RipTide™ drilling reamer

Hole Enlargement While Drilling - HEWD

Chad D. Evans, P.E.
Patent Pending Lock Mechanism

Strategic positioning of the PDC cutters disperses work rates more evenly across all stages of the cutter block.

Gauge trimmers control cutting depth during each rotation.

RipTide’s cutter block patented locking mechanism reduces vibration and increases stability.

The mass balanced, concentric design of the cutter blocks and mandrel piston minimizes vibration.
Fluid Path & Actuation

locked closed position

ball seat
shear pins

fully recessed

ball drop – open position

ball
compressed spring
positively deployed
flo-tell
mandrel piston
Dual-component Body

controller

reamer body
Controller

- **Flexibility:**
  - Ball drop activated shear mechanism
  - Pressure activated shear mechanism
  - Pulsed Telemetry controller
  - RFID controller
Controller

mechanical

RFID
WFT-Marathon RFID Project

tag

controller
Controller

• The RFID R&D is a Weatherford – Marathon JV.

• Application & Benefits:
  – Multiple & selective “open / close” actuation
  – Dual RipTide drilling reamers in the BHA
  – No affect on bit, RSS, or MWD/LWD hydraulics
Features

- Proprietary PDC cutters
- Mass balanced concentric design
- Lock-closed mechanism
- Dual component design
- Cutter block designed to “grip” body at full actuation for improved rigidity
- Full length junk slot for efficient cooling and cuttings removal
- Positively forced retraction of cutter blocks when pulling against the casing shoe
- Back reaming capability
Field Trials

- **1st Field Trial**
  - 10625 Reamer
  - Hole Enlargement 12 ¼
  - 5,000 meters
  - Kiev, Ukraine

- **2nd Field Trial**
  - 8500 Reamer
  - Hole Enlargement 9 7/8
  - 2,500 meters
  - Formation 7,000 to 9,000 psi
  - Poza Rica, Mexico
RipTide™ drilling reamer

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Chad D. Evans, P.E.
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