

Safe hook on & lift off

Lower OPEX with increased workability

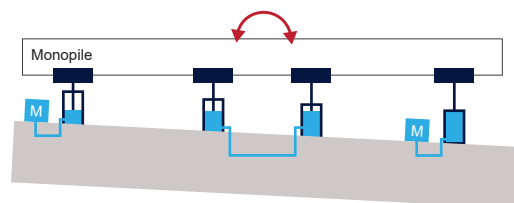
Based on proven technology

Jones act compliant

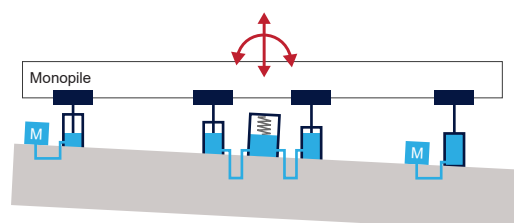
MOTION COMPENSATED MONOPILE FEEDER

With the vastly growing offshore wind market venturing into new geographical areas, the demand has grown for the ability to supply monopiles to installation assets in the field.

Barge Master and TWD have developed a motion compensated cradle and skidding track, able to lift the future generation monopiles from a feeder barge. By doing so the workability of your project is increased, lowering the OPEX.



Pitch compensation



Pitch and heave compensation

MONOPILE FEEDERING



With the vastly growing offshore wind market venturing into new geographical areas, the demand has grown for the ability to supply monopiles to installation assets in the field.

However, offshore heavy lifting from floating supply to jack-up or floating heavy lift vessels is a challenging task, where wave induced motions have huge impact on the workability of the operation.

During the lift off operation the heavy lift vessel and barge are influenced by the waves, current and wind, which cause relative motions between the two vessels. For certain seastates these motions will restrict the lift-off operation and cause weather downtime, delays and additional costs for the project.

Motion compensation technology compensates the relative motions and increases the workability in higher seastates leading to faster, safer and more cost-effective offshore wind farm installation.

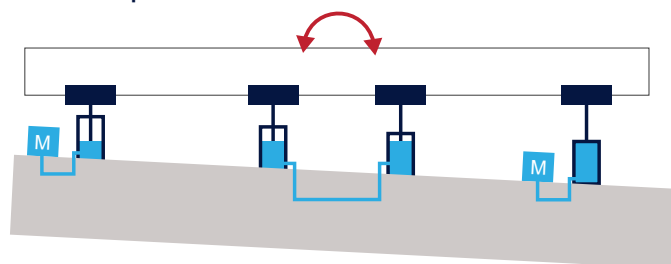
MOTION COMPENSATION DESIGN

TWD and Barge Master developed a novel motion compensation design to accommodate feedering of Monopiles (MP's). The design consists of active / passive monopile cradles, which allow compensation of a monopile for heave and pitch. The design is highly modular and therefore customizable for every project need and MP length. To optimize capex, it is possible to select:

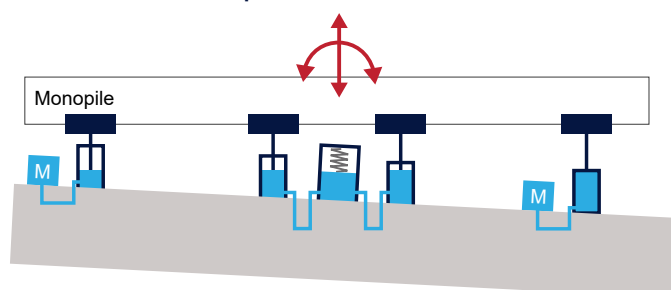
- Pitch compensation only – combination of active cradles and hydraulically (or mechanically) coupled passive cradles
- Pitch and heave compensation, with quick retract option – combination of active cradles and passive cradles coupled to accumulators

By design, the weight of the MP's is smartly separated from the active system, drastically reducing power requirements for the active system. Furthermore, the cradles can easily fold down, allowing for easy skidding and loading of other MP's stored on deck of the supply vessel.

Pitch Compensation



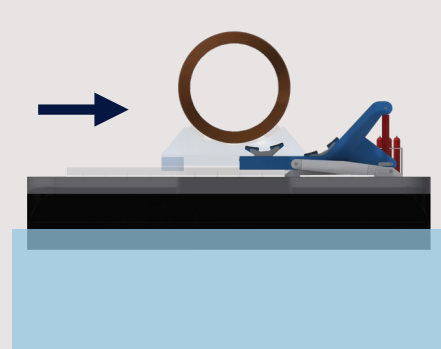
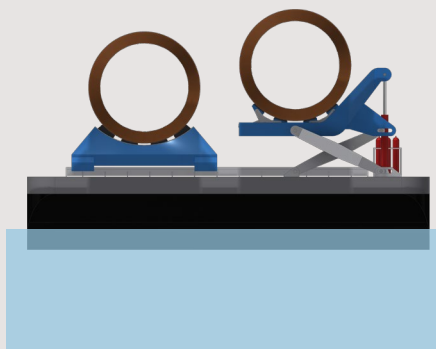
Pitch and Heave Compensation



KEY FEATURES

- Lower OPEX with increased workability for offshore MP feedering
- Pitch compensation and optional heave compensation (incl. quick retract)
- Adaptable for project specific requirements, e.g. different supply vessels, jack-up or HLV and different MP lengths
- Smart compensation techniques with optimized power requirements
- Smart single compensation line allowing skidding of MP's within crane reach

Monopile Loading Procedure



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