eCTD® Motor

Weatherford's *eCTD* motor has all the rugged traits of the proven CTD® motor plus many enhancements to perform in today's hotter and deeper wells with declining bottomhole pressures. This positive displacement motor (PDM) features a stator of uniform thickness to provide more consistent performance and many other advantages over conventional power section technology. The motor that set the standard for reliable performance in coiled-tubing (CT) deployed interventions is now more powerful and durable than ever before.

Applications

- Harsh H_2S and CO_2 environments
- Heavy-duty milling
- Coiled-tubing drilling
- Tubing cutting
- Underreaming
- Plug removal
- High-temperature environments
- Nitrogen (N_2) environments

Features, Advantages and Benefits

- The high-strength, corrosion-resistant, nickel-chromium construction of INCONEL® alloy can withstand temperature extremes, thereby limiting the risk associated in wells with high concentrations of H_2S and CO_2.
- More power minimizes stalling, maximizes rate of penetration (ROP), and extends coiled-tubing life. The *eCTD* motor delivers 50 to 90 percent more power than most conventional motors because underlying steel lobes allow the elastomer to achieve a stronger seal between the rotor and the stator. More power means higher effective ROP, with more time on the bottom drilling and less time lifting out of a stall. Every trip CT makes across the gooseneck has significant cost implications. Less stalling reduces stress on CT to extend fatigue life and reduce intervention costs.
- Uniformly thick injected elastomer is structurally supported by the steel tube for longer motor life. This feature reduces the probability of chunking caused by hysteretic failure; provides greater resistance to the damaging effects of heat, gas, and chemicals; and results in longer mean time between failures (MTBF) than possible with conventional stators, especially in N_2 applications.

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Features, Advantages and Benefits (continued)

- Higher temperature ratings enable reliable performance in today's hotter wells; and less rubber, with a thin, uniform thickness, reduces swelling from temperature changes. Heat is more readily dissipated through the thin rubber layer directly to the steel tube. Weatherford's *eCTD* power sections have been run successfully in wells with temperatures in excess of 420°F (216°C). Current 3-1/2 version is rated for 350°F (177°C).
- Higher weight-on-bit rating enables the motor to safely handle heavy-duty milling and drilling operations.
- Sealed bearings provide unparalleled motor longevity.

Specifications

Performance

OD (in./*mm*)	Maximum Torque Output (ft-lb/*N•m*)	Maximum Bit Pressure Drop (psi/*kPa*)	Minimum Flow Rate (GPM/*LPM*)	Maximum Flow Rate (GPM/*LPM*)	Speed Range (RPM)	Maximum Weight on Bit (lb/*kg*)	Maximum Temperature (°F/°C)	Maximum Overpull (lb/*kg*)
1-11/16 *42.900*	250 *339*	2,000 *13.79*	15 *56.78*	35 *132.49*	190 to 380	7,920 *3,592*	425° *218°*	12,000 *5,443*
2-1/8 *53.975*	438 *593*		25 *94.63*	50 *189.27*	300 to 610	9,240 *4,191*		18,250 *8,278*
2-7/8 *73.025*	1,050 *1,424*		40 *151.42*	120 *454.25*	280 to 450	18,240 *8,274*		34,000 *15,422*
3-1/2 *88.900*	1,750 *2,373*		80 *302.83*	160 *605.67*	215 to 460	38,000 *17,000*	350° *177°*	107,500 *48,000*

Equipment

OD (in./*mm*)	Overall Length (ft/*m*)	Configuration	Stages	Weight (lb/*kg*)	Standard Thread Connections	Makeup Torque (ft-lb/*N•m*)	Bit Size Range (in./*mm*)
1-11/16 *42.900*	7.2 *2.20*	5:6	2.3	63 *28.58*	1-in. AMMT	399 *541*	1-13/16 to 2-3/8 *46.04 to 60.33*
2-1/8 *53.975*	11.0 *3.35*		2.5	83 *37.65*	1 1/2-in. AMMT	672 *911*	2-1/4 to 3-1/2 *57.15 to 88.90*
2-7/8 *73.025*	11.9 *3.63*		3.5	192 *87.09*	2 3/8-in. PAC	2,693 *3,651*	3-1/4 to 4-3/4 *82.55 to 120.65*
3-1/2 *88.900*	11.8 *3.59*	7:8	5.0	250 *113.30*	2 3/8-in. API Reg	2,908 *3,943*	3-7/8 to 7-7/8 *149.00 to 200.00*