

EXMAR 2500 DEEPWATER SEMI-SUBMERSIBLE

THE STARTING POINT

The Exmar 2500 represents a unique new advancement in deepwater drilling. This new semi-submersible is the first truly new design for ultra deepwater offshore exploration in the 21st century. The Exmar 2500 design series was created from a blank sheet of paper and the vast experience of Exmar Offshore Company's Principal Engineers and Designers, each with over 25 years of hands-on experience in all aspects of the design, construction, modification, and operation of offshore drilling vessels.

The design approach was to challenge the status quo and apply innovative solutions to create a semi-submersible drilling rig that offered cost effective deepwater exploration drilling, field development, well completion, and intervention by improving safety, performance, and efficiency.

The resulting design breaks new ground with a ring-pontoon configuration, advanced pipe handling systems, and the unique application of proven technologies in all aspects of rig construction. The Exmar 2500 is an innovative design that will perform its mission in ultra deepwaters efficiently and safely. It can also be built and operated for less than any other semi-submersible rig design with similar capability. It is truly the deepwater semi-submersible rig for the 21st century.

DESIGN PREMISE

- Design based on vessel mission: safe and efficient deepwater drilling operations.
- Parallel operations drilling system to eliminate drilling curve flat spots.
- Deck layout for efficient well completions and subsea operations.
- Balance design issues for improved operations with mission in mind.
- Minimum construction cost.
- Reliable construction schedule and budget.

DESIGN CONCEPTS

Reliable Construction Schedule and Budget

- Design is evolutionary, not revolutionary
- Refined and efficient arrangement of drilling equipment and rig components.
- Avoids developing & testing new pipe handling systems, derrick, draw works etc. during construction period.
- Shipyard friendly design. Mostly flat panels and easy deck mating.
- No long lead items in the pontoon.
- Engineering complete before shipyard construction contract.

Low Maintenance

- Few tubular joint connections — easily inspected.
- Smooth under deck — low surface area to paint.
- Piping and cabling not exposed under deck.
- Pontoon pipe tunnel for easy internal inspection and access to tanks.
- Liquid storage tanks with external stiffening and smooth internal walls.
- No corrosive liquid storage in pontoon.

Alternative Configurations

Similar space arrangement — conventionally moored and DP units.
 Minor change to columns height and waterline cross section for severe environment configuration.

Minimization of Environmental Forces

Faired ring pontoon allows for lower current forces than equivalent displacement twin pontoons.

Ring pontoon hull shape achieves deep draft motions with shallow draft hull configuration.

Central derrick reduces wind moment force, which is “wasted” thrust in DP applications.

“Transparent” derrick. No pipe setback due to horizontal pipe racking capability

Transparent Derrick - Setback Minimization

Riser shielded in “hold”- little wind force difference with or without riser on board.

No need to lay drill pipe down for storm or hurricane — already down in horizontal pipe-racker.

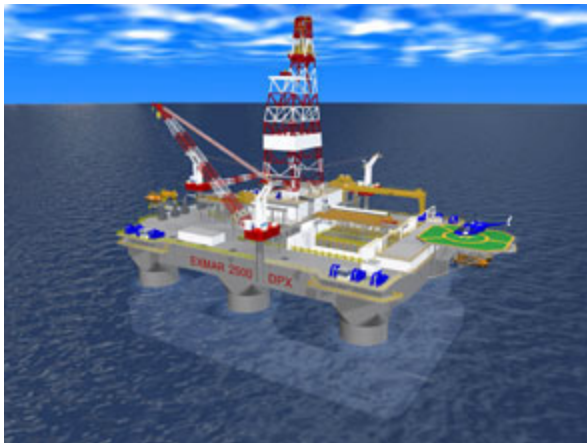
Reduced station keeping forces and moments.

Reduced wind static list/trim and wind induced motions.

Reduced derrick and substructure weight and cost.

