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DYNAMIC MOMENTUM

The Dynamic Momentum is a LeTourneau Super 116E cantilever jack up rig, being built by COSCO Dalian, China and scheduled to be delivered in early Q3 2017. The rig is capable of operating in water depths up to 350 feet and drilling to depths of 30,000 feet. The drilling unit has a 70 feet x 30 ft (stbd/port) cantilever envelope and 1,500,000 lbs hook load capacity and is also equipped with a 15,000 psi main well control system, 3 x 2200HP Mud pumps and offers accommodations for up to 120 people. Rig management system will be certified to ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 standards.

GENERAL INFORMATION

Design : LeTourneau Super 116E  
Builder : COSCO Dalian  
Year Built : New build (delivery – end-Q2 2017)  
Flag : TBA(Singapore)  
Classification : ABS  
Helideck : S61N & S92 - 72.8 ft diameter  
Accommodation : 120 beds

MAIN DIMENSIONS

Length : 243 ft  
Breadth : 206 ft  
Depth : 26 ft  
Leg Length : 477 ft  
Leg Below Hull : 423 ft  
Leg Spacing : Transverse 142 ft / Longitudinal 129 ft  
Cantilever/Envelope : 70 ft x 30 ft (15 ft Stbd/Port)  
Spud Cans : 46ft and can be enhanced to 50.5 ft to avoid deep penetration in soft soil  
Deck Area : 8,000 sq.ft. (including cantilever)

STORAGE CAPACITIES / WATER TREATMENT

Variable Deck Load : 7,755 kips  
Cantilever & Drilling : 2,650 kips  
Combined Load :  
Liquid Mud : 4,928 bbls  
Barite/Bentonite : 5,150 cu. ft.  
Cement : 5,150 cu. ft.  
Sacks : 5,000 sacks  
Drill water : 13,800 bbls  
Potable Water : 1,625 bbls  
Brine Storage : 850 bbls  
Base Oil Capacity : 1,500 bbls  
Fuel Oil : 2,150 bbls

MACHINERY / POWER

Main Power : 5 x Caterpillar 3516CHD, 2150 bhp each  
Total Power : 5 x 2150 KVA (1720 Kw) = 10,750 KVA / 8,600 Kw  
Emergency Power : 1 x Caterpillar 3512B, 1,478 bhp & alternator 1,400 KVA / 1,120 Kw

HOISTING EQUIPMENT

Deck Crane : 2 x LET PCM-120SS 120 ft Boom, Rated 84,110 lbs @ 25 ft (38.2 tonnes @ 7.62m) & 1 x LET PCM-220SS 140 ft Boom API-2C, Rated 150,000 lbs @ 32 ft (68.0 tonnes @ 10.7m)  
Offline Activities: Offline stand building with Forum OAC crane and offline cementing

OPERATING PARAMETERS

Water Depth : 350 ft  
Min Water Depth : 30 ft (Spud cans (46 feet) flush with hull and can work in lower water depths with specific location/area bathymetry and metocean condition assessment)  
Max. Drilling Depth : 30,000 ft

DRAFT AND DISPLACEMENT

Transit Draft : 17 ft

JACKING SYSTEM

Make/ Speed : LeTourneau/1.5 ft/min.  
Normal Holding capacity : 600 kips/pinion  
Normal Elevating : 375 kips/pinion  
Storm holding : 1,048 kips/pinion

MOORING

Winches : 4 No. DC 222, 50,000 lbs  
Anchors : 4 No. HYD-14,10,000 lbs

DRILLING EQUIPMENT

Derrick : Load Master 170 ft x 32 ft x 35 ft  
Hook load : 1,500,000 lbs  
Drawworks : Cameron LDW-1500 Klbs  
Racking : 312 stands of 5-7/8" DP, 16 stands of 9" DC can be kept on both set back areas  
Top Drive : Cameron LTI L-DDTD 750 V2 (72.000 lbs continuous / 100,000 lbs intermittent)  
Iron Roughneck : Cameron JIM 10 T-P-L  
Rotary Table : Cameron LTI L495, 49½"  
Traveling Block : Cameron Lewco TB 750; 68", 1¾" Grooves  
Mud Pumps : 3 x Cameron W-2215, 2200HP each  
Shale Shaker : 4 x Brandt VSM 300  
Pressure Rating : 7,500 psi

WELL CONTROL SYSTEMS

BOP Main Stack : Cameron,1 x BOP stack 13-7/8" x 15,000 psi  
Annular : 1x20-7/8" x 3,000 psi & 1x13-7/8" x 10,000 psi  
BOP Handling : JDN Hoist 2 Nos each having capacity 75 tons  
BOP Control : System Accumulator  
Unit : Cameron 3,000 psi, 32 Nos, 15 gal. bottles  
Diverter : Cameron KFDJ 49½", 500 psi  
TV System : 2 CCTV system, 10 Cameras, 2 x Control cabinet ex-proof type  
Choke and Kill : Cameron 3-1/16" x 15,000 psi with 1 remote and 1 Local control

INFORMATION

System will be certified to ABS DNV GL, BV, LR, DGL, LR, Singapore 068811.

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## Value added features

<table>
<thead>
<tr>
<th>Equipment Reliability</th>
<th>All major equipment/Safety Critical equipment and systems are from proven Western equipment/service providers like Cameron/NOV/Forum</th>
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| Equipment selection/ FAT/ SIT/ Testing and Commissioning | The rig has undergone/is undergoing one of the most rigorous testing and commissioning processes with major equipment layout/selection decided by In-house domain specialists and SMEs from Lloyd’s Register- Drilling (earlier ModuSpec) – with new generation process safety guidelines.  

The unit’s cranes are built/surveyed and will be assigned with the ABS class notation “CRC” in accordance with the Rules of American Bureau of Shipping (ABS), Guide for Lifting Appliances. |
| Well Control system            | FAT attended by Owner SME including actual shear test conducted at Cameron facility in Béziers, France. 3 layered BOP acceptance criteria with FAT followed by SIT at shipyard and final testing and commissioning on board.  

Compatible equipment/systems and processes for HPHT application and could be made UBD/MPD compliant with Safety case/ Hazid and Hazop studies with Operator and other stakeholders as and when required |
| Software integrity and Cyber security | The entire rig software system will undergo audit and mitigations will be in place according to Industry standard Cyber security guidelines  

It is proposed to have Cameron VTB (Virtual Tech Box) which is a computer system capable of performing all of the following on a rig without the need on an on-site service technician:  
• Installing rig requested system modification and upgrades  
• Monitoring equipment to ensure proper operation. 24X7X365  
• Troubleshooting and performing cause / effect analysis of malfunctioning equipment  
• Updating PLC and HMI software through patches |
| Data integration and analytics capability | Rig has Cameron / Forum Integrated Drilling Control System Instrumentation and data acquisition system and has systems/outlets designed which could be hooked up to any Operator provided SCADA system for data acquisition/ transmission/analysis in a secure system |
| Offline capabilities           | Offline drill pipe/ BHA stand building capabilities/ Offline Cementing capabilities with certified piping and hoses/Other Offline requirement to be discussed and safe systems put in place with discussions with Operator |