

AL-RAYYAN Specifications



The Al-Rayyan (Ex GULF-2 and Ex. ENSCO-55) was designed by Ingalls Shipbuilding Division of Litton Industries, Pascagoula, Mississippi, USA in 1982

The rugged design permits operations in water depths of up to 300 feet and drilling depth of 20,000 feet with a draft of 30 ft. The cantilever provides a drilling envelope extending from 10 ft to 40 ft aft of the stern and 12 ft either side of the rig's centerline.

The spud cans can be fully retracted into the hull allowing easy loading onto dry transport vessels for safer, quicker mobilization. The rig was the 2nd jackup to join GDI's fleet in May 2005.

DESIGN:

Friede and Goldman L-780 Mod 2 self-elevating cantilever jackup drilling rig with three triangular trussed independent legs.

MAIN DIMENSIONS:

Length (molded)	180' (54.8 m)
Breadth (molded)	175' (53.3 m)
Hull Depth	25' (7.62 m)
Leg Length	400'9" (122.2 m)
Usable Leg Length (below hull).....	346' (105.5 m)
Spud Can Area	1,169 ft ² (108.5 m ²)
Drilling Envelope	40' aft and 12' from centreline
Gross tonnage	5,083 tons
Helideck size/rating.....	62' /for Bell 412 / 11600 lbs

DESIGN CRITERIA:

Max. operating water depth.....	300' with 30' air gap & 25' penetration
Max. rated drilling depth	20,000'(16,000' limited due to racking capacity)

STORAGE CAPACITIES:

Fuel oil	2,410 bbls (383.1m ³)
Drill water	5,201 bbls (826.8m ³)
Potable water	1,348 bbls (214.3m ³)
Liquid mud	1,853 bbls (294.5m ³)
Bulk mud	4,650 ft ³ (131.7m ³)
Bulk cement	4,650 ft ³ (131.7m ³)
Sack storage	4,000 sacks

MAXIMUM GROSS VARIABLE LOAD:

While Drilling (including 450 tonnes setback and hook load)	2,655 tonnes (5,854 kips)
Jacking or Towing	2,188 tonnes (4,824 kips) in transit

CLASSIFICATIONS HELD:

American Bureau of Shipping; AI Self-elevating Drilling Unit.

ACCOMMODATION:

Three floors of air conditioned cabins for 96 personnel.

POWER EQUIPMENT:

Main Engines:	Three GM-EMD, 12-645 E8, 1500 HP & One GM-EMD, 12-645 E9, 2,230 HP
Main Generators:	Three GE-EMD, GE-EMD / ABO-6 AC Synchronus, 1,445 KW & One GE-MD /12-645-E9 with turbocharger, 1,794 KW
Emergency Use:	One CAT / 3412 engine, 465 hp @ 1200 RPM 320KW / 1800 RPM / 480 V and one CAT MOD SR 4 generator

MOORING SYSTEM:

Anchors:	N/A
Anchor Wire:	N/A
Anchor Windlasses:	N/A

DRILLING EQUIPMENT:

Drawworks:	Continental Emsco, C- 2 Type 2 with BAILOR7838 Auxiliary Brake, powered by two of TOSHIBA DR 900 motors
Derrick:	Continental-Emsco / 2R 160ft high with 30 ft x 30ft base, 1,400,000 lbs gross nominal capacity
Crown Block:	Continental Emsco, RA-60-7-500CB, 500 tons, 7 x 60" sheaves for 1-1/2" drilling line
Traveling Block:	National type 650H500 block with unitized hook, 500 short tons, 6 x 50" sheaves for 1-1/2" drilling line.
Top Drive:	National PS2 500/500, 2 speed, driven by 1 GE 752 DC motor 1100 HP, max RPM 145 (LO), 296 (HI) with Hydralift / Electric Over HYD pipe handler, 500 ton capacity.
Swivel:	In TDS
Rotary Table:	National, C-375 driven by one TOSHIBA 1130 HP DR 900 motor

BOP & DIVERTER EQUIPMENT:

BOPs & Diverter:	One 21-1/4" x 2,000 psi Shaffer annular. One 13-5/8" x 5,000 psi Shaffer spherical annular. One 13-5/8" x 10,000 psi CIW U single ram. One 13-5/8" x 10,000 psi CIW U double ram.
BOP Control System:	Model T-30270-3S Koomey accumulator unit with MGB2K6EH master control panel.
BOP Crane:	JD Neuhaus 50 tonnes overhead crane with two 25 tonnes hooks.

MUD CIRCULATION SYSTEM:

Mud Pumps:	Two Continental-Emsco, FB-1600 / Triplex, each driven by two Toshiba DR900 DC electric motors, 900 HP per motor,
Shale Shakers:	Three Derrick, FLC 513 Flo line cleaner
Mud Cleaner:	One Brant ATL16/2 mud conditioner: 2 x 12" Desander + 16 x 4" Desilter cones mounted over an ALT-1200 linear motion screen deck (shaker)
Centrifuge:	One SWACO 518, Variable bowl speed (1800/2400/3200 rpm), Max 250 GPM, fitted with Type II pumping unit.
Degassers:	One Derrick Vacu-flow degasser Model-1000

OTHER EQUIPMENT:

Cementing Unit:	Lease item.
Cranes:	Tow LINK-BELT Pedastal Mounted, Diesel hydraulic type, 39.1 ton at 7.6 m, 4.7 ton at 30.4 m
Water Maker:	Two ALFA ALVAL / CI-20, 10,000 GPD / 20,000 GPD
Anti-pollution Equipment:	One OMNIPURE 12 MC sewage treatment unit One Gravity Settling Tank oil and water separator, maximum capacity 18.3 GPM. AROX Model 275 at 5 inch/hp garbage disposer.