

CJ43 A MODERN REPLACEMENT FOR SPECIFIC FOOTPRINTS

In mature oil and gas fields, particularly in the Middle East, India, Gulf of Mexico, West Africa and Asia, a LeT-116 footprint is often required due to earlier drilling campaigns. The CJ43 drilling jack-up, based on its successful predecessor, the CJ46, is the modern replacement for the old fleet of 116 footprint rigs and sets a new standard for jack-up drilling rigs used in mature oil and gas fields.

Drilling technology has evolved over the years with a focus on drilling equipment reliability, mechanization, partial automation and advanced well control. However, when reviewing the overall jack-up technology – excluding the drilling related equipment – a large part of the rigs that have been ordered in the last few years resembles the same design philosophy of thirty to forty years ago. Using innovative technology, a more modern jack-up design such as the CJ43 delivers operational benefits to owners and operators in terms of lower OPEX and higher operational flexibility.

Enhanced capabilities

The CJ43 is a three-legged cantilever type jack-up drilling rig and is part of the successful and well-established GustoMSC CJ series. The rig features enhanced capabilities and robustness with its innovative design solutions for everyday operational benefits. It is well equipped with a modern drilling setup for exploration and field development drilling.

Key jack-up design elements, which are part of every CJ design, are well balanced in the CJ43. Its leg design, leg handling (including jacking and fixation systems), cantilever reach in combination with hook load capacities and the applied philosophy of rig survivability in realistic operational and survival modes are brought to a new standard for mature oil and gas fields with this design.

Robust X-brace truss type leg design

A major design parameter typically required for working on fields where the older generation of units have been working before is a maximum spudcan bearing pressure of 39 t/m² (8 kips/ft²) which is matched by the CJ43 while still maintaining higher environmental capability than the competition. The modern, innovative and robust X-brace truss type leg design, in combination with the essential jacking and fixation systems, provides a high elevated operational and

survival capability and maximizes resilience during the installation conditions, where costly damage to the legs typically occurs most.

Large drilling envelope

The innovative X-Y-cantilever skidding system provides the large drilling envelope of 80 x 44 ft (24.4 x 13.4 m) and much appreciated additional deck space as it raises the entire cantilever structure above the main deck by approximately 12 ft (4 m). The 44 ft transverse reach with full combined cantilever load independent of the transverse position of the well center, enables more flexibility for the operator to perform development drilling with long horizontal sections without the typical hook load capacity limitations which the traditional drilling rigs have at the outer transverse position of the cantilever reach. The cantilever elevation allows for improved material handling as forklifts can drive underneath and thereby reduces crane lifts from PS to SB side and vice versa. It also provides additional space below the cantilever for container and equipment storage and most of all provides additional means to handle mud return, cuttings and SWARF waste.

VSD-controlled jacking system

Additional safety and reliability is introduced by the VSD-controlled jacking system. This is a proven jacking system which allows positioning of the rig on site in a safe, smooth and fully controlled process. The system is fully redundant and each pinion is torque controlled with stepless-speed ability. The controlled ramp up and down, with brakes still engaged, results in a significant reduction of peak electrical and mechanical loads and reduces the wear and tear of the leg rack, pinions, gears and brakes. The system improves the safety of each rig move as it will monitor RPD values on the fly and will inform the jacking master if critical limits, set in advance with reference to rig capability, are being exceeded.

Large inner hull space

The large inner hull space allows for below deck placement of the P-tanks, where typical jack-up designs in this capacity range have to store this equipment on the main deck. This arrangement ensures the shortest material handling routing between the sack store, mixing equipment and mud pits. The mud pits are arranged such that there are no protruding girders or stiffeners on the inside and therefore have the best possible mud quality since there are no dead zones where solids can settle down, which also eases the cleaning process of the pits.

More available deck space

The cantilever is sized such that all mud treatment equipment is located inside the enclosed part, consisting of two decks, which creates more available main deck space for the ever increasing amount of third-party equipment. Being able to place all the mud treatment equipment within enclosed spaces also reduces the overall maintenance costs, as it is no longer exposed to the outside environment.

Lower weight

One would assume that having all the above advantages would come at the cost of additional weight. However, by employing the latest design techniques, modern calculation methods and using high strength steel in the highest loaded areas the CJ43 has a significantly lower weight than its closest competitors.

Conclusion The CJ43 provides more for less. It is a truly best-in-class jack-up solution for the mature oil and gas fields in the Middle East, India, Gulf of Mexico, West Africa and Asia.

