RipTide® RFID Drilling Reamer 8500

Provides unlimited actuations to enlarge boreholes below casing restrictions and simultaneously drill and enlarge wellbores

Applications

- Drilling and enlarging simultaneously in a single trip
- Underreaming concentric boreholes below casing restrictions to facilitate running casing strings and to permit a larger intermediate casing diameter
- Expanding existing pilot holes in a wide range of formations
- Reducing annular fluid velocities to effectively manage equivalent circulation density (ECD) and minimize the risk of kicks
- Facilitating solid-expandable installations and openhole, gravel-pack, and oversized-liner completions
- Optimizing cement jobs

Features and Benefits

- The RipTide offers two methods of activation—radio-frequency identification (RFID) and pressure cycling—and delivers virtually unlimited activation and deactivation during tripping and drilling.
- The fullbore ID permits wireline retrieval of radioactive sources, which saves rig time and associated costs.
- The RipTide RFID reamer records downhole events such as vibration, pressure, and temperature to provide the operator with a better understanding of downhole conditions.
- Tandem tools can be run in the same bottomhole assembly (BHA) with fully independent control, which improves operational efficiency.
- The reamer can operate with low flow rates, if necessary, to protect sensitive formations.
- Cutter blocks grip the reamer body at full actuation to reduce vibration, which extends cutter life.
- The retractable cutter blocks facilitate reamer retrieval to save substantial rig time and costs.

Tool Description

The Weatherford RipTide RFID drilling reamer 8500 is a concentric mass-balance underreamer capable of enlarging the borehole below casing restrictions. The versatile reamer can simultaneously drill and enlarge when used in conjunction with a rotary-steerable system (RSS), motor, or rotary BHA. The RipTide reamer can also be used to underream existing boreholes and to open selective zones for solid-expandable installations.

The reamer is electronically activated using RFID technology, which provides virtually unlimited activations and deactivations on demand. A small yet durable RFID tag is dropped into the drillpipe ID at surface level and carried downhole in the drilling fluid. The tag transmits instructions to the electronic downhole reader on the reamer controller. Then the controller unlocks, which allows the cutter blocks to fully extend from the reamer body. Alternatively, the reamer controller is equipped with a secondary method of activation via pressure cycling. At any point in the operation either method of activation can be used if required.

The Weatherford RipTide RFID drilling reamer 8500 has retractable and concentric cutter blocks that minimize vibration while drilling and facilitate tool retrieval.

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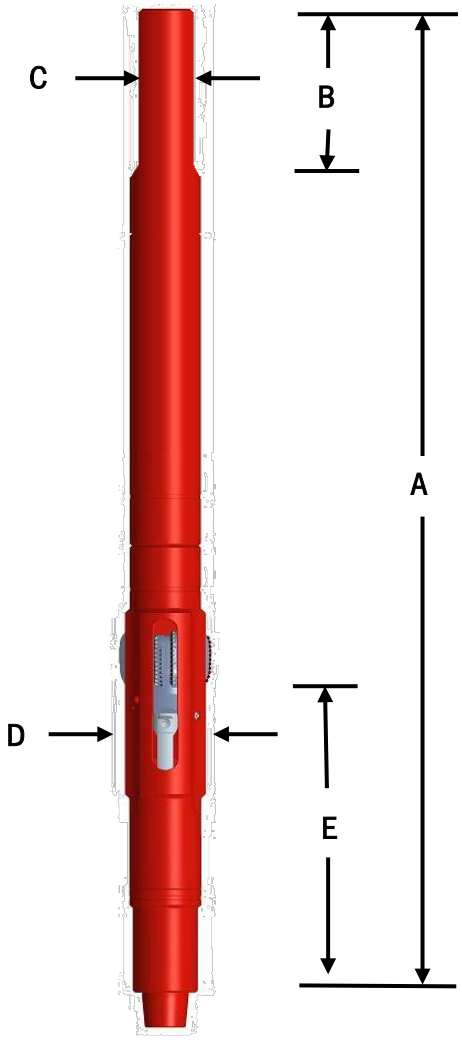
Specifications

Overall length/length with booster sub	A	21.13/24.46 ft
Fishing neck length	B	2.00 ft
Fishing neck OD	C	6.75 in.
Reamer body OD	D	8.25 in.
Distance from bottom sub pin to cutter blocks (open position)	E	4.30 ft



Additional Specifications

Maximum flow rate	830 gal/min
Tensile yield	985,800 lb
Torsional yield	56,900 ft lb
Inside diameter	2.125 in.
Nozzle size in reamer	7 to 20 (1/32) in.
Max. flow rate thru each nozzle at 75 ft/sec	72 gal/min
Max. flow rate thru all nozzles at 75 ft/sec	216 gal/min
Top sub length	3.00 ft
Top sub box up connection	NC50
RFID controller OD	7.625 in.
RFID controller length	11.80 ft
Booster sub length (optional)	3.33 ft
Reamer body length	3.58 ft
Bottom sub OD	6.75 in.
Bottom sub length	2.75 ft
Bottom sub pin down connection	NC50
Reamer assembly weight, less cutter blocks	754 lb
Controller assembly with top sub	1,400 lb

Available Cutter Block Sizes

Series	PDC	Pilot Hole	Opening Diameter
8500	9.5 × 11 mm	8.50 in.	8.75 in.
	9.5 × 11 mm		9.00 in.
	13 × 13 mm		9.00 in.
	9.5 × 11 mm		9.25 in.
	9.5 × 11 mm		9.50 in.
	9.5 × 11 mm		9.88 in.
	13 × 13 mm		9.88 in.
	9.5 × 11 mm		10.25 in.
	13 × 13 mm		10.25 in.

Recommended Drilling Parameters

Maximum rotation	150 rpm
Weight on reamer	20 klb
Torque	28 kft lb
Dogleg severity	12°/100 ft
Lost-circulation material	55 lb/bbl
Maximum temperature	266°F (130°C)

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