

V Rig Overview

General

A primary objective in developing the V Rig concept was to look at ways to increase rig versatility without increasing rig weight & cost. One approach was to allow for the "Pin On" addition or swap out of rig components as needed for a specific job. This allows additional features to be built only when needed, and they can be left onshore when not needed. Also, by optimizing the design the weight penalty for this type of rig vs. a modular type is minimized, amounting to less than 5-10% of structural. This provides the option to use this type of rig for any platform application.

Lift Options

V Rig is designed for Dynamic (SPAR / TLP) or Static (Fixed Platform) applications. The connections between min. Lift packages, when designed for the Dynamic applications, generally give the inherent strength to lift the assembled rig in larger modules. The Lower Drilling Module (LDM) and the Upper Drilling Module (UDM) need only the addition of global lift padeyes & local reinforcing to be installed as a two module lift.

Platform Applications Options

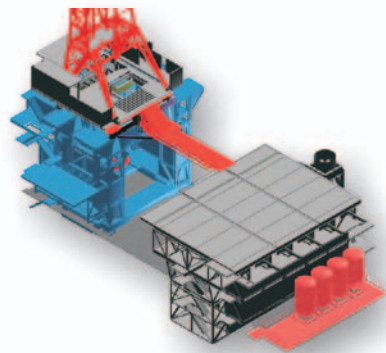
V Rig may be designed for any platform rig application; for jobs requiring installation with rig / platform cranes but also for standard API Modular Rig applications including SPARS & TLPs. The drawing package includes an option for a large Drill Floor with dual function Mast / Derrick & automated pipe handling system.

Fabrication Options

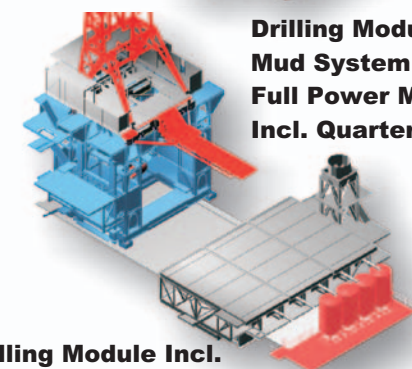
The package break up required for a minimum lift weight rig provides additional flexibility during fabrication in that multiple fabricators may be involved, thus potentially reducing costs & schedule.

Assembly Options

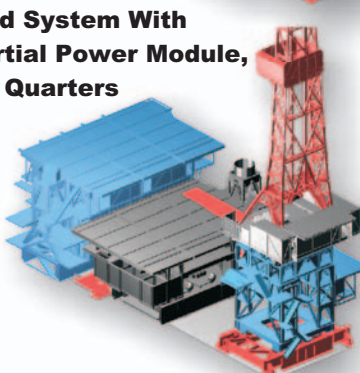
Attempts were made to standardize dimensions & connections so that components will fit in more than one configuration. For example, at the LDM there are column rows at 30'-0" centers in both the North / South & the East / West directions. This allows packages such as the mud process pkg, additional mud tanks, mud logger deck or a 3rd HP mud pump deck to be hung off any face of the LDM. It also allows the LDM to fit on a Skid base, with 30 ft beam centers, in any orientation. Further, the UDM will fit on the LDM in any orientation. The design also allows the active mud system to be placed either in the LDM or in a separate Mud Module.



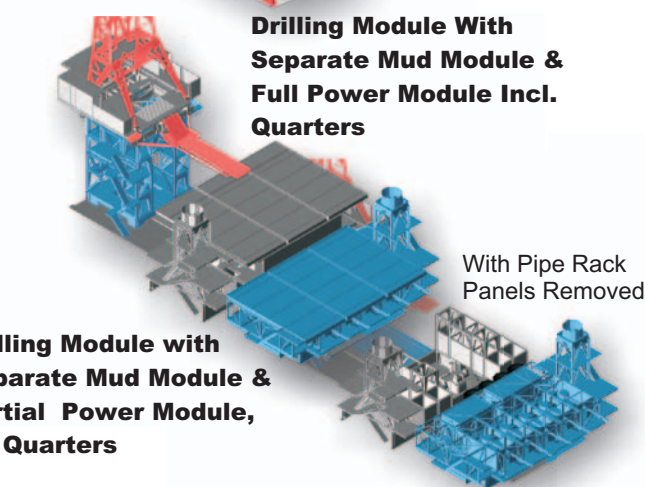
Drilling Module Incl. Mud System With Full Power Module Incl. Quarters



