



3-1/8" COLT™ CTD System

Increase production by drilling underbalanced with Coiled Tubing

The COLT™ BHA is targeted at hole sizes, between 3-5/8" and 4-3/4". Its small diameter makes it particularly suited to thru-tubing re-entries or re-entries through small casings. It is purpose built for drilling in underbalanced conditions and its full range of sensors give it true drill-by-wire porosity changes with AnTech's RockSenseSM service.

Built for precise drilling, the Continuously Rotating Orienter of the COLT™ BHA lets the directional driller incrementally adjust trajectory on the fly. The build section and a perfectly straight lateral can be drilled in one run. This avoids the wavy wellbores that limit reach and weight-on-bit.

The COLT™ BHA was first used in 2008 and has been exclusively used for underbalanced drilling with fluids ranging from nitrified fluids to air-foam.

COLT™ can be used with both PDMs and drilling turbines.

Applications

The COLT™ Tool is suitable for all types of Coiled Tubing Drilling. Typical applications include:

- Re-entry & Thru-tubing Re-entry Drilling
- Multilaterals
- Coal Bed Methane
- Gas Storage
- Underground Coal Gasification (UCG)

Tubing End Connector

Cable Head

Electric Release

Continuous Rotating Orienter (CRO)

Sensor Assembly
Magnetic Steering
WOB/TOB, Int/Ext
Pressure and
Temperature,
Gamma, Vibration

PDM (or Turbine)

PDC Bit



Multi-cycle
Circulation Valve

CCL

Dual Flapper Valve

Features & Benefits

Short length – Tool rig-up is done in one single section above the master valve, speeding up operations, reducing connections and avoiding the need for live well deployment.

All-electric system – The wireline system is independent of the fluid in the well, so the tool can be used in aerated fluid applications and can operate in underbalanced conditions.

Electric Orienter – A fully Continuous Rotating Electric Orienter (CRO) gives precise directional control and enables the tool to drill the build and straight section in one run.

Complete sensor package – Real time information is provided for weight-on-bit (WOB), torque-on-bit (TOB), temperature, pressure, vibration, inclination, azimuth, tool face and gamma ray. This allows real time monitoring of both tool position and drilling conditions for optimum performance.

Tuned against vibrations - COLT™ is designed to withstand harsh downhole vibrations in aerated fluids, with metal-to-metal seals, improving sealing and protecting the tool's components.

Straight flow path – Drilling fluids flowing at high velocities can cause cavitation and erosion. The straight flow path through the tool minimises these problems, and the short length helps reduce the pressure drop along the BHA.

Optional integrated orientation gyro – The addition of the gyro allows the tool to be orientated to set whipstocks and to exit the casing in the right direction without being affected by magnetic interference.

RockSenseSM - Real-time, at-bit, synthetic porosity signature service for bed boundary identification. No additional hardware. Inch-by-inch data.

Specifications

Dimensions	
Outside Diameter	3.125" (79.4mm)
Inside Diameter	0.7" (18.0mm)
Length without motor and bit	25.3ft (7.7m)
Length incl. motor and bit	38.4ft (11.7m) (dependent on motor and bit used)
Mechanical	
Max. Operating Pressure	10,000psi (690bar)
Max. Differential Pressure	5,000psi (345bar)
Max. Tensile Rating (@ 80% yield)	50,000lbf (220kN)
Max. Compression Rating	26,000lbf (115kN)
Max. Torque Rating	1,000lb-ft (1,350Nm)
Max. Build Rate	50°/100ft (50°/30m)
Environment	
Max. Operating Temperature	320°F (160°C)
Fluid Types	All incl. air, nitrogen foam and mud with H ₂ S
Vibration (continuous)	30g _n (@10-500Hz)
Vibration (shock)	50g _n Maximum (0.5ms half sine)
Electrical	
Wireline Conductors	7-conductor (standard) 1-conductor (optional)