

HAKURYU-12



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HAKURYU-12 is a 400 ft operating water depth self-elevating cantilever jack-up drilling rig, built by PPL Shipyard Pte. Ltd. using the Baker Marine Design.

HAKURYU-12 is a high standard unit sized for large Variable Deck Load (VDL), useful deck space, 150 Person On Board (POB), full

DESIGN:

PPL Pacific Class 400: 3 legs self-elevating, cantilever type mobile offshore drilling unit.

CLASSIFICATIONS HELD:

Classified by American Bureau of Shipping (ABS 2012), inclusive Rule Change Notice No. 2 (RCN 2) and Maltese Cross A1, Self-Elevating Drilling Unit, IMO Code of Construction and Equipment of Mobile Offshore Drilling Unit (MODU Code 2009).

FLAG:

Panama.

MAIN DIMENSIONS and PARTICULARS:

Hull Overall Length (molded)	236.5' (72.1m)
Hull Breadth (molded)	224.4' (68.4m)
Hull Depth (molded)	27.9' (8.5m)
Leg Length	532.5' (162.3m)
Usable Leg Length (below hull)	461.3' (140.6m)
Footing Area /each Spud Can	2,493 sq.ft. (231.6 m ²)
Max Combined Drilling Load on Cantilever	1,179 tons @60' center 871 tons @75' center
Drilling Envelope	15'-75' x 30'
Displacement (Load Line)	43,847 kips (19,885 tons)
Helideck / D-value / t-value ... Sikorsky S-61N & S92 / 22.2 m dia / 12.6 tons	
Accommodation	150 personnel

DESIGN CRITERIA:

Max. Operating water depth 400' with 50' air gap & 10' penetration
Max. Rated drilling depth 9,144m with up to 5-1/2" drill pipe

MAXIMUM GROSS VARIABLE LOAD:

Jacking.....	4,890 kips (2,218 tons)
Storm.....	6,389 kips (2,898 tons)
Drilling.....	7,388 kips (3,351 tons)
Hook Load.....	1,500 kips (680 tons)
Rotary Load.....	1,500 kips (680 tons)
Setback Load.....	900 kips (408 tons)
Conductor Tension Load.....	500 kips (227 tons)

STORAGE CAPACITIES:

Fuel oil	3,740 bbls (596m ³)
Drill water	21,760 bbls (3,460m ³)
Potable water	3,520 bbls (560m ³)
Liquid mud	4,150 bbls (660m ³)
Base Oil	1,255 bbls (200m ³)
Brine	1,255 bbls (200m ³)
Bulk mud	5,827 ft ³ (165 m ³)
Bulk cement	5,827 ft ³ (165 m ³)
Sack storage	5,000 sacks

POWER EQUIPMENT:

Main Engines:	Five (5) Caterpillar 3516CHD engines, 1,603 BKW @1,200 rpm
Main Generators:	Five (5) Kato 6P6-3300 generators, 2,150 kVA @1,200 rpm, AC 690 V, 60 Hz
Emergency Engine:	Caterpillar 3508B engine, 1,298 hp @1,800 rpm
Emergency Generator:	Leroy Somer LSA-49.1 generator, 1,020 KVA @1,800 rpm, 480 V, 60 Hz.

VESSEL MANAGEMENT SYSTEM:

Centralized access and control system covering Alarm monitoring system, Tank level monitoring and remote valve control for pre loading operation.

preload jacking capability, deep water drilling operation (400 ft water depth), deep drilling (30,000 ft drilling depth), High Pressure High Temperature (HPHT) drilling and zero discharge operation.

The cantilever design allows the rotary table to be skidded out to a maximum of 75 ft from the transom and 15 ft from the centre line.

DRILLING EQUIPMENT:

Draw Works: NOV ADS-10T, 3,000hp (Three 1150 HP, 690 V AC motors) 1-5/8" diameter wire.

Derrick: NOV, 35 x 35 base, Max. hook load: 1,500 kips. Racking capacity: 330 of 5-1/2" drill pipe + 4 stands of 9-1/2" Drill collar + 8 stands of 8-1/4" Drill Collar + 8 stands of 7" Drill collar.

Vertical Pipe Handling System:

Crown Block: NOV CBC-750, 1,500kips capacity, with 9 sheaves.
(1 x 60"OD Turn-over Sheaves at Dead Line Side)
(6 x 60"OD Cluster Sheaves at Center Block)
(2 x 60"OD Turn-over Sheaves at Fast Line Side)

Traveling Block: NOV 760TB-750, 1,500 kips, with 7 x 60" sheaves.

Top Drive: NOV TDS-8SA, 7,500 psi WP, 1,500 kips, 1,150 hp, 690 V AC motor. Installed with a retractable dolly.

Rotary Table: NOV D-495-75, hydraulic motor driven.

Iron Roughneck: NOV ST-120, Size range 3-1/2" to 10"

Control System: NOV Cyberbase™.

WELL CONTROL EQUIPMENT:

Divertor: Vetco Gray, KFDJ-500 Fixed Type, 49-1/2".

BOPs: 18-3/4" BOP Stack
Cameron 18-3/4" 10,000 psi WP Annular.
Two (2) Cameron TL 18-3/4" 15,000 psi WP Double Ram.
Dual 3" 15,000 psi choke & kill lines.

BOP Control: CAD BOP Control Unit.

Choke Manifold: Forum Oilfield 15,000 psi WP choke & kill manifold, sour gas service.

One (1) MASTER FLO manual operated choke.
Two (2) MASTER FLO Remote operated chokes.

MUD CIRCULATION EQUIPMENT:

Mud Pumps: Three (3) NOV 14-P-220, 7,500 psi WP, Two (2) 1,150 hp AC motors driven.

Mud Treatment System:

Gumbo Separator: One (1) Dual gumbo separator

Primary Shakers: Four (4) Brandt VSM300 shale shakers.

Mud Cleaner: NOV-Brandt desander cone (3 x 10") and desilter cone assembly (4" x 24 cones).

Degasser: Brandt DG-10 degasser.

Mud Gas Separator: FORUM atmospheric mud gas separator suitable for H2S service, Ventline:10"

JACKING EQUIPMENT:

Jacking Units: 36 NOV-BLM D88 jacking units with 72 active pinions.

Normal Jacking 43,632 kips (19,800 tons)

Preload Jacking 58,752 kips (26,640 tons)

Drilling Condition 81,288 kips (36,864 tons)

Storm Condition 108,288 kips (49,104 tons)

OTHER EQUIPMENT:

Deck Cranes: Three (3) Favco Diesel-Hydraulic deck cranes.

Favco 7.5 / 10K: 50MT @12m, 10MT @36.6m

Water Makers: Two (2) Sasakura VVC-60L-EL water makers, 15,850 gal/day (60 Kl/day) each.

Anti-pollution Equipment:

Hamworthy ST13-CVS, capable for 150 personnel.

TURBULO TMPB-10 oily water separator, 10ton/hrs.

Anchors: Four (4) 6 tons Flipper Delta type anchors.

Anchor Winches: Four (4) x Mentrade anchor winches.

Maximum pull 70 kips (31.75 tons).

Maximum holding 140 kips (63.5 tons) at 1st layer.



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