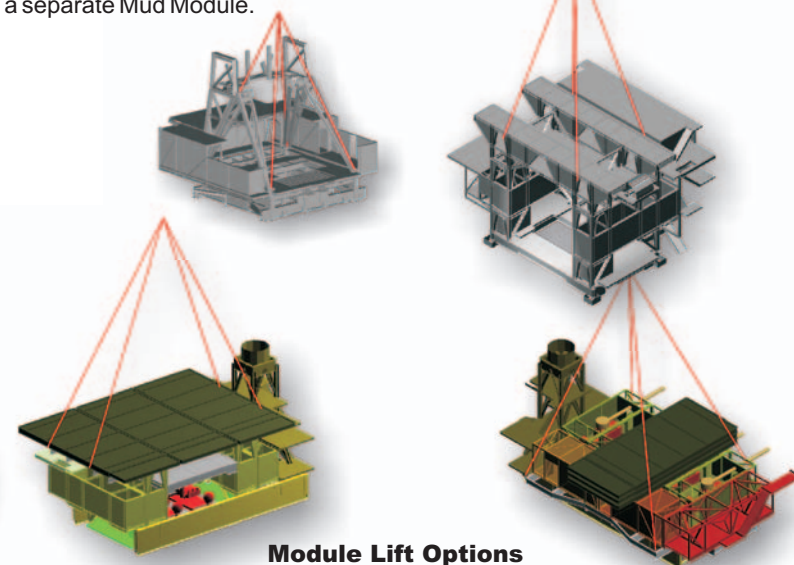
Drilling Module Incl. Mud System With Partial Power Module, No Quarters



