Exploration Drill Masters Multipurpose Drill Rig

EDM 140 O&G
TRACK MOUNTED

Safety – Efficiency - Trust
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**Diesel Engine**
Cummins QSM11 Tier III
400HP@1800 rpm

**Rotation Head Top Head Drive with floating spindle**
Hollow Floating spindle ID: 40mm – 3 ½” API IF pin thread
Two speed, Low/High manual gear change
5-138 rpm low gear, 150-800 rpm high gear

**Torque and rpm top head drive two speed gear box with 355cc Rexroth motor**
High gear max. displacement of 355cc 2,964 ft-lbf/4,019 Nm
(564rpm)
High gear min. displacement of 180cc 1,188 ft-lbf/1,610 Nm
(1250rpm)
Low gear max. displacement of 355cc 12,360 ft-lbf/16,757 Nm
(135rpm)
High gear min. displacement of 180cc 4,952 ft-lbf/6,713 Nm
(300rpm)

**Drill Mast**
Heavy Duty section mast structure
Capable of angles from vertical to 45°
2000mm mast structure
Standard hydraulic mast cylinder with counter balance valves installed as standard for safety

**Head Traverse**
Driven by one hydraulic cylinder, 2:1 rope system
Max speed up cylinder 365mm/sec, rope system 730mm/sec
Max speed down cylinder 261mm/sec, rope system 522mm/sec
7.6m stroke with rotation head
Side racking rotation head to L/H side

**Pull Down**
30,000 Lbf

**Pull Out**
70,000 Lbf

**Main Hoist**
Mounted on top of mast (Type Braden RW500)
Max pull 55,000 Lbf
Max speed 55mm/minute
Fail-safe brake mechanism (spring applied, hydraulic release)
9 metre pull for diamond pipe and casing
Load sensing winch motor for optimum operating speed

**Drawworks System (140,000lb pull force)**
Powered by Braden PD21A winch, 23,000lb line pull

Failsafe brake mechanism (spring applied, hydraulic release)
70T McKissick 3 sheave travelling block mounted an EDM swivel to the drillstring
Maximum pull 140,000lb
Rods can be rotated while being pulled
6.6 metre pull for range 1 pipe and casing
Able to be disconnected and lifted clear to enable use of main winch when diamond drilling

**Jib Boom**
Actuated by hydraulic hourglass worm for left/right
Independent winch with lifting capacity of 1000kg

**Primary Water Pump**
FMC (Bean) L1118-SC
65gpm@2,000psi
Powered from rig hydraulic system

**Secondary Water Pump**
FMC (Bean) W1122BCD
37gpm@1,000psi
Powered from rig hydraulic system

**Standpipe**
3000psi, 3” Standpipe up RHS of mast for use with aux mud pumps
Hammer unions top and bottom
Ultrasonic flowmeter for accurate flow measurements

**Rod Break Out**
60° Adjustable Stillson wrench hydraulic cylinder mounted for hydraulic break out, hydraulically operated, hydraulically adjustable from control panel
Metzke hydraulic spanner
4” Hydraulic cylinder 25,000lb (push or pull) for use with casing tongs etc (Torque adjustable from console)
Full set of Diaspan wrap spanner to suit B+ to P+ size drill pipe

**Airdrill Rod Break Out**
Adjustable makeup torque control
4”-8-5/8” rotating breaker
Max breakout torque 60,000 ft-lbf
Max makeup torque 45,000 ft-lbf
Makes rods to the correct torque and break rods

**Jack Leg**
Heavy Duty cylinder with pilot check valves
Extra large pads for better ground stability

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Rod Clamp and Slip Table
Hydraulic operated, self energising rod clamp
Easy to remove jaws
Common jaws from 44.5mm to 177.8mm (B+, N+, H+ and P+, PW)
20” table opening with 12", 9" & 7" slip inserts

Wire Line Winch Mounted on mast pivot plate
Capacity 8mm rope: 3000m
Max average pull from full to empty drum 3,680Lbf
Max average speed from full to empty drum 7m/sec
Automatic rope tracking device
Depth indicator read from control panel

Foremost 1500 Rod handler
Fully remote controlled run from rig
Able to handler pipe from 2 7/8 – 8 5/8
Able to handler pipe to 1500lbf
12,000 ft-lbf breakout torque capacity

Control Panel
Easy self explanatory layout
Easy access for basic maintenance and repairs
Fully sealed control panel with all electrical instrumentation
Digital Readout showing:
  - Hook load*
  - Rotation torque*
  - Bit weight*
  - Water pump flows and pressure
  - Rate of penetration
  - Rotation speed
*Requires Pason torque and tension Sub

Mud Mixing Circuit
2x30 LPM pump independent from all other function, with flow control, and quick release connectors

Hydraulics
Parker pump, Rexroth winch & rotation motors, Parker CVG main valve, Danfoss PVG32 auxiliary valves, Sun cartridge

Rod Spin Guard
Cage off the rotating rods from operator
Hydraulically interlocked with rotation
Reduces rotation speed to 150 rpm when cage is opened

Dimensions
Platform Width 3,000mm
Jack leg centres 5,500mm
Mast Length 14,500mm
Overall Height 4,600mm
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Safety Features
• Guards on all rotating equipment
• Anti slip grid mesh on all work platforms
• Hand rails on all work platforms
• Emergency stops in control cabinet and on both sides of machine
• Heat guards on all exhaust manifolds and piping
• Murphy shut down system which protects the following
  • Low engine oil pressure
  • High engine temperature
  • Low hydraulic tank oil level, coolant level
  • 24 volt, 100amp alternator to enable high quality additional work lights
• Two certified 10kg fire extinguishers

Standard Features
• Easy accessible control panel for general maintenance
• Clear easy to read and self explanatory controls
• Warning horn to alert drill crew
• Central grease point for wireline and top sheave wheels
• Easy accessible oil drain station for engine, hydraulic tank, FMC pump
• Fully sealed electrical panel
• Hydraulic test points on all pumps, motors, and spool banks
• Additional work light plug outlet station
• Lockable diesel tank fill points
Additions for RC Drilling Capacity
• Hammer oiler
• Hydraulic operated air on/off and vent valves
• 1500psi rated 2” air hose with certified hoses socks on all high pressure air lines
• Battery isolation switch
• Fuel tank gauge
• Clearly labelled oil type and grades on all oil fill points
• Level bubbles mounted on platform and mast
• Tool box
• Two additional available spool banks, one with detent, one spring centre for additional mud mixing systems, casing jacks, etc
• All jaw sets from B+, N+, H+, P+.
• Stillson wrench for hydraulic break out, 48” inch
• 10m of 2 inch suction hose with foot valve and cam lock connectors
• First 250 and 500 hr service kit
• Flashing light, and standard mine site lighting
• Mast ladder
• Rig platform access ladders and steps
• Large fully adjustable offsiders platform
• EDM products are designed with standard imperial materials. All threads are either UNC or UNF. All hydraulic valves bodies, pumps, motors use common SAE O-ring boss adaptors

Warranty
1 Year / 5000 hrs

Optional Features
• Reverse circulation kit
• Additional sealed lockable Tool Box
• Additional work lights
• Hydraulic boost kit for high altitudes (Prevents hydraulic pump cavitation)
• Fully silenced, and enclosed deck for quite and cleaner machine
• 6 inch tradesmen vice
• 1500 hr service kit
• Remote spare parts kit
• Clients colour choice
• Fire suppression unit
• Rod spinner