Jack Up & Lift Boat

SeaStream™ Dynamic Positioning (DP) Special Functions

GE's latest generation of SeaStream™ is the class leader for functionality to support the particular requirements of jack up vessels and liftboats. These features were designed by GE in close collaboration with vessel owners and operators to ensure that the special features adhere to the underlying SeaStream™ design philosophy:

- Easy to use, mariner friendly
- Instinctive HMI
- Efficient
- Clear and unambiguous information

The specialised jacking functions are provided to help the user to do their job – better and more efficiently!

JACKING FUNCTIONS

As the legs move from raised/lowered/raised the above water wind area and the below water 'current' area of the vessel's DP model changes.

If this variation is not accounted for in the DP control software the DP system may be prone to errors and inaccuracies.

GE's SeaStream™ software is adapted to monitor the status of each leg and to adapt the software model according to measured parameters.

Each leg is monitored throughout the jacking process (up or down). Data can be provided to the DP system either via sensors or via manually entered data.

The DP operator is given clear information about the elevation and tension in each leg and is given graphical advice supporting operational decisions. In particular the operator is warned of the transition between the vessel being "Free" floating and either "tagged" (in contact with the seabed) or "Elevated" (firm contact with seabed, significant force exerted).

With this information the operator is guided to make the appropriate selection of control status (Free/Tagged/Elevated) thus invoking special control algorithms which adapt the DP system's behaviour accordingly. In simple terms the DP system does not command position and heading changes once the legs are in contact with the seabed.

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SeaStream™ Dynamic Positioning (DP) Special Functions

WIND LOAD PROFILES

Jack up vessels and liftboats often carry significant deck loads – for example a wind turbine installation vessel may carry substantial quantities of wind turbines.

The DP model can adapt to take account of the changing effect of increasing or reducing wind loads if informed of changes as they occur.

The operator is given facilities by which changes in deckloads can be quickly and easily transmitted to the DP system enabling the wind load profile of the DP software to be adjusted.

INTERFACES

Where automatic data entry is preferred the interface is as follows:

4 off - 4-20mA Analogue input – Measured Leg extension

4 off – 4-20mA Analogue input – Measured Leg weight/load

CONTACT US

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FEATURES

GENERAL

- Latest SeaStream model
- Mariner friendly for efficient operations

JACKING FUNCTIONS

- Leg extension – measured or manual entry
- Leg tension – measured
- Leg status – free, tagged or elevated
- Software control algorithm adapts per leg status
- Protects vessel when in transition between free floating/seabed
- Graphical and numeric

WHIP STATUS

- Monitoring of whip loads on each leg
- Advisory to operator
- Graphical

WIND LOAD PROFILE

- Adjustment of DP model due to changing deck loads
- Graphical interface