neptune
offshore access system

STL RESEARCH

Neptune 20M+

Fully motion-compensated personnel-transfer system and light crane

The Neptune 20M+ system enables transfer of personnel or cargo from a vessel to a fixed offshore structure with full motion-compensation so that all wave-induced motions are removed and the payload arrives at the target structure with no relative movement between them.

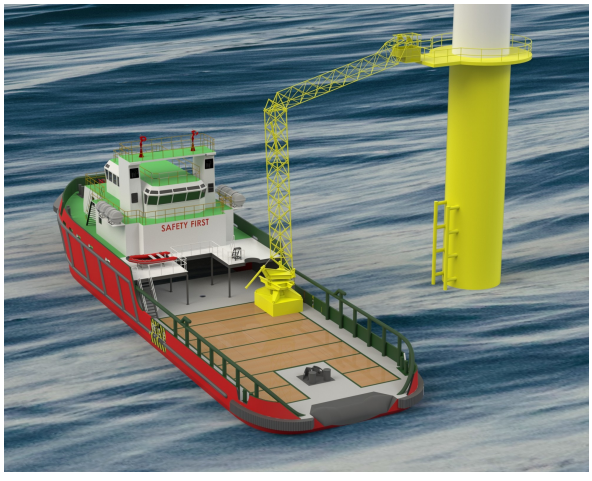
PRINCIPLE: A stand-alone piece of equipment that can be installed on a suitable vessel and operates without requiring any vessel services or data, except for the optional use of ship-generated electrical power.

DESCRIPTION: An articulated two-section arm is mounted on a foundation containing a slew-ring and a gimbal-base. It carries a gondola for personnel transfer or a container for cargo. The slew-ring, gimbal, and arm sections are moved hydraulically under computer control to remove all wave-induced motions from the gondola or cargo.

OPERATING WINDOW: Simulations have proven Neptune 20M+ capable of operating at Hs = 3 m even on smaller vessels, for example on a 54 m mono hull and a 36 m catamaran.

SPECIFICATION:

Maximum height capability	22 m above deck	
The operating height can be increased by mounting the unit on a pedestal.		
Maximum reach	22 m	
Vessel stand-off	typically 10 m	
Slewing capability	315°	
Station keeping accuracy	± 10 cm	
Maximum motion compensation ability:		
Heave	5 m	
Roll	± 12°	
Pitch	± 12°	
Yaw	± 12°	
Sway	± 2 m	Sway and Surge: in addition to
Surge	± 2 m	a 3 m radius watch keeping circle

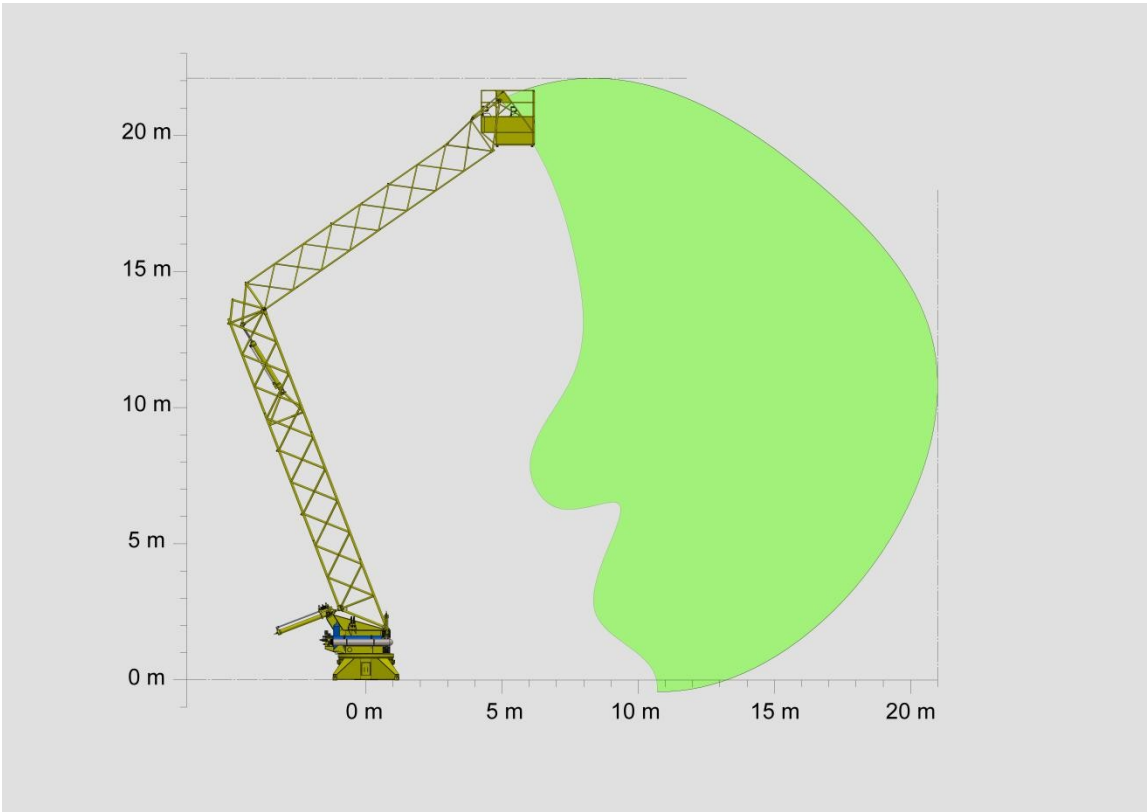


Weight	11.3 t (excl. hydraulic power unit)
Foundation footprint	2.5 m x 3 m
Hydraulic power unit	150 kW (diesel or electric)
No. of personnel transferred	3 (or 2 + stretchered casualty)
Payload in personnel mode	500 kg total maximum
Payload in crane mode	1000 kg maximum
Station keeping required	3 m radius watch keeping circle

NOTES:

Motion compensation figures are with 5 sec period and are the maximum values achievable.
Maximum motion-compensation movements cannot all occur simultaneously.
Performance limits require computer modelling with ship-motion prediction.

OPERATING ENVELOPE:



SAFETY:

Design for safety is a key principle and is achieved in the following ways:

- No single failure causes a hazardous situation
- All critical components are duplicated with automatic switch-over
- Reserve power (accumulators) enables system recovery in the event of power-supply failure
- Self-stowing when needed
- Personnel in gondola are seated with safety harnesses
- No dependence on ship's systems or data

CERTIFICATION:

Designed to the requirements of DNVGL-ST-0378 Standard for offshore and platform lifting devices.
Certification available to this or other equivalent classification society standards.
Conforms to HSE recommended ± 10 cm movement envelope.

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