TD-500-AC-2M Top Drive
Digitally enabled features and high performance for superior uptime

APPLICATIONS
Drilling operations

BENEFITS
- Increased uptime, efficiency, and safety through total control of the drilling process
- Improved operational certainty and efficiency with best-in-class performance and reliability
- Rig-time savings through simplified maintenance

FEATURES
- High-precision, redundant sensors for optimal system feedback
- Redundant motor configuration
- High-quality components and reliable no-failure gearbox

To help operators meet their drilling objectives no matter the demands or challenges of their application, Cameron offers a range of 500-ton US to 1,500-ton US AC-driven top drive systems with several accessories that can be tailor-made to meet unique requirements.

The TD-500-AC-2M provides the highest level of instrumentation, ensuring total control of the drilling process while increasing uptime and reliability through optimal system feedback and redundancy.

Reliable automation
The TD-500-AC-2M top drive includes the following features:
- Continuous high-accuracy monitoring of weight on bit, motor temperatures, lubrication oil temperature, and pressure and bearing temperature
- Redundant motor and sensor configuration
- Flat gearbox design for optimal use of space using extend-retract dolly and automated pipe handling equipment
- High-precision knuckle-link-type pipe handler and link tilt with stop function
- Remote operation of all functions.

Simplified, safer operation
The top drive’s modular design ensures quick and easy replacement of parts. All maintenance and lubrication points are easily accessible and protected from collision. Washpipe can be replaced within 5 min. The pipe handling systems include a high-capacity knuckle-link tilt system that enables handling the latest-model fail-safe elevator—from drilling to maximum kickout mode.

The customizable TD-500-AC-2M top drive helps operators meet critical drilling objectives in challenging applications.
Innovative software enhancements
Cameron drilling software, which feature user-friendly human machine interfacing (HMI), helps operators increase safety and drilling efficiency.

- OnTrack DM* drilling management system includes autodrilling functions for real-time acquisition and transmission of weight on bit and ROP data.
- OnTrack SoftTorque* top drive anti-stick/slip software eliminates stick/slip, improves wellbore quality, and reduces torque vibrations for longer bit runs and longer tool life.
- OnTrack ZMS* drill floor zone management system is a dynamic anticollision solution for all moving machinery on the drill floor. Avoiding collisions enables increased personnel safety and rig uptime.
- OnTrack Tubular Interlock* tubular equipment monitoring system evaluates the status of interacting equipment and prevents damage to machines when several interact on the same tubular, such as during connections.
- Condition-based monitoring (CBM) brings greater certainty to equipment maintenance. This tiered service solution automates the monitoring and inspection of technology, helping to optimize the analysis and maintenance of drilling equipment.

Torque and rpm performance curve of the top drive represents its high-quality performance in a range of operating parameters.
TD-500-AC-2M Top Drive

**Nomenclature**

![Diagram of TD-500-AC-2M Top Drive](TD-500-AC-2M)

**Specifications**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Value 2</th>
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<tbody>
<tr>
<td>Hoisting capacity,† tonUS (tonUK)</td>
<td>500</td>
<td>454</td>
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<tr>
<td>Maximum continuous torque, ft.lbf (N.m)</td>
<td>51,000</td>
<td>70,000</td>
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<tr>
<td>Maximum speed, rpm</td>
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<tr>
<td>Maximum makeup-brakeout torque, ft.lbf (N.m)</td>
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<td>Backup tong grab size, in (mm)</td>
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<tr>
<td>Minimum OD</td>
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<td>Maximum OD</td>
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<td>219</td>
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<tr>
<td>Power rating, hp (kW)</td>
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<td>Water course pressure rating, psi (MPa)</td>
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<td>Inside BOP (IBOP) pressure rating, psi (MPa)</td>
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<td>Design code and standard</td>
<td>API 8C (PSL 1)</td>
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<td>Area classification</td>
<td>ATEX Zone 1, IIB, T3</td>
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</table>

† In elevator

**Scope of Supply**

- Top drive assembly with gearbox, S-pipe, AC drilling motor with IP44-rated enclosure, blower, drillstem subs, suspension system, weight-compensating system, rotatable pipehandler with knuckle-link tilt system, remote IBOP actuator, and grabber
- Power and signal service loops
- Control system that includes programmable logic controller (PLC), onboard valve control unit, and derrick junction box termination kit
- Handling (transport) cradle including lifting sling
- Auxiliary tools
- Documentation

**Options**

- Retractable or nonretractable dolly specifically designed to fit existing guide rails
- Elevator links for drilling, casing, or both
- AC drive package
- AC motor with IP56-rated enclosure
- Mud hose
- Saver sub for various tool joint sizes
- Traveling block adapter
- Operator’s control panel
- Waterjacket traction motor
- Third-party certifications
- Condition-based monitoring (CBM)