PALFINGER

OFFSHORE PASSENGER TRANSFER SYSTEM (OPTS)

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The PALFINGER Offshore Passenger Transfer System introduces a new approach to transfer both personnel and cargo based on a very cost-effective solution. As the far most weight-optimized system available, it is also capable to be used and installed on smaller vessels. With a weight of only 17 tons (fixed installed version), the system is fully capable of being installed and operated from a small SOV, and also meets the operational requirements onboard a standard SOV.

The OPTS is a passenger transfer system designed to enable the safe and efficient transfer of personnel from a vessel to a fixed offshore installation.

The PALFINGER OPTS is designed for onboard vessel installation. It is actively compensated for vessel motions, minimizing the relative motions of the basket to ensure safe transfer of personnel. The system employs hydraulic actuators for quick and precise control of all functions, and its control system features redundancy to ensure a high level of safety.

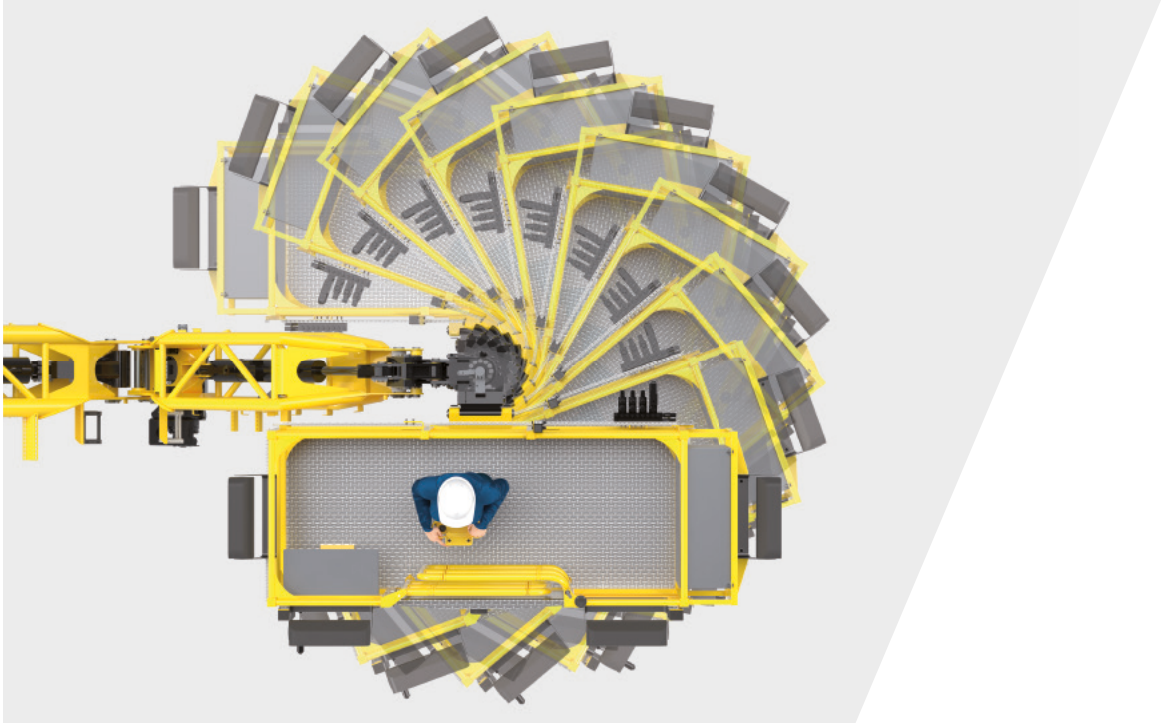
The safe and self-controlled supporting system for moving personnel from a vessel to any kind of offshore structure is an excellent tool to access offshore turbines or other fixed installed platforms offshore. With an outreach of 24 meters (27 meters in non-compensation mode) and the capability of reaching a height of 22 meters (pending on vessel motions), the system meets your operational requirements for personnel transfer and cargo handling in the offshore wind, oil & gas, or other segments. The system is also capable of reaching 1.2 meters (5.0 meters in non-compensation mode) below deck structure onboard the vessel, which gives operational possibilities for rescue purposes.

SYSTEM

The OPTS by PALFINGER is 3D compensated, so it is possible to hold the basket still seen from an outer coordinate system as the vessel moves. The motions are measured in real-time using a MRU system, and the control system uses these signals to control the crane motions in anti-phase to cancel the motions.

