

# SAGADRIL 2

Sagadril 2 (Ex-Hakuryu-VII) is a Mitsubishi MD T76J-VII self-elevating cantilever jackup drilling rig, jointly designed by Japan Drilling Co., Ltd. and Mitsubishi Heavy Industries and commissioned in March 1981 at MHI's Hiroshima shipyard.

The rugged design permits operations in water depths of up to 300 feet while drilling to a rated drilling depth of 20,000 feet.

The cantilever provides a drilling envelope extending from 10 ft to 45 ft aft of the stern and 12 ft either side of the rig's centerline enabling the rig to access multiple wells on platforms without having to relocate.

The spud cans can be fully retracted into the hull allowing easy loading onto dry transport vessels for safer and quicker mobilization.

Cantilever capacity was extended to 45 ft outreach from 40 ft in 2000.

## DESIGN:

Mitsubishi MD T76J-VII self-elevating cantilever jackup drilling rig with three triangular trussed independent legs.

## MAIN DIMENSIONS:

Length (molded).....	193'7" (59 m)
Breadth (molded).....	183'8" (56 m)
Hull Depth.....	21'7" (6.58 m)
Leg Length.....	421.2' (128.38 m)
Usable Leg Length (below hull).....	360' (109.68 m)
Spud Can Area.....	802 ft <sup>2</sup> (74.5 m <sup>2</sup> )
Cantilever Capacity.....	45' x 24'
Drilling Envelope.....	35' x 24'
Gross tonnage.....	6,014 tons
Helideck rating.....	for Bell 212 & 412

## DESIGN CRITERIA:

Max. operating water depth..... 300' with 30' air gap & 25' penetration  
Max. rated drilling depth with 5" or 5 1/2" drill pipe..... 20,000'

## STORAGE CAPACITIES:

Fuel oil.....	2,516 bbls (400 m <sup>3</sup> )
Drill water.....	4,497 bbls (715 m <sup>3</sup> )
Potable water.....	1,679 bbls (267 m <sup>3</sup> )
Liquid mud.....	2,283 bbls (363 m <sup>3</sup> )
Bulk mud.....	4,660 ft <sup>3</sup> (132 m <sup>3</sup> )
Bulk cement.....	4,660 ft <sup>3</sup> (132 m <sup>3</sup> )
Sack storage.....	5,000 sacks

## MAXIMUM GROSS VARIABLE LOAD:

While Drilling (including 450 tonnes setback and hook load)	2,650 tonnes at 25' extension <b>2250 tonnes at 45' extension</b>
Jacking or Towing	1,200 tonnes

## CLASSIFICATIONS HELD:

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

Nippon Kaiji Kyokai; NS\* Self-elevating Drilling Unit.

## ACCOMMODATION:

Three floors of air conditioned cabins for **99 personnel**.

## POWER EQUIPMENT:

Main Engines:	Four Niigata diesel 12V22AX engines, 1,891 PS (1,865 hp) x 1,200 rpm.
Main Generators:	Four Mitsubishi Electric CFC generators, 1,857 KVA at 1,200 rpm, AC 600V, 60 Hz.
Emergency Use:	One Niigata diesel 6L20AX engine, 600 PS (592 hp) at 900 rpm and one Mitsubishi CFC 500 KVA at 900 rpm, AC 450V, 60 Hz generator.

## MOORING SYSTEM:

Anchors:	Four 4 tonnes Moorfast type anchors.
Anchor Wire:	Four 1 1/2" x 2,130' wire anchor lines.
Anchor Windlasses:	Four single drum, powered by 40 kW AC motors. Maximum pull 40 tonnes x 4 m/min. (low gear), 10 tonnes x 16 m/min. (high gear).

## DRILLING EQUIPMENT:

Drawworks:	National 1320-UE, fitted with an Elmagco 7838 eddy current brake, powered by two 800 hp DC motors with MD/Totco.satellite Driller.
Derrick:	Emasco-Mitsubishi, 157' high with 30 ft x 30 ft base, 1,333,000 lbs static load capacity
Crown Block:	Continental Emasco-Mitsubishi, 1,000 kips capacity, 7 x 60" sheaves for 1 3/8" drilling line and 1 x 9/16" sandline sheave. Fitted with a Martin Decker load cell.
Travelling Block:	National type 650G500 block with unitized hook, 1,000 kips capacity, 6 x 50" sheaves for 1 3/8" drilling line.
Top Drive:	Varco TDS-4H, 45,500 ft/lbs continuous torque at 110 rpm and 29,100 ft/lbs continuous torque at 175 rpm with soft torque system Mark II.
Swivel:	National P-500, 1,000 kips capacity.
Rotary Table:	Continental-Emasco T-3750, driven by one Mitsubishi Electric 800 hp DC motor.

## BOP & DIVERTER EQUIPMENT:

BOPs & Diverter	One 29 1/2" x 500 psi Hydril MSP diverter. One 21 1/4" x 2,000 psi Shaffer annular. Two 21 1/4" x 2,000 psi CIW U single ram. One 13 5/8" x 5,000 psi Hydril GK annular. Two 13 5/8" x 10,000 psi CIW U single ram. One 13 5/8" x 10,000 psi CIW U double rams.
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BOP Control System:	Model T-40270-3S Koomey accumulator
BOP Crane:	40 tonnes (20 ton + 20 ton) Double Hook BOP Crane.

## MUD CIRCULATION SYSTEM:

Mud Pumps:	Two National 12-P-160 triplex, each driven by two Mitsubishi Electric 800 hp DC motors.
Shale Shakers:	Three Derrick Model-2000 Single Flo-Line Cleaner Plus shakers. One Derrick Model 48 Single Flo-Line Cleaner
Desilters:	Two Pioneer Model T-16-4, 800 gpm capacity(Maximum).
Degassers:	One Derrick VACU-FLO 1,000 TYPE
Centrifuge:	Two Swaco Model 518, 250 gpm capacity(Maximum).
Mud Cleaner	One Brandt type ALT1000, 1,200gpm capacity(Maximum).

## OTHER EQUIPMENT:

Cementing Unit:	Lease item.
Cranes:	Two OBE Machinery and Engineering Co., Model OED-360, capacity 30 tonnes at 39' (11.9 m)
Water Maker:	Two Alfa Laval ORCA-50, 50 tonnes/day*
Anti-pollution Equip.:	One 123 persons capacity Sasakura - Hamwarthy Trident ST-10 sewage treatment unit One Taiko Kikai UVK oil and water separator, maximum capacity 5,000 liters / hour with 15 ppm oil content or less.