Drilling Module With Separate Mud Module & Full Power Module Incl. Quarters



Drilling Module with Separate Mud Module & Partial Power Module, No Quarters



Module Lift Options

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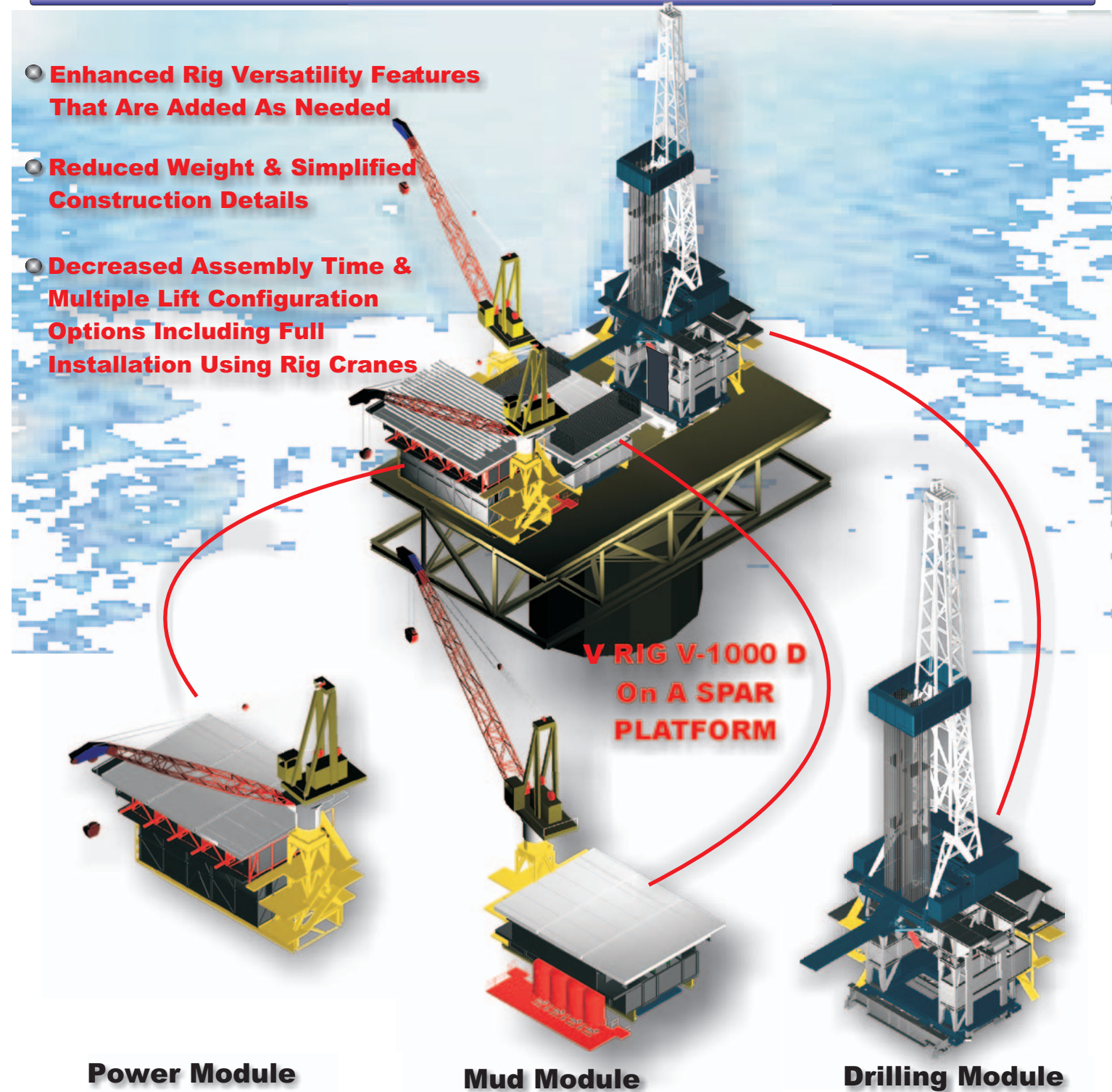
Patents Pending On Some Rig Concepts & Component Details

Contacts & Location

JATEC Engineers & Designers
4355 Sylvanfield, Suite # 250
Houston, Texas 77014
(281) 866-7177
For Additional Information:
D. Jarrett Tarrant, P.E.
Info@JatecEngineers.com



- Enhanced Rig Versatility Features That Are Added As Needed
- Reduced Weight & Simplified Construction Details
- Decreased Assembly Time & Multiple Lift Configuration Options Including Full Installation Using Rig Cranes



V RIG V-1000 D On A SPAR PLATFORM

Power Module

Power Module Provides Four Configuration Options Depending Upon Requirements For Power, Crew Accommodation, Rig Cranes & Platform Supports.

Mud Module

Optional Mud Module Provides A Full Mud System Or Additional Reserve Mud, Additional Pipe Storage For Drilling Risers Or Other Tubulars And/Or A 2nd Rig Crane, As Needed.

