



Radial Cutting Torch for High-Pressure Applications

The high-pressure radial cutting torch (RCT) is a patented cutting device from MCR Oil Tools used to sever tubing, casing, drillpipe, and coiled tubing where wellbore pressures require a special high-pressure cutter to reach target depth. This technology application is licensed exclusively to Weatherford on a global agreement.

The RCT performs this task without the use of high explosives or dangerous chemicals. Using advanced technology, it burns a proprietary mixture of various powdered metals while the torch nozzle guides the jets of highly energized plasma to the target pipe. The burn reaction is very similar to that of an oxyacetylene cutting torch on the pipe and occurs in approximately 25 ms.

Applications

- The RCT uses jets of highly energized plasma to sever tubing, casing, drillpipe, and coiled tubing in drilling, completion, or production scenarios with wellbore pressures of 10,000 to 15,000 psi (68.9 to 103.4 MPa).

Features, Advantages and Benefits

- The totally enclosed fuel section is safe for rig crews; does not use explosives or dangerous chemicals; requires no special storage, handling or disposal; and does not require radio silence. It is compliant with environmental regulations and much more efficient than units requiring radio blackout.
- The same tool can operate in a range of ambient temperatures to 500°F (260°C), making the RCT ideal for high-temperature wells and more economical than multiple tools.
- The RCT cuts all types of standard and specialized (plastic-coated, INCONEL®, etc.) tubulars in dry or fluid-filled environments, even in exotic fluids, to reduce rig inventory, simplify logistics, and save the cost of multiple tools and/or types of charge.
- The RCT severs pipe in approximately 25 ms, with no flaring or swelling of the target pipe, producing clean cuts that will not snag or damage tubulars, tools, or wireline. This advantage saves remedial intervention and fishing costs.



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Features, Advantages and Benefits (continued)

- Depending on well conditions, the resistor-based firing device needs 1 amp for 10 to 30 sec to activate and does not require radio silence, saving significant time on offshore platforms and drill ships.
- The RCT has the versatility of multiple deployment options, including slickline, electric wireline, drillpipe, tubing, or coiled tubing, to meet application-specific requirements.



The RCT cleanly cuts all types of tubulars, without using explosives, making it one of the safest pipe-cutting devices available.

Specifications

Part Number	Tool OD (in./mm)	Recommended Use	Pressure (psi/MPa)
RCT-0750-900	3/4 19.05	Coiled tubing to 1.50 in., all weights	10,000 to 15,000 68.95 to 103.42
RCT-0875-900	7/8 22.23	1.50- to 1.75-in. coiled tubing, all weights	10,000 to 15,000 68.95 to 103.42
RCT-1125-900	1-1/8 25.58	1.75- to 2.00-in. coiled tubing, all weights	10,000 to 15,000 68.95 to 103.42
RCT-1375-900	1-3/8 34.93	2 3/8-in. tubing, 4.70 to 5.95 lb/ft	10,000 to 15,000 68.95 to 103.42
RCT-1500-900	1-1/2 38.10	2 3/8-in. tubing, 4.70 to 5.95 lb/ft	10,000 to 15,000 68.95 to 103.42
RCT-1688-900	1-7/8 44.45	2 7/8-in. pipe to 8.70 lb/ft	10,000 to 15,000 68.95 to 103.42
RCT-2000-900	2 101.60	3 1/2-in. pipe, 9.30 to 12.95 lb/ft	10,000 to 15,000 68.95 to 103.42
RCT-2500-900	2-1/2 63.50	4-in. pipe, all weights	10,000 to 15,000 68.95 to 103.42
		4 1/2-in. pipe, 15.50 lb/ft	
		5-in. pipe, 18.00 lb/ft	
RCT-4000-900	4 101.60	5 1/2-in. pipe, 23.00 lb/ft	10,000 to 15,000 68.95 to 103.42

Related Products

- RCT for standard applications
- Undersized RCT for special applications