This compensating frame compensates for the vessel's roll and pitch, keeping the booms from tilting based on the vessel's relative motions.

The basket is equipped with analogue ultrasonic sensors to detect if fixed objects are near the basket. This acts as an anti-collision system so the basket (and motion compensated “zero” position) automatically moves away from the detected objects if they get close enough. This prevents contact with structures when lifts are made towards wind turbines or fixed installations during decommissioning work.



The OPTS is controlled from the hardwired remote-control unit on deck or from the control station on the basket.

GENERAL TECHNICAL SPECIFICATIONS

Standards		DNV-ST-358 Ed. Sep 2017 (Jul 2022) Offshore Gangways DNV-ST-378 Ed. Jul 2019 (Oct 2021) Offshore and Platform Lifting Appliances
Sea state		Sea State 5 * Hs = 2.5 meters *
Deck motions		Roll ± 6° Heave Up to 4 meters Pitch ± 6° Period T = 6-12 seconds
Personnel transfer time		~60 seconds
Maximum wind speed		20 m/s in operation 63 m/s in parked (sea fastened) position
Operating temperature		Minimum -20 °C Maximum +45 °C
Approx. accuracy		~10 cm
Slewing range		± 200°
Maximum number of persons in basket		600 kg at 24 meters (corresponding to 6 persons including operator)
Cargo lift capacity		1,000 kg at 21 meters CDYN = 2.0
Power requirements		2 x 75 kW at 400VAC 2 x 87kW at 440VAC
E supply	Main power Auxiliary power	440VAC/60 Hz or 400VAC/50 Hz 230VAC/60 Hz or 230 VAC/50 Hz
Weight	Mobile unit Fixed installed unit	27.5 tons (including weight of HPU), 28.7 tons with oil 17 tons (ex. HPU); weight of HPU appr. 5.9 tons (dry weight), 7.5 tons (with oil)
Dimensions	Mobile unit Transport mode Fixed installed unit footprint	40’ x 10’ x 8’ HQ container 40’ x 10’ x 8’ HQ container 2400 mm x 3600 mm (8’ x 12’)

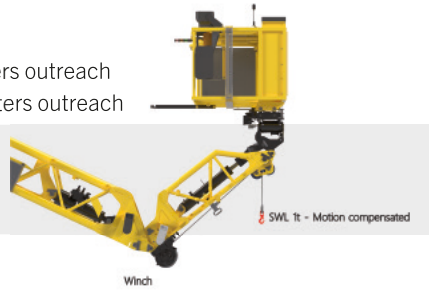
*Deck motion depending on deck position and vessel RAO

