

## GOLTENS EXTENSIVE MULTI-DISCIPLINARY WORK PREPARES THE ENERGY EXERTER FOR MAJOR MOVE

### COMPLETE OVERHAUL AND PRESERVATION OF SIX DIESEL ENGINES AND AUXILIARIES AHEAD OF RELOCATION TO THE BLACK SEA

In December 2012, Prime Point Holdings of Singapore, acting on behalf of Energy Exterter Limited, awarded Goltens the order for the inspection, complete overhaul, operational testing and preservation of three 2500KVA Wartsila 12V22MD diesel generator sets, one 750KVA Baudouin 12P15 diesel generator set and two 6-cylinder Caterpillar 3406C diesel crane engines as well as all related auxiliary systems onboard the Energy Exterter, a 31 year old Self-Elevating Cantilever Jack Up Oil Rig.

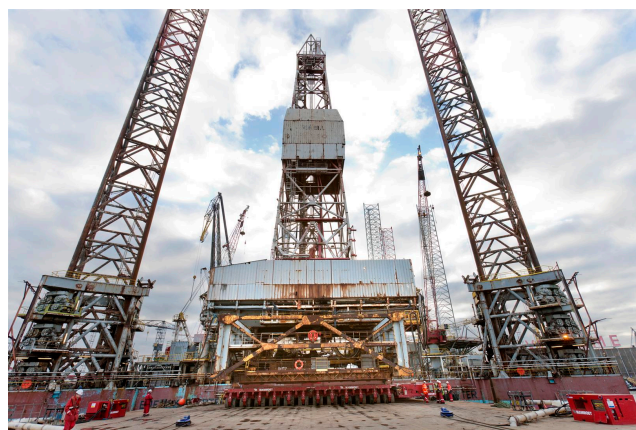
Prime Point Engineering & Projects, a provider of a diverse range of engineering and project services, including concept development, basic engineering, rig inspection and project management services was responsible to oversee the overall refit and relocation project.

In addition to the complete refurbishment of the onboard generators, the Energy Exterter project scope was huge. The rig was disassembled by Keppel Verolme in Rotterdam into 8 separate pieces and prepared for shipment to Burgas, Bulgaria and reassembly in the Black Sea later on in the year. After shipment, a total of 7.5 km of welding will need to be carried out to reassemble the 8 separate parts into a complete well-functioning rig again.

Goltens was selected to perform the work due to its reputation for high quality work as well as their experience dealing with a broad diversity of the engine makes and models. Goltens full range of diesel, in-situ machining and shop overhaul services allowed Prime Point to rely on a single contractor to handle all aspects of the work and Goltens experience providing service anywhere in the world allowed the customer to confidently move forward.

#### PROJECT FACTS: ENERGY EXERTER

Rig Type:	Self-Elevating Cantilever Jack Up
Rated Water Depth	300ft
Drilling Depth	25,000 ft
Year Built:	1982



#### DIESEL ENGINES:

- Wartsila 12V22MD (3 units) / 2,500KVA
- Baudouin 12P15 (1 unit) / 750KVA
- Caterpillar 3406C (2 units) / 345KVA

#### AUXILIARY SYSTEMS:

- Generators
- Cooling water system
- Hydraulic systems
- Exchangers
- Mud pumps
- Fuel systems
- Hydraulic systems
- Safety systems
- Exhaust Isolation

### ENGINE OVERHAUL WORK:

As the rig's power requirements exceeded available shore power at times, Goltens coordinated closely with the customer and had to be flexible in how the engines were taken off line and ensure that they were brought back into service on schedule.

Goltens performed inspections of all engines and dismantled and overhauled all components prior to reassembly. Parts such as the cylinder heads, liners, nozzles, valves and seats were transferred to Goltens' nearby workshop in Rotterdam and fully overhauled prior to reassembly. Additionally, Goltens In-Situ machinists polished all crankpin and main journals as part of the overhaul and rebuild process.

### AUXILIARY SYSTEM COMPONENT OVERHAUL:

Goltens also overhauled all auxiliary components on-site in the yard as well as in the workshop. Examples include: fuel pumps, heat exchangers, coolers, complete cooling system, hydraulic systems, mud pumps and safety systems for the engines and generators.

### ENGINE PRESERVATION FOR SHIPMENT:

To prepare for the long gap between overhaul and commissioning after transport to the Black Sea, Goltens also undertook measures to preserve the condition of the newly overhauled auxiliary systems, isolated the engine exhaust systems and took preservation measures on each of the engines.

### RESULTS:

Goltens completed all facets of the work scope on time to the satisfaction of the customer. Goltens ability handle all aspects of the project avoided the customer managing multiple contractors and Goltens ability to overhaul the engines onboard and avoid removal of major items from the rig allowed the customer to realize significant cost savings.

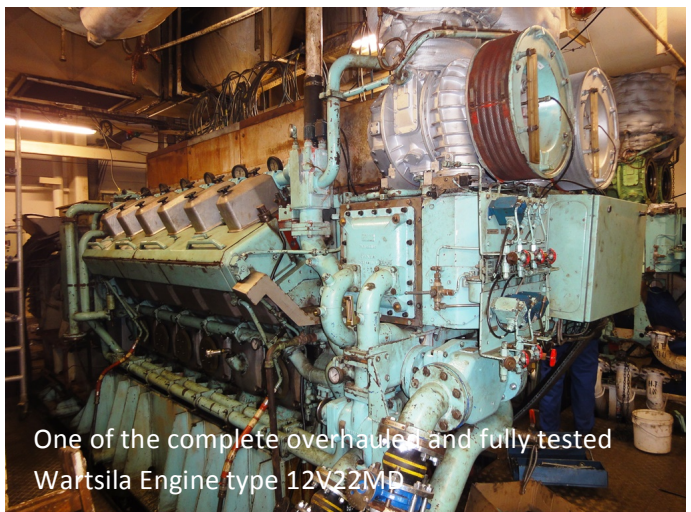
Goltens diesel technicians will travel to Burgas in the 4<sup>th</sup> Quarter of 2013 to commission and test all systems prior to Energy Exerter being put back into service for the next phase of its lifecycle.



Reassembling of one of the overhauled pistons and connecting rods



Rotating the engine to its correct position



One of the complete overhauled and fully tested Wartsila Engine type 12V22MP