Drilling Module

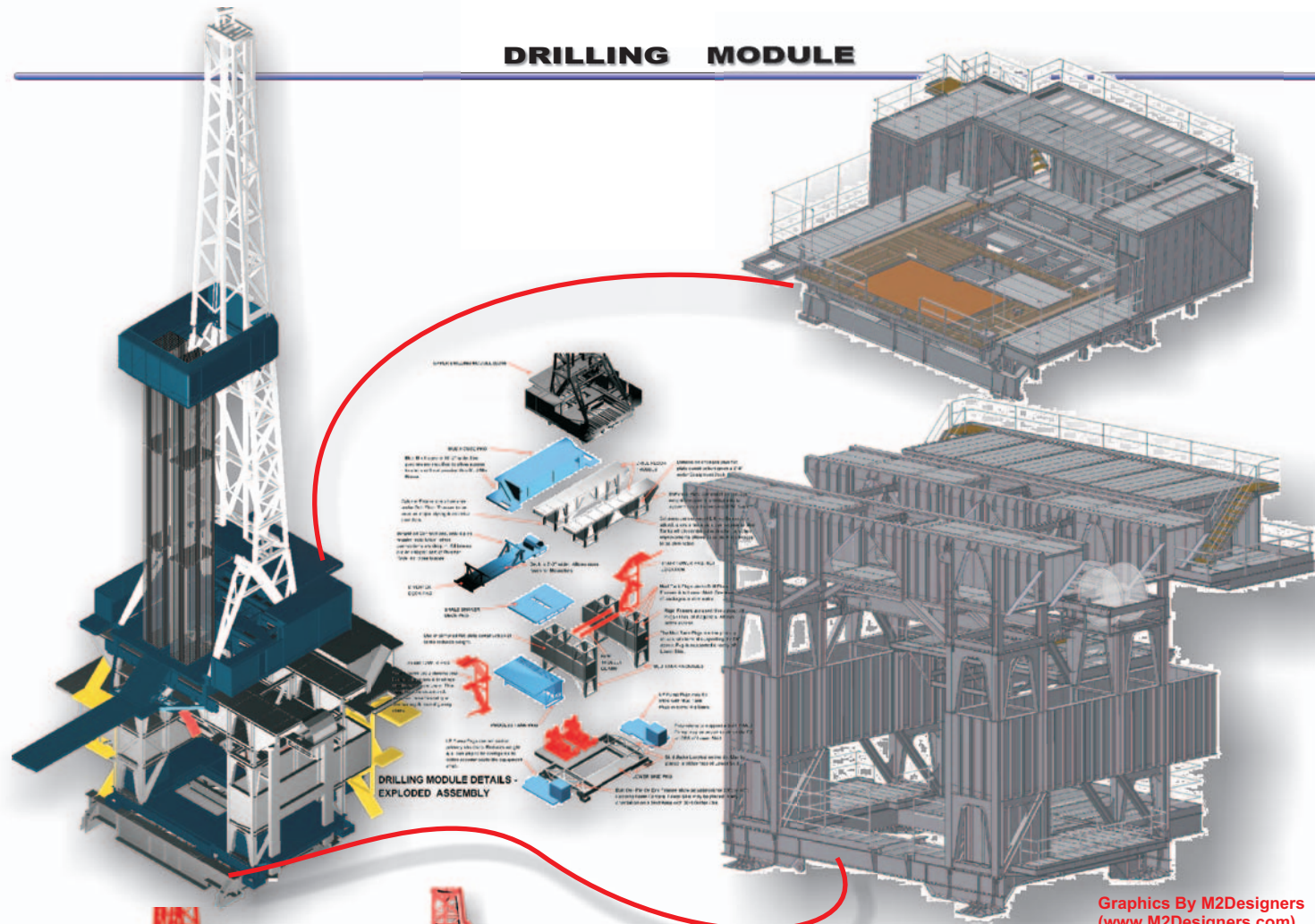
Multiple Configurations Are Provided To Accommodate 40.0 Ft To 65.0 Ft Capping Beam Centers; Any Orientation Of V Door & All Or Part Of The Mud System.