Station Keeping

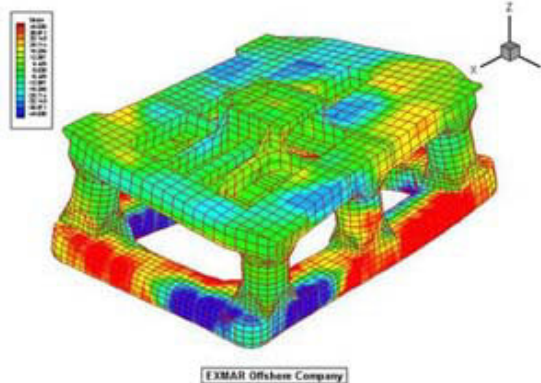
Favorable omnidirectional environmental loading characteristics.



The Exmar 2500 Bird-Eye View



The Exmar 2500 Fish-Eye View



MAIN DETAILS

Design	Exmar 2500 CM [DP] {UR}
Classification	ABS @ A1 CSDU [DPS3]
Compliance	IMO MODU

MAIN DIMENSIONS

Length	106.5 m, main hull excluding helideck
Breadth	76.0 m, main hull excluding anchor racks
Depth	39.0 m base line to upper hull main deck {44.0}
	31.0 m base line to flush bottom {36.0}
Columns	8 m deep upper hull, 1.5m deep inner bottom, mezzanine in many areas
	6 x 22 m height
Pontoon Level	14 m square
Operating Draft	14.0 m diameter circular {14m square w/4.2 m radius corners}
Longitudinal Spacing	41 m (82 m overall)
Transverse Spacing	62 m
Pontoons	110 m long x 14 m wide x 9 m depth (Fore/Aft) {110m x 14m x 9.3 m}
	48 m long x 14 m wide x 9 m depth (Port/Stbd) {48 m x 14 m x 9.3 m}

DRAFT AND DISPLACEMENT

Operating Draft	20.0 m	{24.0 m}
Transit Draft	8.5 m	{8.8 m}
Survival Draft	15.0 m	{20.0 m}
Operating Displacement	53,220 mt	{59,200 mt}
Transit Displacement	38,960 mt	{40,200 mt}
Survival Displacement	48,310 mt	{54,800 mt}

OPERATING PARAMETERS

Water Depth	3,000 m	
Maximum Drilling Depth	30,000 ft	
Transit Speed	about 7 knots	
Survival Conditions	Wave 90 ft {115 ft}; Wind 100 kt {100 kt}; Current 2.5 kt	
Drilling Conditions	Wave 45 ft @ 13 sec; Wind 60 mph; Current 4.0 kt	
Mooring Assisted	2 x 5,000 HP thruster	
Design Conditions	Air Temperatures	+38 deg. C to -20 deg. C
	Water Temperatures	+32 deg. C to -2 deg. C

MAIN MACHINERY

Main Power	6 x diesel engines; 21,000 KW/28,200 KVA from 6 engine generators [9 x diesel engines; 50,580 KW/67,900 KVA from 9 engine generators]
Power Distribution	2 main 6,000 VAC buses, 480 VAC, 10 SCR's [3 main 11,000 VAC buses, 480 VAC, 8 SCR's]
Emergency Power	800 KW/1,000 KVA emergency generator
Propulsion	2 each 5,000 HP variable speed azimuthing thrusters [6 each 7,000 HP variable speed azimuthing thrusters]

**The Exmar 2500 Semisubmersible Rig is a Patented Design.
 Specifications Copyright 2004 by Exmar Offshore Company.**

CAPACITIES

Variable Drilling Load - Deck & Column	Abt. 9,000 mt operating / 6,000 mt transit
Riser Rack Area	890 m ²
Casing Rack Area	460 m ²
Other Rack Area	1,180 m ²
Total Rack Area	2,530 m ²
Free Deck Area	1,350 m ²
Drillpipe in Horizontal Racker	30,000 ft
Sacks	6,000 each
Drill Water	2,580 m ³ (16,300 bbl)
Potable Water	580 m ³ (3,650 bbl)
Fuel Oil:	2,820 m ³ (17,760) [4,465 m ³ (28,080 bbl)]
Bentonite/Bulk	12,000 ft ³
Cement/Bulk	12,000 ft ³
Liquid mud/brine	About 28,550 bbl - (in 4-systems)
Ballast	20,190 m ³ [21,640 m ³]