MAIN CHARACTERISTICS

Hull length	214 ft (65.25 m)
Hull width	203 ft (62.00 m)
Hull depth	26.2 ft (8.00 m)
Design draft	16.4 ft (5.00 m)

Leg centers

Transverse	142 ft (43.28 m)
Longitudinal	129 ft (39.32 m)
Accommodation	120 persons

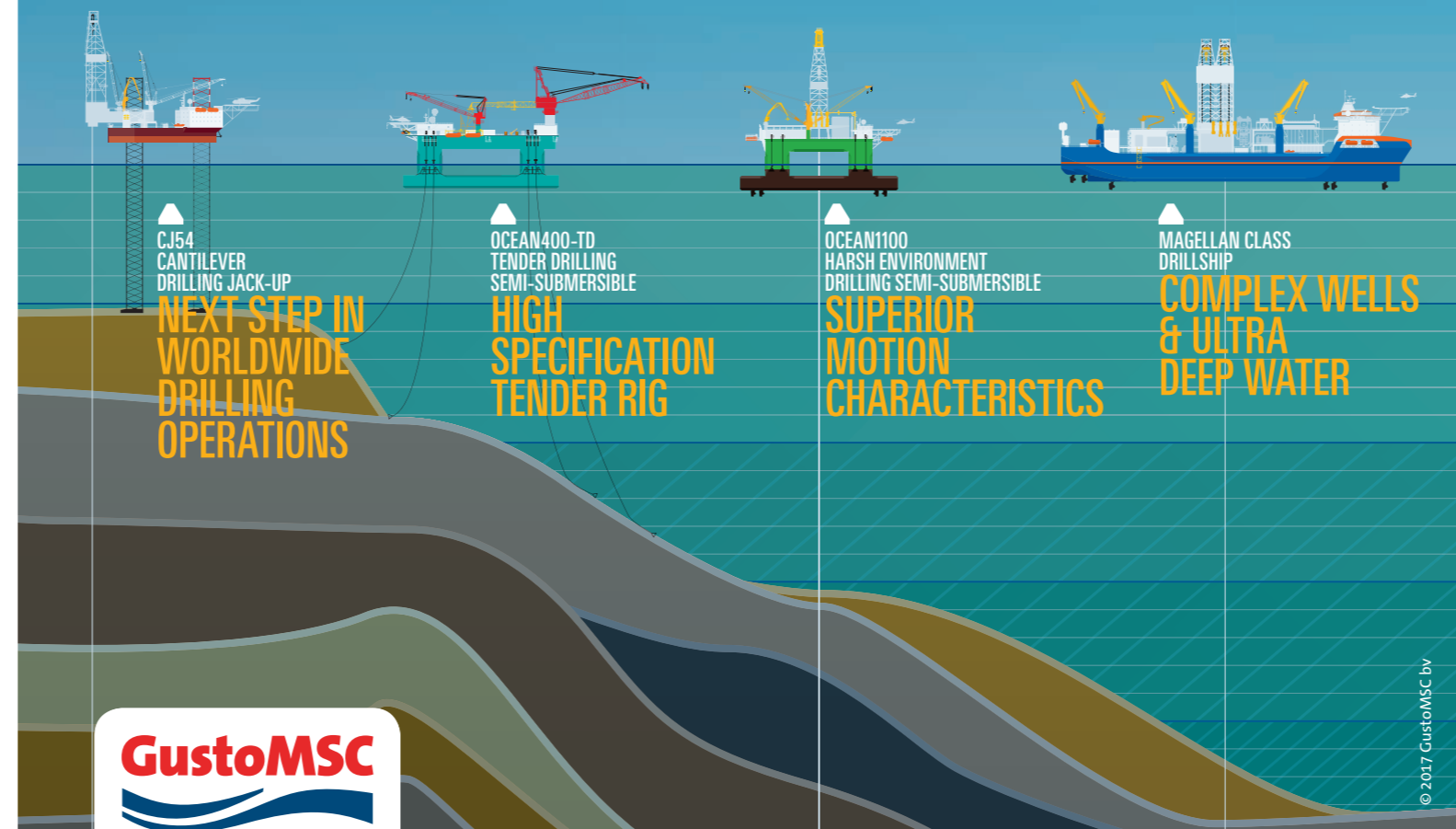
Legs

Type	Triangular open truss, X-braced
Leg chord spacing	32.8 ft (10 m)
Overall length	503 ft (153.3 m)
Footing area	1,990 ft ² (185 m ²)
Fully retractable spudcan (flush with base hull)	

Cantilever

Maximum reach	
Longitudinal	80 ft (24.4 m)
Transverse	44 ft (13.4 m)
Max. combined load	1,134 t (2,500 kips)

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CJ43 CANTILEVER DRILLING JACK-UP BEST-IN-CLASS SOLUTION FOR EXISTING FOOTPRINTS



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GustoMSC
Karel Doormanweg 35
3115 JD Schiedam
The Netherlands
T +31 (0)10 288 30 00
F +31 (0)10 288 30 01

