells, a turbodrill can be used to deliver the following well types in areas like Deep Water, Mature Fields, and Geothermal wells (if granite is not found in the formation):

» Underbalanced
» Vertical
» Horizontal and multilateral wells
» Kickoff
» Sidetracks, including openhole sidetracks

Turbodrills can also be used to drill out casing shoe.

BENEFITS

Drill to Produce

» Increase well production with accurate well placement using the industry’s only turbine with at-bit inclination
» Improve wellbore quality by eliminating spiraling and reducing torque and drag
» Maximize reservoir contact using the high DL capability of short-bit-to-bend turbine to reach drilling targets and reduce time sliding or making corrections

Enhance Reservoir Understanding

» Improve logging results by virtually eliminating lateral vibration with the turbine’s impulse motor

Reduce Well Time

» Avoid bit sticking incidents / lost in hole BHAs with the patented ASD anti-bit sticking device and short-gauge pin up bit
» Minimize tripping for motor and bit failures by keeping the bit on bottom longer with the all-metal turbine and diamond impregnated bit
» Increase drilling speed with the very high power and RPM output that spins the bit faster than a conventional motor
» Reduce MWD and BHA failure and related NPT with the smooth impulse transmission of power from the turbodrill to the bit and the hydraulic cushioning effect against drill bit shocks
» Eliminate the need for wiper trips prior to running casing and reduce time spent for running casing and liners, and for cementing with the superior wellbore quality

FEATURES

» All-metal design
  • Highly-resistant to temperature, pressure, high-solids fluids, and chemicals
  • Delivers longer runs with consistent power
» Most advanced components in the industry: PDC thrust bearings, titanium flex shaft, and tungsten carbide insert radial bearings
» High-flow blades extend the flow range of standard tools increasing flow, specific power, and torque to the bit
» Repair and maintenance can be done in any local repair shop