

## RipTide® RFID Drilling Reamer 6000

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 casing running 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 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 drilling reamer 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 beneath the reamer, which saves rig time and associated costs.
- The RipTide RFID drilling 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 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 6000 is a concentric mass-balance underreamer that enlarges the borehole below casing restrictions. The versatile reamer can simultaneously drill and enlarge when used in conjunction with a rotary-steerable system, 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 second method of activation via pressure cycling. At any point in the operation either method of activation can be used.



The Weatherford RipTide RFID drilling reamer 6000 has retractable and concentric cutter blocks that minimize vibration while drilling and facilitate tool retrieval.



# RipTide® RFID Drilling Reamer 6000

## Specifications

Overall length	A	17.50 ft (5.33 m)
Length with booster sub		20.45 ft (6.23 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)

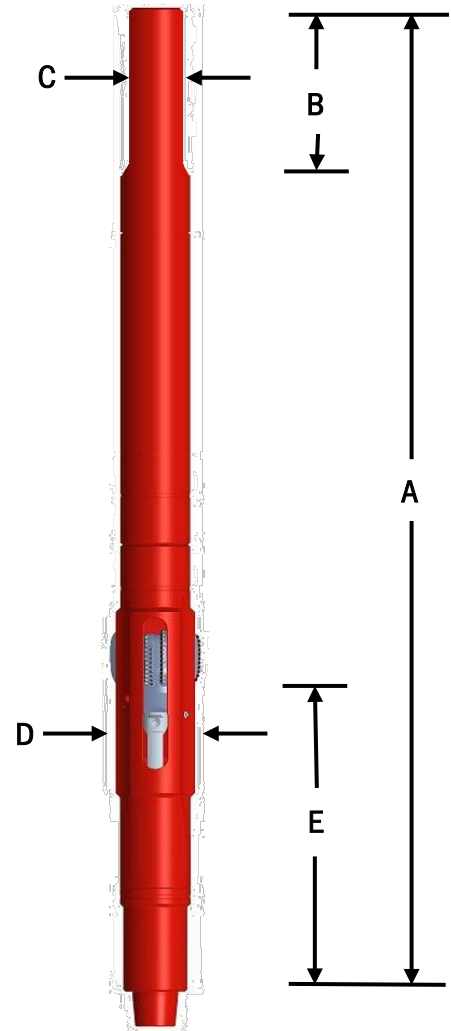
## Additional Specifications

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	1.50 in. (38.1 mm)
Nozzle size in reamer, minimum and maximum	4/32 to 13/32 in. (3.175 to 10.3 mm)
Maximum flow through each nozzle <sup>a</sup>	35 gal/min (132.5 L/min)
Maximum flow through all nozzles <sup>a</sup>	105 gal/min (397.5 L/min)
Top sub length	3.00 ft (0.91 m)
Top sub box up connection	NC38
RFID controller OD	5.25 in. (133.35 mm)
RFID controller length	8.80 ft (2.68 m)
Booster sub length (optional)	2.95 ft (0.90 m)
Reamer body length	3.00 ft (0.91 m)
Equivalent body diameter <sup>b</sup>	5.622 in. (142.79 mm)
Bottom sub OD	5.00 in. (127.0 mm)
Bottom sub length	2.70 ft (0.82 m)
Bottom sub pin down connection	NC38
Reamer assembly weight <sup>c</sup>	335 lb (152 kg)
Controller assembly with top sub	1,000 lb (453 kg)

<sup>a</sup> The flow rate is 75 ft/sec (22.9 m/sec).

<sup>b</sup> The measurement indicates the body OD minus the junk slot.

<sup>c</sup> The reamer assembly weight does not include cutter blocks.



## Available Cutter Block Sizes

PDC	Pilot Hole	Opening Diameter
9 × 11 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 (44,480 N·m)
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/cm <sup>3</sup> )
Maximum temperature	266°F (130°C)