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HOUSTON, TEXAS

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DRILLING MODULE



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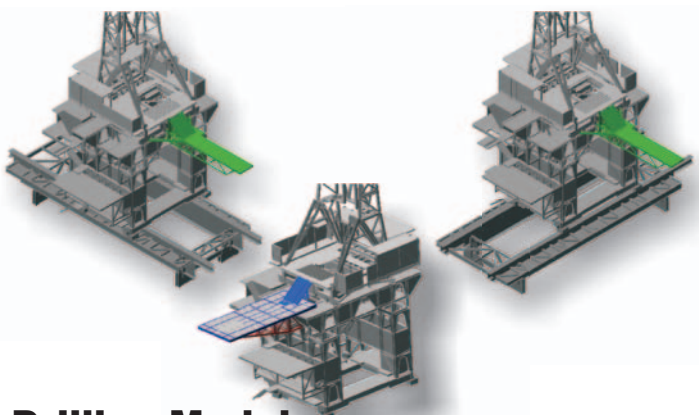
The Drilling Module Consists Of A Separate Upper Drilling Module (UDM) & Lower Drilling Module (LDM). Adjustable Footings Accommodate 40.0 Ft To 50.0 Ft Capping Beam Centers. A Skid Base Is Added For Centers Greater Than 50.0 Ft. The UDM May Be Rotated On The LDM To Achieve Any V Door Orientation. All Or Part Of The Active & Reserve Mud System May Be Accommodated In The DM.

Drilling Module Capacity Table

ITEM	V Rig Models			
	V-750D	V-1000D	V-1250D	V-1500D
Live Load Capacity				
Hook, Incl. TE (Kips)	750.0	1,000.0	1,250.0	1,500.0
S offback (Kips)	500.0	700.0	850.0	1,000.0
Rotary (Kips)	700.0	900.0	1,100.0	1,300.0
Mud (BBs)	1,000.0	1,250.0	1,500.0	2,000.0
Major Equipment				
Mast	30x30x170	30x30x170	30x30x170	30x35x170
Drawworks	Not	Varoo	Varoo	Varoo
Rotary	110-0-E	1320-0-E	ADS-100	ADS-10T
Pipe Handling	37-1/2	49-1/2	49-1/2	49-1/2
H.P. Mud Pumps	(2) PZ11(2) P	(2) PZ11(2) P	(3) PZ11(2) P	(3) PZ11(2) P
Platform Applications				
Platform Types (Fixed, TLP, SPAR)	F, T, S	F, T, S	F, T, S	F, T, S
Capping Beam Centers (Feet)	40, 45	40, 45, 50	40, 45, 65	40, 45, 90
Max UDM Well Offsets, Off Center Of Wellbay	12'-6"	18'-6"	22'-6"	0", Fixed UDM
Optional Components				
Lower Skid Extender	N	Y	N	N
Skid Base	N	N	Y	Y
Tubular Catwalk	N	Y	Y	Y