PERSONNEL (BASKET) LIFTING MODE

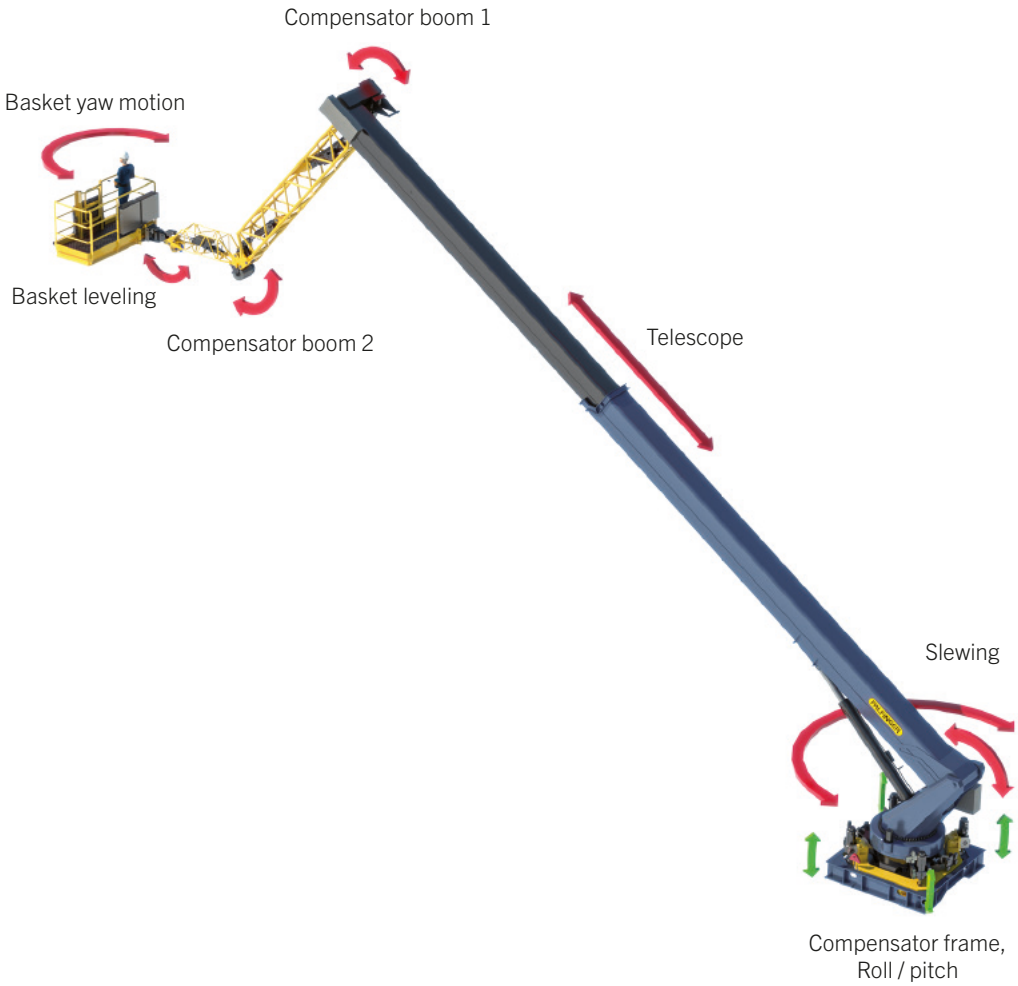
Lifting height above deck	
Non-compensation mode	27 meters from deck level at approx. 11 meters outreach
Comp. mode for max roll/pitch/heave	22 meters from deck level at approx. 14 meters outreach
Outreach	
Non-compensation mode	27 meters from slewing rotation axis
Comp. mode for max roll/pitch/heave	24 meters from slewing rotation axis
Lifting height below deck	
Non-compensation mode	Approx 5 meters from deck level
Comp. mode for max roll/pitch/heave	Approx 1.2 meters from deck level

CARGO HANDLING (CRANE) LIFTING MODE

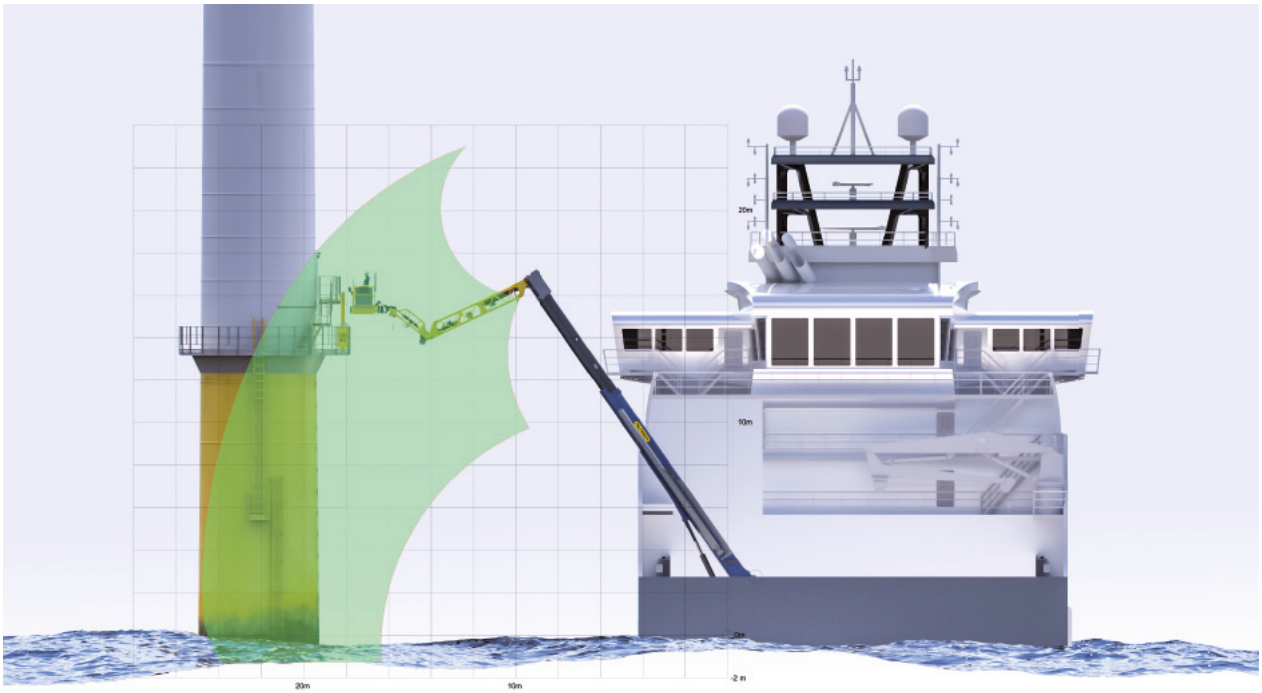
Lifting height above deck	
Non-compensation mode	26 meters from deck level at approx. 9 meters outreach
Comp. mode for max roll/pitch/heave	21 meters from deck level at approx. 12 meters outreach
Outreach	
Non-compensation mode	25 meters from slewing rotation axis
Comp. mode for max roll/pitch/heave	22 meters from slewing rotation axis