DRILLING EQUIPMENT

Derrick	170' x 65' x 44' main hoist 1,000 S. tons and auxiliary hoist 350 S. tons
Setback	430 metric tons (landing strings, casing, etc.)
Drawworks	Main - National Oilwell 4310, 4,000 HP D.C. Auxiliary - 1,000 HP DC
Rotary	Main - Varco RST 60 1/2, 60 1/2 in. opening \
	Auxiliary - Varco RST 60-1/2, 60-1/2 in. opening
Top Drive	Main - Varco TDS-8S, 750 S. tons, AC drive auxiliary - Optional
Traveling Block	Main - National Oilwell, 1,000 S. tons auxiliary - 350 S. tons
Hook	None
Swivel	None
Horizontal Pipe Handling	40,000 ft. 430 stands
Vertical Pipe Handling	30,000 ft. 325 stands
Riser Tensioners:	Twelve mounts up to 3000Kips capability
Guideline Tensioners:	None
Pod Tensioners:	None
Motion Compensator:	Varco Shaffer CMC-25-1000, main hoist Static - 1,000 S. tons, dynamic - 500 S. tons, 25 ft. stroke
Active Hv. Compensation	Available Option

MUD SYSTEM

Cementing	Third party - 2 x 600 HP triplex cement only optional Space available for 2200 HP Quintuplex
Mud Pumps	4 x National 14-P-220, 2200 HP - 7500 psi
Mud Processing Equipment	3,000 gpm circulating rate capability
Desander	2- 3 x 12 in cones
Desilter	2- 24 x 4 in. cones
Centrifuge	4 x decanting type with piping installed for 2 additional
Shakers	14 x Linear Motion (6 - Scalpers - 6 - Finishing - 2 mud conditioning)
Pumps	4 - 6 x 8 x 100 HP charge 10 - 6 x 8 x 100 HP mix/process 14 - 6 x 8 x 100 HP mud transfer (systems, B, C, and D)
Hot Swap Mud System	yes

**The Exmar 2500 Semisubmersible Rig is a Patented Design.
Specifications Copyright 2004 by Exmar Offshore Company.**

SUBSEA SYSTEMS

B.O.P.	18-3/4", 15,000 psi, 5 ram, 2 annular, flex joint, riser adapter
B.O.P. Handling	300 ton Transporter
Control System	Multiplex over hydraulic
Riser Details	Dril-Quip, 8,200 ft, 21 in OD, 90 ft joint, 98% buoyant
Telescopic Joint:	Dril-Quip, 55 ft stroke
Diverter	Dril-Quip, 60 in ID
Drill Pipe	3 1/2" OD, 5" OD, 5 1/2" OD, 6 5/8 OD
Drill Collars	4 3/4" OD, 6 1/2" OD, 8" OD, 9 1/2" OD
TV System	Third party ROV 8,200 ft
Positioning	Lower flex joint angle, DGPS
Choke & Kill	3-1/16" ID, 15,000 psi, H2S trim
Tree Handling	150 tonnes transporter with skidding system and carts work up to six (6) trees simultaneously
Subsea Gantry	110 tonnes x 9m span for BOP, 100 tonnes x 11.3m span for trees

MOONPOOL

44 m x 7.6 m

CRANAGE

3 x 100 S. ton x 180' boom

HELIDECK

S-61

MOORING

Winches	8 to 12 x Traction Winches
Wire/Chain	8 to 12 x 10,000 ft x 3-1/2" wire, 8 - 12 x 5,000 ft x 3 1/4" ORQ chain
Anchors	8 to 12 x 15 ton HHP
Additional	8 to 12 x PCC/Pendants
Thruster Assisted Mooring	2 x 5,000 HP thruster

ACCOMMODATION

160 people

DIVING SPREAD

ROV- In Upper Hull

ADDITIONAL DATA

Motion Characteristics	Heave Period - 23 seconds, Roll/Pitch period - 43 seconds
Livesaving Equipment	
Lifeboats	6 x 54 person
Liferafts	8 x 20 person
Rescue Boats	1 x 15 person
Firefighting System	
Helideck	Foam System
Test Areas	Deluge monitor(s) - water spray heat shield
Quarters	Automatic sprinklers
Fire and Gas Detection	

**The Exmar 2500 Semisubmersible Rig is a Patented Design.
Specifications Copyright 2004 by Exmar Offshore Company.**