



## *Motorized Cutting Tool (MCT)*

Weatherford's motorized cutting tool (MCT) cuts downhole tubulars without the use of dangerous chemicals or explosives.

For its deployment downhole, the MCT requires only standard monoconductor cable and minimal surface equipment. After the tool is lowered to its cutting depth, the anchors are hydraulically deployed to centralize and lock the MCT into the tubing. The rolling cutting wheel advances through the pipe, displacing material while leaving no debris. Required cutting time depends on the size, weight, and material grade of the pipe and the amount of overpull on the tubing string.

Cutting operations are monitored at the surface, from a notebook computer. The MCT can make multiple cuts per run and cuts in any deviation.

### *Applications*

- Wells in which use of explosives or chemicals is either infeasible or prohibited
- Tubulars under compression
- Dual, triple, or quadruple completions
- Wells in which multiple cuts must be made in a single run

### *Features, Advantages and Benefits*

- Valuable rig time is saved by eliminating the need to make multiple runs to dress the top of the fish or to burn it over.
- The MCT cuts downhole tubulars mechanically, eliminating the need for dangerous chemicals, explosives, or pyrotechnics of any kind and enhancing the safety of wellsite operations.
- Eliminating the need for explosives saves operational time from start to finish by reducing standby or non-productive time:
  - No shutdown (radio silence) of communications
  - Unaffected by inclement weather (sand storms, static electricity, or lightning)
  - No operational shutdowns offshore related to use of explosives
- Multiple cuts can be made in a single run because the pipe does not have to be under tension to cut.





## Motorized Cutting Tool

### Features, Advantages and Benefits (continued)

- Elimination of transport and handling of chemicals and explosives reduces logistical costs and enhances safety.
- Several features and advantages of the MCT reduce initial cost (about one-tenth that of other mechanical cutters) and significantly lower operating costs:
  - Low power consumption
  - All reusable parts (cutting wheels make as many as 10 cuts in contrast to the high cost of one-cut, one-time explosives)
  - No need to redress the tool in the field
- Notebook computer application graphically displays results of the cutting operation, charting tool voltage and current to reveal exact times the cut was started and completed. This feature confirms that the cut has been completed as planned.
- Any conventional third-party collar locator can be used to efficiently depth-correlate the tool.
- The MCT runs with a swivel at the top. In the unlikely event that the tool becomes unstable and the anchors do not grab, the swivel allows the tool to turn so that the wireline does not twist and knot.
- Rolling cutting-wheel technology displaces the tubular metal evenly without flaring or hangnails, leaving a flat edge on top and no debris in the well.
- The MCT can cut 2 3/8-in. pipe while anchoring in 2 7/8-in. pipe, enhancing operational flexibility.

### Specifications

Housing OD	1-11/16 in. (42.9 mm)
Length	140 in. (3,556 mm)
Maximum power <sup>a</sup>	260 W
Toolhead voltage	130 VDC
Average current draw	1.0 A
Maximum current draw	2.0 A
Maximum temperature rating	300°F (149°C)
Pressure rating <sup>b</sup>	10,000 psi (68.9 MPa)
Cuts tubing sizes	2-3/8 and 2-7/8 in.
Maximum cutting wall section	0.25 in. (6.4 mm)
Cutting speed <sup>c</sup>	5 to 7 rpm
Cutting torque	~20 lbf/ft (27 N•m)
Stall torque	~80 lbf/ft (108 N•m)
Time to cut 2 3/8-in., 4.7-lb/ft J-55 tubing	Approx. 15 min

<sup>a</sup>Currently cutting with 130 W

<sup>b</sup>To be increased to 15,000 psi (103.4 MPa)

<sup>c</sup>With 130 VDC at toolhead



Cuts made with the MCT are superior in smoothness to cuts made with chemicals or a radial cutting torch.