RipTide® Quattro Drilling Reamer 6000

Enlarges boreholes below casing restrictions or 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 RipTide reamer can operate with low flow rates, if necessary, to protect sensitive formations.
- Multiple on-demand activations and deactivations enhance flexibility.
- 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.
- Compatible with all rotary steerable system (RSS) types and field proven for maintaining rate of penetration when run in a hole-enlargement-while-drilling bottomhole assembly (BHA).

Tool Description

The Weatherford RipTide drilling reamer is a concentric mass-balance underreamer with an extensive operational history for enlarging wellbores below casing restrictions. Each versatile reamer can enlarge predrilled holes on a dedicated run, or it can simultaneously drill and enlarge a hole section, thereby optimizing rig time, in conjunction with an RSS or rotary BHA.

The RipTide Quattro drilling reamer 6000 significantly advances traditional ball-drop designs for cost-effective capabilities. Its field-proven, extrudable ball-drop system enables multiple activations and deactivations of the reamer on a single BHA trip. The number of activation cycles varies depending on the length of the ball catcher chosen for the specific application. The standard design enables four cycles, with one activation and one deactivation per cycle, because it has a retention capacity for eight balls.

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

Weatherford®

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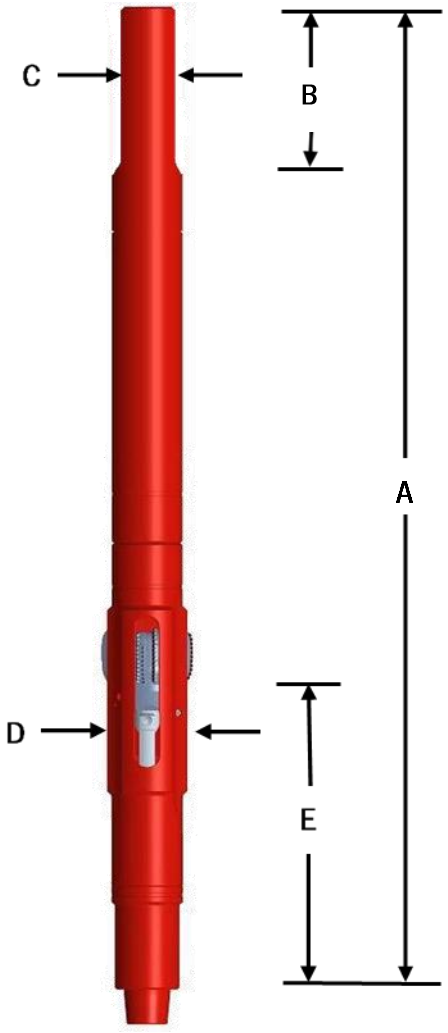
Specifications

Overall length	A	15.42 ft (4.70 m)
Length with booster sub		12.47 ft (3.80 m)
Fishing neck length	B	2.00 ft (0.61 m)
Fishing neck OD	C	5.00 in. (127.0 mm)
Reamer body OD	D	5.875 in. (149.2 mm)
Distance from bottom sub pin to cutter blocks (open position)	E	4.25 ft (1.30 m)

Additional Specifications

Maximum flow rate	413 gal/min (1,563 L/min)
Tensile Yield	583,100 lbf (264,490 kgf)
Torsional yield	23,000 ft-lb (31,184 N·m)
Inside diameter, Ball Seat	1.50 in (38.10 mm)
Nozzle size in reamer, minimum and maximum	4/32 to 13/32 in. (3.175 to 10.3 mm)
Maximum flow rate thru each nozzle	35 gal/min (132.5 L/min)
Maximum flow rate thru all nozzles	105 gal/min (397.5 L/min)
Top Sub length	3.00 ft (0.91 m)
Top Sub box up connection	NC38
RipTide-Quattro Controller OD	5.375 in (136.5 mm)
RipTide-Quattro Controller Length	3.75 ft (1.14 m)
Booster Sub length (Optional)	2.95 ft (0.90 m)
Reamer Body length	3.00 ft (0.91 m)
Bottom Sub length	2.70 ft (0.82 m)
Bottom sub pin down connection	NC38
Reamer assembly weight, less cutter blocks	335 lb (152 kg)
Controller assembly with top sub	400 lb (181 kg)
Extrudable ball diameter	1.625 in (41.28 mm)

[a] The flow rate is 75 ft/sec (22.9 m/sec).
[b] The reamer assembly weight does not include cutter blocks.



Available Cutter Block Sizes

PDC	Pilot Hole	Opening Diameter
9.5 mm	6.00 in.	6.25 in. (158.75 mm)
		7.00 in. (177.80 mm)
		7.25 in. (184.15 mm)
		7.50 in. (190.50 mm)
		7.88 in. (200.15 mm)
		8.00 in. (203.20 mm)
	6.50 in.	8.50 in. (215.90 mm)

Recommended Drilling Parameters

Maximum rotation	150 rpm
Weight on reamer	10,000 lb
Torque	15,000 ft-lb (20,340 N·m)
Dogleg severity	12°/100 ft (30 m)
Lost-circulation material	50 lb/bbl (0.14 g/cm3)
Maximum temperature	300°F (150°C)