

5 HIMSEN OVERHAULS KEEP DIAMOND OFFSHORE MODU OPERATIONAL WITH ZERO DOWNTIME

THREE HIMSEN 9L32/40 & TWO 18V32/40 ENGINES OVERHAULED IN GULF OF MEXICO

The Diamond Ocean BlackRhino is a Mobile Offshore Drilling Unit (MODU) with large power requirements to meet the demands of its propulsion and drilling plants. To meet these requirements, Ocean BlackRhino is powered by six inline HiMSEN 9L32/40 engines and two 18H32/40V engines. Due to charter requirements the vessel can only have one engine off-line for service at a time and is required to maintain the engines in accordance with the manufacturer's maintenance intervals.

Diamond Offshore contracted Goltens Houston to provide complete service maintenance and supervision for two 20,000 hour and three 10,000 hour overhauls on their engines.

To minimize operational impact, Goltens technicians worked around the clock in two, twelve hour shifts in collaboration with the ships' crew. The process was to complete the required maintenance on each engine and finish the test runs before moving on and disabling the next. This allowed the Ocean Blackhawk to continue drilling operations without interruption.

HIMSEN 9L & 18V 32/40 ENGINE OVERHAUL SCOPE

- Verify torque on all major components.
- Crankshaft deflections.
- Calibration and overhaul of all cylinder units including; cylinder head, liner, piston, connecting rod, etc.
- Visual inspection of gear train.
- Inspection of camshaft and swing arm roller bearings
- Inspection and OH of all fuel pumps.
- Overhaul and test of fuel injectors
- Check and adjust tappet clearances.
- Reassembly of each engine
- Commissioning and run in of engines per manufacturer guidelines.

PROJECT FACTS: DRILLSHIP OVERHAULS

Vessel:	Ocean BlackRhino
Vessel Type:	MODU (Mobile Offshore Drilling Unit)
Customer:	Diamond Offshore Drilling
Work Location:	Gulf of Mexico
Engine Model:	HiMSEN 9L32/40 & 18V32/40
Engine Output:	4,500 kW & 9,000 kW



Removal of cylinder liners from engine



Rigging of liner to calibration/overhaul area



Calibration checks of piston rods under full torque



Torque checks of critical fasteners



Fully overhauled HiMSen 9L32/40

HIMSEN 9L32/40 AND 18V32/40 OVERHAUL RESULTS

Goltens' offshore certified service team was fully compliant with the safety guidelines of Diamond Offshore ensuring that the engines were overhauled safely and efficiently according to Permit to Work procedures. Upon completion, operational tests reflected engine performance and operational measurements were within specified ranges and tolerances, allowing the engines to be returned to full service conditions.

CUSTOMER COMMENTS:

"I just wanted to let you know how much I appreciate the fantastic job your teams have done here on the vessel. Your lead Service Engineer has really demonstrated his vast knowledge of these Himsen engines and gone out of his way to educate the crew how to do things and what to look for during inspections. It has been a great pleasure working with him and the entire Goltens Team"

-Chief Engineer, Diamond Offshore