

Case study

Pipelay Crane Vessel

Project Summary

Project: Semi-submersible crane vessel

Application: Electric propulsion and winch systems

Nidec's Role

Nidec Industrial Solutions was selected to supply the electric propulsion and winch systems for one of the world's largest pipelay crane vessels.



Scope of Supply

- Electric propulsion system
- Winch system
- Thruster motors
- Emergency synchronous generator

The challenge:

Designing electric propulsion and winch systems on one of the world's largest crane vessels

A 198-meter-long multipurpose vessel was built in the mid-1980s to support the installation of offshore oil platforms and their supporting structures. Equipped with two large, fully revolving cranes, each with a 140-meter-long boom and a lifting capacity of 7,000 tons at 40 meters, the semi-submersible vessel is one of the largest of its kind in the world and is capable of operating in more severe weather conditions than smaller, conventionally designed vessels. The ship also contains housing accommodations and shop facilities for as many as 800 construction crew members, as well as saturation diving facilities that support underwater connection work.

When designing the new vessel, the owner sought efficient, reliable electric propulsion and winch systems to power the vessel's propulsion system and cranes.



The solution:

Customized propulsion and winch systems from Nidec Industrial Solutions

Nidec Industrial Solutions supplied the customized propulsion and winch systems supplied with the original vessel and met the original owner's performance requirements for more than 30 years. This solution included a combination of synchronous generators, asynchronous motors, synchronous propulsion motors and drives, and DC motors. One of the world's leading suppliers of custom marine propulsion systems, Nidec designs quiet, compact solutions that optimize energy use and require minimal maintenance.

After going through an ownership change decades later, the new owner sought to revamp the equipment on the vessel to accommodate deep water oil and gas extraction processes.

To support the power needs on the revamping project, Nidec Industrial Solutions was called in again to support the power needs of the revamping project. The additional products supplied by Nidec not only enabled the owner to reach new depths at high sea, but also improved the productivity of the pipe laying platform.

System components supplied by Nidec Industrial Solutions

11 – Main synchronous generators

- 9 GSCR 11x14
- 2 GSCR 10x14

1 – Emergency synchronous generator – GSCB 560 W 8

4 – Asynchronous motors – 10 kV coupled with pumps, CR 630 x 12

2 – Synchronous propulsion motors + Silcovert S – MSCR 90 Y6

79 – DC motors

- 8 CH 800 SEKDV coupled with azimuthal propellers
- 6 CH 800 MEKD coupled with propulsion propellers
- 31 CH 400 XDKR coupled with winches
- 21 CH 400 LDK cranes
- 13 CH 630 MCK cranes