Option 1
1,000 To 1,250 Bbl Mud System At LDM, Skidded UDM

Option 2
Process Mud Only At LDM, Fixed UDM

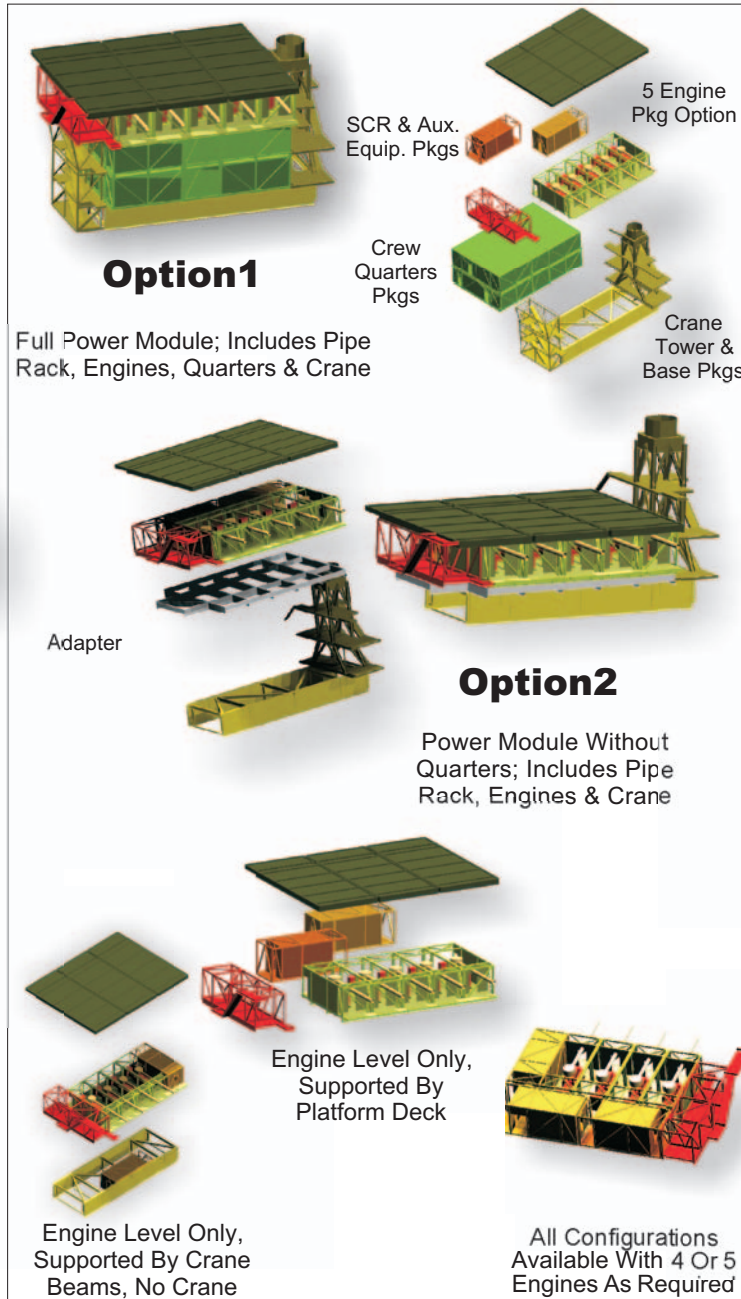


Drilling Module Orientation Options

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POWER MODULE



Option 1
Full Power Module; Includes Pipe Rack, Engines, Quarters & Crane

Option 2
Power Module Without Quarters; Includes Pipe Rack, Engines & Crane

Engine Level Only, Supported By Crane Beams, No Crane
All Configurations Available With 4 Or 5 Engines As Required

Other Configuration Options

The Power Module Provides Crew Accommodations, Engines, Pipe Rack Area & A Rig Crane, As Needed. Several Configuration Options Are Available, The Two Basic Configurations Are Shown Here.

