

MH Orion™ TD-516

Top Drive

Compact Build. Extreme Output. Engineered for demanding environments and modern rig fleets, the MH™ Orion™ TD-516 brings unmatched control, reliability, and innovation straight to the drill floor.

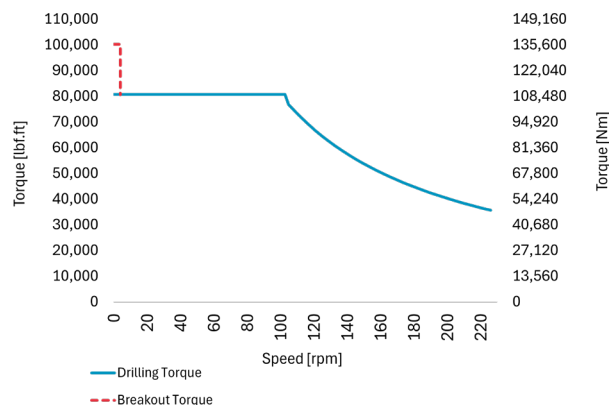
Product Description

The MH Orion™ Top Drive draws on more than 40 years of field-proven expertise and sets a new industry benchmark for reliability and performance in harsh drilling environments.

Its dual AC motor system that delivers outstanding torque and speed within a compact, rugged frame, fitting seamlessly into today's most demanding rigs. Precision engineering, robust gear design, and flexible installation options ensure superior operational efficiency, easy rig moves, and lasting equipment integrity—making it the top choice for modern drilling operators.

Benefits

- Maximizes drilling efficiency with best-in-class torque and speed
- Enhances equipment longevity with rugged design and premium components
- Fits most compact rigs, minimizing retrofitting and downtime
- Enables faster, safer rig moves and transport
- Provides flexible pipe handling for optimal reach and operational safety
- Reduces stick-slip and drilling vibrations with optional Soft Torque Z™ technology



Key Features

- Dual AC motor configuration: 1 200 – 1 600 hp (2 x 600 / 2 x 800) within a compact footprint
- Robust, precisely welded frame and premium gears for durability
- Compatible with most derricks—installs with motors at front or rear for optimal fit
- Dolly or torque tube mounting options
- Fast-disconnect service loops for efficient rig moves and transport
- 360° pipe handler rotation and increased tilt for heavy elevators and full drill floor access
- Onboard hydraulic system and integrated motor brakes
- Integrated gearbox cooling for enhanced operational life
- Seamless integration with rig control systems
- Optional CBM (Condition-Based Maintenance) for proactive asset management



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Technical Specifications

Orion™ TD-516 Top Drive	
Main Data	
Drilling torque max. continuous	80 800 ft-lbs (109 500 Nm)
Drilling speed max.	226 rpm
Drilling speed max. @ max. drilling torque	104 rpm
Lifting capacity (API rating), hosting load *	500 sh.ton
Lifting capacity (API rating), drill stem load *	500 sh.ton
Pressure rating **	7 500 psi
Weight (unit without dolly)	16 000 kg (35 000 lb)
Length	1 560 mm (61 in)
Width	2 060 mm (81 in)
Height	5 550 mm (218 in)
Suspension System	Connection links/Bail
Weight Compensating / Thread Saving System	Hydraulic cylinders
Dolly type	Fixed/non retractable, for guide rails
Operator's Panel Type	Hard wired panel with quick disconnects, combined buttons and touch screen
Swivel & Gearbox	
Mud Pipe, mud connection	Female
Main Shaft id	3 in
Main Shaft connection	NC61 PIN
Wire Line entry	3 in BSP
Lubrication oil cooling	Yes
IBOP Setup	
IBOP/Kelly valves, working pressure	15 000 psi
Saver Sub (API RH Pin-Pin)	On request
Drive Motor(s) w/ Accessories	
Drive motor, Power rating	2 x 800 hp (total 1 600 hp)
Motor qty	2
Drive motor w/ Cooling System, IP rating	44
Drive motor brake	Yes
Service Loop	
Power Loop	Power to main AC drilling motors
Auxiliary Power Loop	Power to auxiliary motors
Instrument Loop	Signals for instrumentation
Derrick connection kit	1 set
Pipe handler w/Back Up Tong (Grabber)	
Max. torque capacity	100 000 ft-lbs (135 600 Nm)
Drillpipe range	3 ½ in – 6 ¾ in
Tooljoint OD range	4 ¼ in - 8 ½ in
Pipehandler lock	Yes
Pipehandler rotation, CW/CCW	360° continuous
Link tilt	Drilling/park position and pick-up position
Hydraulic Power Unit Integrated onboard HPU. i.e. no hydraulic utility requirements	
Max Pressure	250 bar (3 626 psi)
Max Flow	50 L/min (13 gal/min)
Tank Capacity	100 L (26 gal)
Hydraulic oil cooling	Yes
Design Data	
Wind load - operational	36 m/s
Wind load - survival	51 m/s
Design temperature, min.	-40°C (-40°F)
Design temperature, max.	+55°C (131°F)
Design Standards	API Spec 8C
Certification API Monogram	Yes
Hazardous area usage	API 505 "open mast"
Explosion protection standard (electrical)	ATEX 2014/34/EU, IECEx

* Ref. API 8C

** Optionally 10 000 psi with additional high pressure kit

