

HEAVYLIFT@SEA – Floating Foundation Installation Vessel FFI 1700

The Hamburg based engineering & design company HeavyLift@Sea presents the advanced **Floating Foundation Installation Vessel FFI 1700** suitable for deep water installation of large monopiles, jackets and tripods.

With the dimensions of 165m length and 43,5m width the purpose-built FFI 1700 provides a large 130m long, unobstructed, high strength working deck for stowing 4 x XL-Monopiles up to 100m length, 10m diameter and 1500t weight. Additional cargo, such as transition pieces, towers etc. is safeguarded on deck. Grouting equipment is stowed below deck. The deadweight of the FFI 1700 is 14.500t.

The FFI 1700 is designed for optimal sea going capabilities during transit and heavy lift installation work. The speed of more than 13 knots is achieved by a diesel-electric propulsion system consisting of three (3) main gensets of 5,000 kW, three (3) auxiliary diesel engines of 595 kW and three (3) Azimuth-Thrusters of 3500 kW each. Exact positioning and station keeping is controlled by a DP 2 system in combination with three (3) bow thrusters of 1750 kW each and the Azimuth-Thrusters.

The FFI is equipped with a powerful heavy lift offshore crane of SWL 1700t making the FFI 1700 destined for heavy lift installation works.

The wire-luffing heavy lift offshore crane is supplied by daughter company MATE@SEA and specified with the following load steps:

- 1700 t @ 12 m – 30 m
- 1000 t @ 12 m – 50 m
- 500 t @ 12 m – 100 m

Optionally a second auxiliary crane can be installed for further lifting assistance.

These days the erection of offshore wind farms involves driving large-diameter steel monopiles into the seabed. In the process, the heavy lift offshore crane lifts a pile from deck and lowers it into position. After positioning, a steam or hydraulic powered hammer piles the monopile into the seabed.

In order to avoid any impermissible inclined position of the pile while hammering, the pile is fixed in vertical position. Therefore the FFI 1700 utilizes a pile gripper. The pile gripper is a pile guidance system that basically consists of a lifting frame welded to the deck and hydraulically driven arms embracing the pile and enabling heavy structural work with precision control.

Furthermore, the FFI 1700 prevents different measures for a satisfactory stay on board:

- 80 single cabins, including 9 single be apartments, 70 single cabins and 1 owner / pilot cabin
- Different leisure facilities
- Very little motion of the vessel

HeavyLift@Sea provides an advanced and well thought out floating foundation installation vessel design that fulfils all the technical and operational requirements to effectively service the stakeholders in the offshore installation market:

- Optimized deck layout, huge unobstructed working deck
- Stowage of
 - 4 x Monopiles up to 100 m length
 - 4 x Monopiles up to 10 m diameter
 - Additional equipment below deck
 - TPs, towers etc.
- Powerful offshore crane of SWL 1700t and outreach of 100m
- Optionally an auxiliary crane for assistance
- Pile gripper for advanced and secure installation
- Independence of water depth and sea bed condition
- Installation work in DP 2 mode

For further information regarding engineering & design of offshore and heavylift multi-purpose vessels visit **HeavyLift@Sea**:

www.heavyliftatsea.de.

For associated equipment solutions please visit the website of our subsidiary **MATE@SEA**:

www.mate-at-sea.de