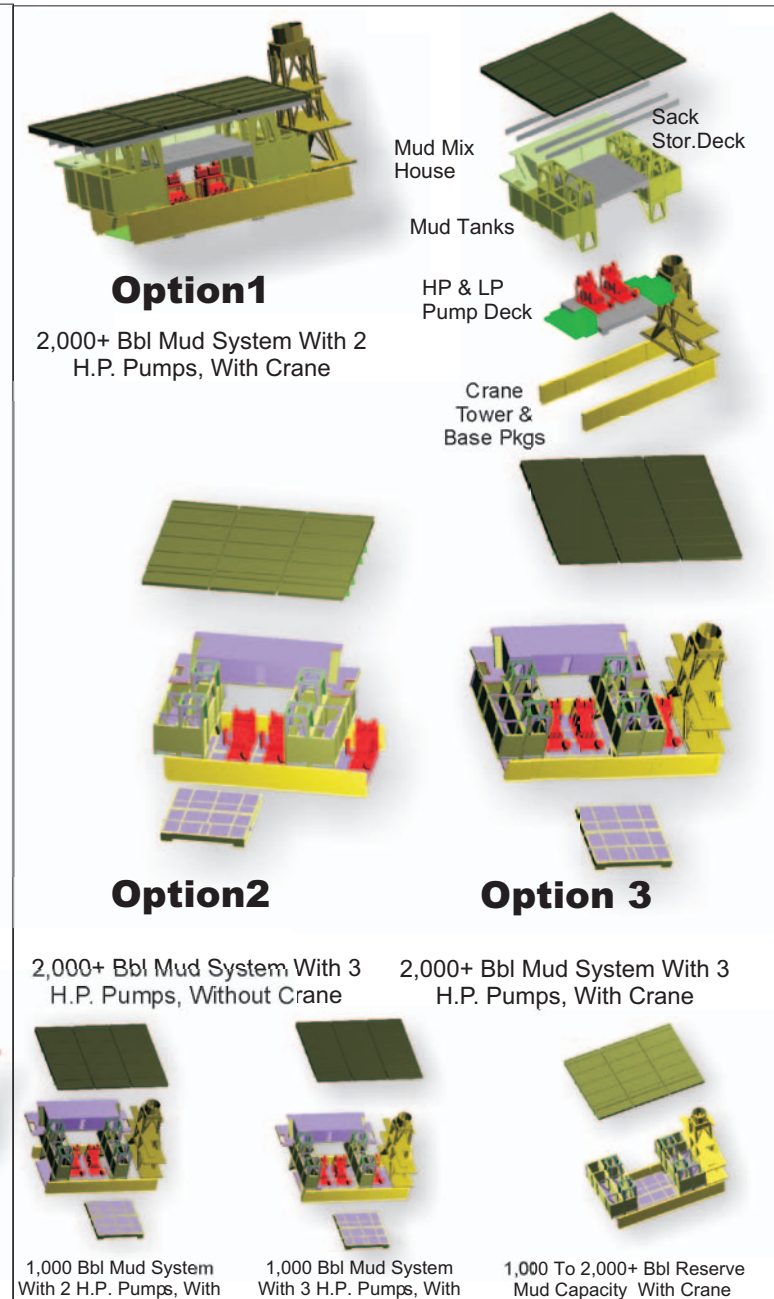
Power Module Capacity Table

ITEM	V Rig Models			
	V-750D	V-1000D	V-1250D	V-1500D
Live Load Capacity				
Pipe Rack, Static Conditions	825.0	1,100.0	1,375.0	1,650.0
Pipe Rack, TLP Conditions	750.0	1,000.0	1,250.0	1,500.0
Pipe Rack, SPAR Conditions	600.0	800.0	1,000.0	1,200.0

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MUD MODULE



Option 1
2,000+ Bbl Mud System With 2 H.P. Pumps, With Crane

Option 2
2,000+ Bbl Mud System With 3 H.P. Pumps, Without Crane

Option 3
2,000+ Bbl Mud System With 3 H.P. Pumps, With Crane

1,000 Bbl Mud System With 2 H.P. Pumps, With

1,000 Bbl Mud System With 3 H.P. Pumps, With

1,000 To 2,000+ Bbl Reserve Mud Capacity With Crane

Other Configuration Options

The Mud Module Is Optional; Providing Additional Pipe Rack Area, A 2nd Rig Crane Or Extra Mud Capacity, As Needed. In Some Applications The Active Mud System May Be Provided In This Module Rather Than At The DM.

MUD Module Capacity Table

ITEM	V Rig Models			
	V-750D	V-1000D	V-1250D	V-1500D
Live Load Capacity (Kips Or Bbls.)				
Pipe Rack, Static Conditions	825.0	1,100.0	1,375.0	1,650.0
Pipe Rack, TLP Conditions	750.0	1,000.0	1,250.0	1,500.0
Pipe Rack, SPAR Conditions	600.0	800.0	1,000.0	1,200.0
Liquid Mud Capacity, All Conds.	1,000.0	1,000.0	1,000.0	1,000.0
	To 2,500.0	To 2,500.0	To 2,500.0	To 2,500.0

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