MOTION COMPENSATION



OPERATIONAL ENVELOPE COMPENSATION MODE



PALFINGER OPTS CERTIFICATION

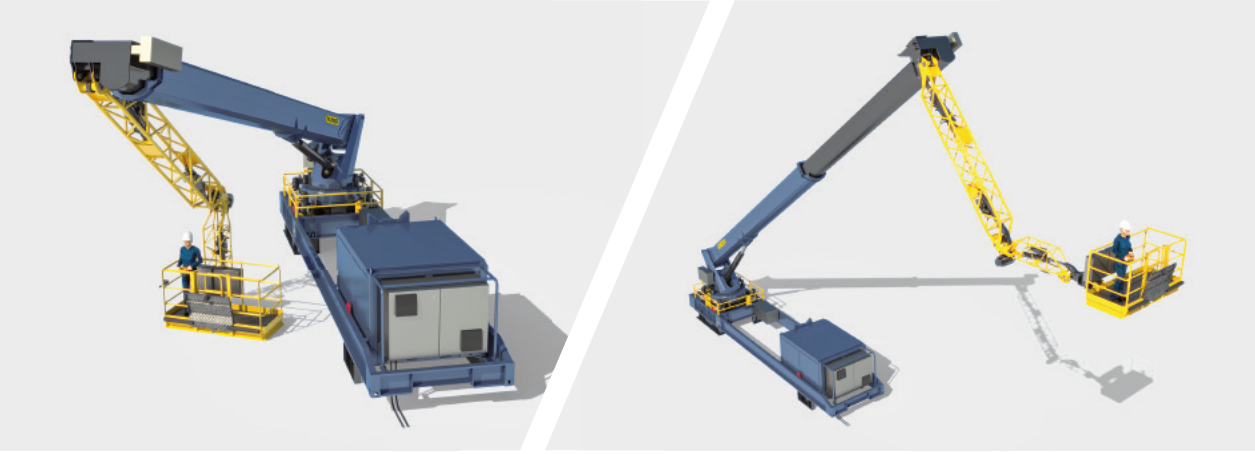
The Offshore Passenger Transfer System is designed, constructed, and tested in compliance with DNV rules for certification of Offshore Gangways (DNV ST-358) and Offshore and Platform lifting appliances (DNV ST-378). By complying with both sets of regulations, DNV determined that the OPTS met the satisfactory criteria for approval in both personnel and cargo operations. This makes the system ideal for personnel and cargo transfer operations at offshore wind farms, for decommissioning work, pilotage, and any kind off access operation offshore.

INSTALLATION

The OPTS is delivered in two versions, both with a very compact footprint:

- **Fixed installed unit**
  This version is for permanent installation onboard a vessel and has a weight of 17 tons with a base frame of 8' x 8'. The HPU is delivered as a separate unit for being installed onboard the vessel at a suitable place below deck.

- **Mobile unit**
  This version is for temporary installation onboard a vessel and has a weight of 28 tons. The mobile unit fits into a standard 40" container making sure that transportations to/from the vessel are handled in a cost-effective way.



HISTORY

PALFINGER acquired the Offshore Passenger Transfer System technology by Lift2Work in September 2021. The Rotterdam-based company was established in 2018 and set up with extensive knowledge and experience in the maritime offshore sector with the aim to develop a mode of smooth and seamless transportation from vessels to offshore platforms.

The OPTS has since the acquisition been fully redesigned based on a steel construction using standard PALFINGER components to meet all requirements from the market. It is now introduced as a unique and innovative solution to take on the booming market of offshore transfer systems.

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