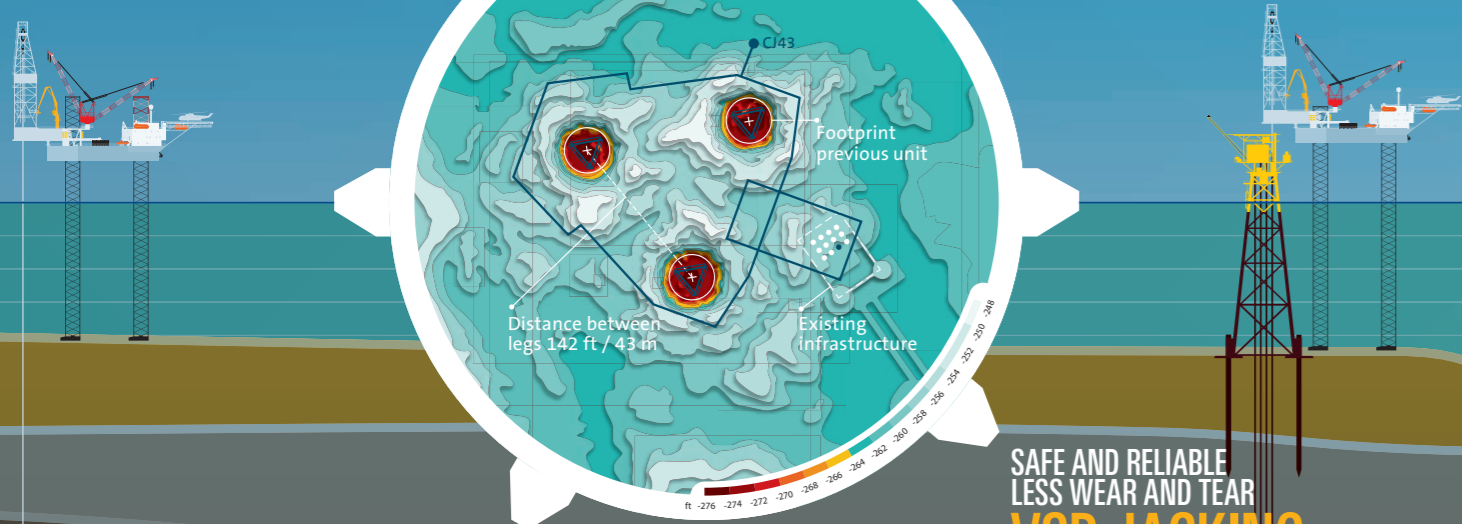
GustoMSC USA
840 West Sam Houston
Pkwy North,
City Center 4 – Suite 410,
Houston, Texas, 77024 USA
T +1 713 380 2600

www.gustomsc.com
info@gustomsc.com

Modern replacement In mature oil and gas fields, a LeT-116 footprint is often required due to earlier drilling campaigns. The CJ43 cantilever drilling jack-up delivers the required footprint together with several operational benefits to owners and operators in terms of lower OPEX and higher operational flexibility. The CJ43 sets a new standard in mature oil and gas fields.

CJ43 BEST-IN-CLASS SOLUTION FOR EXISTING FOOTPRINTS

MORE OPERATIONAL
FLEXIBILITY
**X-Y SKIDDING SYSTEM
AND LARGER
OPERATIONAL
CAPABILITIES**



LOWER OPEX
**INTEGRATED
DESIGN AND
LARGER FREE
DECK SPACE**

SAFE AND RELIABLE
LESS WEAR AND TEAR
**VSD JACKING
SYSTEM,
EQUIPMENT IN
ENCLOSED AREAS**



LEG DESIGN
**STURDY
X-BRACING**

The innovative and robust X-brace truss type leg design, in combination with the essential jacking and fixation systems, provides a high elevated operational and survival capability.

MAXIMUM
WATER DEPTH
375 FT

The CJ43 has a maximum water depth of 375 ft (114 m) in moderate conditions. In harsh conditions, the maximum water depth is 230 ft (70 m).

LARGE
VARIABLE LOAD
4,200 T

Higher environmental loads in elevated condition and during installation while at the same time lower design weight. The variable loads are matching or higher compared to other designs.

LARGE USABLE
DECK AREA
23,700 SQFT

The entire work deck of 23,700 sqft (2,200 m²) is reachable with forklift trucks, thus reducing crane lifts.

CANTILEVER
REACH
80 X 44 FT

The 44 ft (13.4 m) transverse reach enables more flexibility to perform development drilling with long horizontal sections, without the typical hook load capacity limitations.

FOOTPRINT
142 FT

The CJ43 matches existing footprint of the LeT-116 or equivalent units due to earlier campaigns.

