

RipTide® Ball-Drop Drilling Reamer 16500

Enlarges boreholes below casing restrictions and simultaneously drills and enlarges 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 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 tool retrieval.
- The balanced, concentric design of the cutter blocks minimizes vibration while drilling.

Tool Description

The Weatherford RipTide ball-drop drilling reamer 16500 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 bottomhole assembly. The RipTide reamer can also be used to underream existing boreholes and to open selective zones for solid-expandable installations.

The reamer is hydraulically activated using the proven Weatherford mechanical ball-drop system. After the ball is seated, pumps are turned on to increase standpipe pressure. Precise flow rates shear locking pins and permit the cutter blocks to extend fully from the reamer body. When pumps are turned off, the cutter blocks retract into the body.



The Weatherford RipTide ball-drop drilling reamer 16500 has retractable and concentric cutter blocks that minimize vibration while drilling and facilitate tool retrieval.



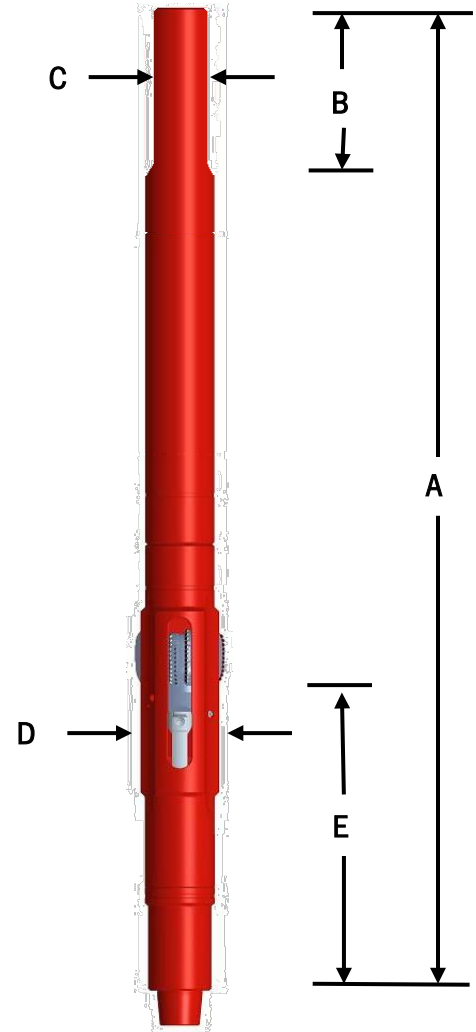
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Specifications

Overall length/length with booster sub	A	15.85/20.45 ft
Fishing neck length	B	2.00 ft
Fishing neck OD	C	8.25/9.50 in.
Reamer body OD	D	16.00 in.
Distance from bottom sub pin to cutter blocks (open position)	E	6.00 ft

Additional Specifications

Maximum flow rate	2,000 gal/min
Tensile yield	1,777,800 lb
Torsional yield	118,100 ft lb
Inside diameter	2.81/3.50 in.
Nozzle size in reamer	7 to 16 (1/32) in.
Max. flow rate thru each nozzle at 75 ft/sec	206 gal/min
Max. flow rate thru all nozzles at 75 ft/sec	618 gal/min
Top sub length	3.00 ft
Top sub box up connection	6-5/8 Reg/7-5/8 Reg
Ball-drop controller OD	10.25 in.
Ball-drop controller length	4.55 ft
Booster sub length (optional)	4.55 ft
Reamer body length	5.50 ft
Bottom sub OD	9.50 in.
Bottom sub length	2.80 ft
Bottom sub pin down connection	7-5/8 Reg
Reamer assembly weight, less cutter blocks	2,775 lb
Controller assembly with top sub	1,660 lb
Activation ball size	2.25 in.



Available Cutter Block Sizes

Series	PDC	Pilot Hole	Opening Diameter
16500	16 × 13 mm	16.25 in.	19.00 in.
			20.00 in.
			21.00 in.
	19 × 13 mm	17.50 in.	22.00 in.
		18.50 in.	24.00 in.
		21.00 in.	26.00 in.
		23.00 in.	28.00 in.
		26.00 in.	32.00 in.
		28.00 in.	35.00 in.

Recommended Drilling Parameters

Maximum rotation	150 rpm
Weight on reamer	35 klb
Torque	60 kft-lb
Dogleg severity	15°/100 ft
Lost-circulation material	75 lb/bbl
Maximum Temperature	300°F (150°C)

