

TD-500-AC-2M

Top drive

APPLICATIONS

Offshore drilling operations

BENEFITS

- Improved operational certainty and efficiency with best-in-class performance and reliability
- Rig-time savings through simplified maintenance
- Enhanced range of applications through modular design and ruggedized drilling capabilities

FEATURES

- Maintenance-friendly solutions
 - Hydraulic valve blocks directly mounted on rotation head
 - Drip pans under all filters
 - Access to all relevant maintenance items if working platform mounted between guiderails
 - Swing-out blower design
 - Docking pin that enables splitting top drive body from main frame in minimum time
 - Lifting provisions on all items
 - Disk brakes mounted inside coupling bell housings
- High-capacity thrust bearing
- Helical-cut gear teeth (carburized and grinded) that increase service life and reduce noise level and maintenance
- Gearbox lubrication for optimal performance of gears and bearings under all environmental conditions
- Self-calibrating thread compensation system that uses analog stroke sensor to optimize performance
- Onboard hydraulic system designed to minimize the number of hoses and fittings installed
- Bell housings between AC motors and gearbox that ensure perfect alignment and protect the flexible coupling between motor output shaft and gearbox pinion shaft

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.



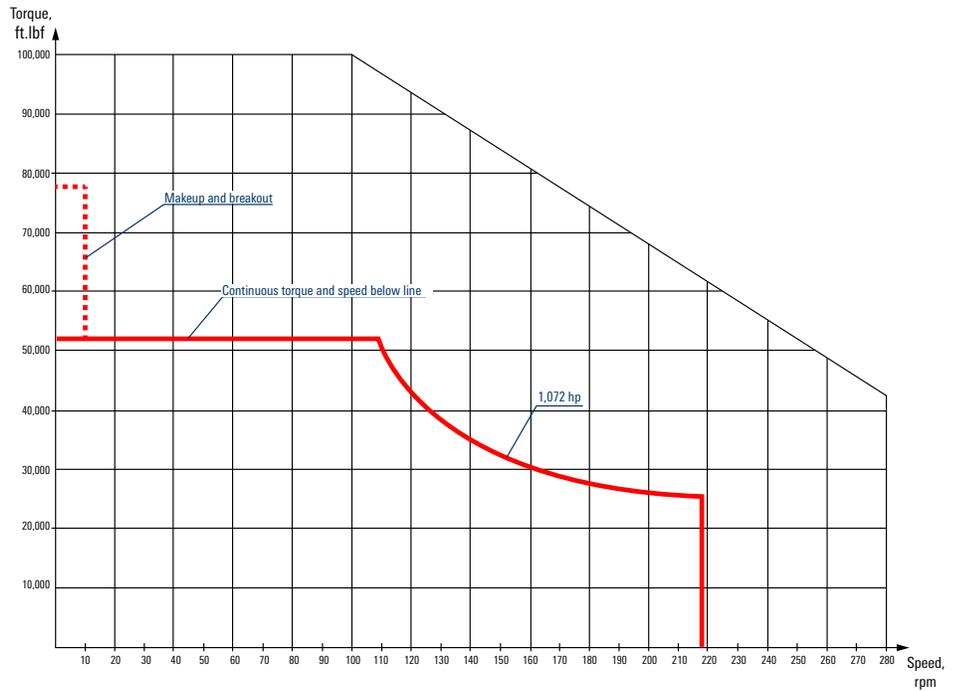
The customizable TD-500-AC-2M top drive helps operators meet critical drilling objectives in challenging applications.

Technical Specifications

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| Hoisting capacity, t [tonUK] | 500 [454] |
| Maximum continuous torque, ft.lbf [N.m] | 51,000 [70,000] |
| Maximum speed, rpm | 220 |
| Maximum makeup-breakout torque, ft.lbf [N.m] | 75,000 [100,000] |
| Backup tong grab size, in [mm] | |
| Minimum OD | 4 [101] |
| Maximum OD | 8% [219] |
| Power rating, hp [kW] | 1,100 [820] |
| Water course pressure rating, psi [MPa] | 7,500 [51.7] |
| Inside BOP (IBOP) pressure rating, psi [MPa] | 15,000 [103.4] |
| Design code and standard | API Specification 8C (Product Specification Level 1) |
| Area classification | ATEX Zone 1, IIB, T3 |

TD-500-AC-2M

- High-capacity stiff link tilt system for handling the latest model of fail-safe elevator—from drilling to maximum kickout mode
- Backup grabber that can handle tool joint OD sizes from 4 in to 10 in without changing die inserts
- Washpipe that can be replaced within minutes
- Rotary head with 18 ports
- Ready integration with hydraulic elevators, pneumatic elevators, or both
- Programmable arbitrary stop positions for the pipehandler rotate function, enabling the driller to set a number of predefined “elevator open” positions
- No need for hammer or tools when replacing washpipe
- Customized programmable logic control (PLC) software for simple, accurate, and natural operator controls from a single point
- Noise reduction
- Dual retention of all fasteners
- Torque wrench design that eliminates risk of accidental breakout of drillstem subs



Torque and rpm performance curve of the top drive represents its high-quality performance in a range of operating parameters.

Scope of Supply

Top drive assembly with gearbox, S-pipe, AC drilling motor with Ingress Protection Standard 44 (IP44) 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)

cameron.slb.com/drilling

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