PALFINGER

PALFINGER MARINE

30T AHC SUBSEA WINCH SYSTEM

PALFINGER RENTAL

30T AHC SUBSEA WINCH SYSTEM

CONTAINERIZED STAND ALONE RENTAL UNIT

KEY SYSTEM DATA	
General arrangement drawing	2017-101-01 & 2017-171-04
Zone classification	Safe
Application	Offshore
Drive system	Hydraulic
Maximum lifting capacity	30 tons
Maximum lifting height	2500 meter
Winch operating modes	Normal mode, Constant tension mode and AHC mode
Classification rules	Standard for offshore and platform lifting appliance, DNVGL-ST-0378, May 2016

WINCH CONTAINER CONSISTING OF

- 1 x 30T Subsea AHC winch, in custom built container
- 1 x Wire – 2560 meter ø38mm
- 1 x Piston compensator
- 1 x Nitrogen bottle
- 1 x Operator control stand
- 1 x Spooling device

HPU CONTAINER CONSISTING OF

- 2 x Hydraulic pump stacks
- 2 x Starter cabinets
- 1 x Hydraulic oil tank
- 1 x Winch control system

DECK EQUIPMENT

GENERAL SYSTEM INFORMATION

The AHC winch system is specially designed for load handling from a vessel or a rig towards the seabed, underwater installations or other fixed targets on the seabed. Active heave compensation (AHC) is used to control the relative position of a load to a fixed object. The position is determined by the control system using a real-time signal from a motion reference unit (MRU) as an input. In response to this signal the AHC system will pay in or pay out to keep the load at a constant distance from the seabed or other fixed target.

AHC PERFORMANCE

The AHC performance of PALFINGER MARINE's winches provides strong benefits for the customer. It is considered one of the best systems in the market with the capacity to reduce movements with up to 98%. The drive train has been optimized for the correct speed range necessary and the acceleration capacity is extremely high. The algorithms for AHC are developed and tested by experienced engineers to perform in the best possible way together with the secondary controlled system.

WINCH FEATURES

The drive system uses the latest available hydraulic technology and smart system design to re-generate energy as effectively as possible during operation. This means that installed power is very low compared to the AHC performance and available hoisting speeds. The winch is also equipped with functions such as variable constant tension, suction lift-off and cruise control to aid the operator in the best possible way. The winch and HPU containers are made for easy mounting to vessel deck. The steel construction is prepared with options for bolting or welding and wire routing can be optimized in several different ways depending on vessel layout and requirements.

SYSTEM SPECIFICATIONS

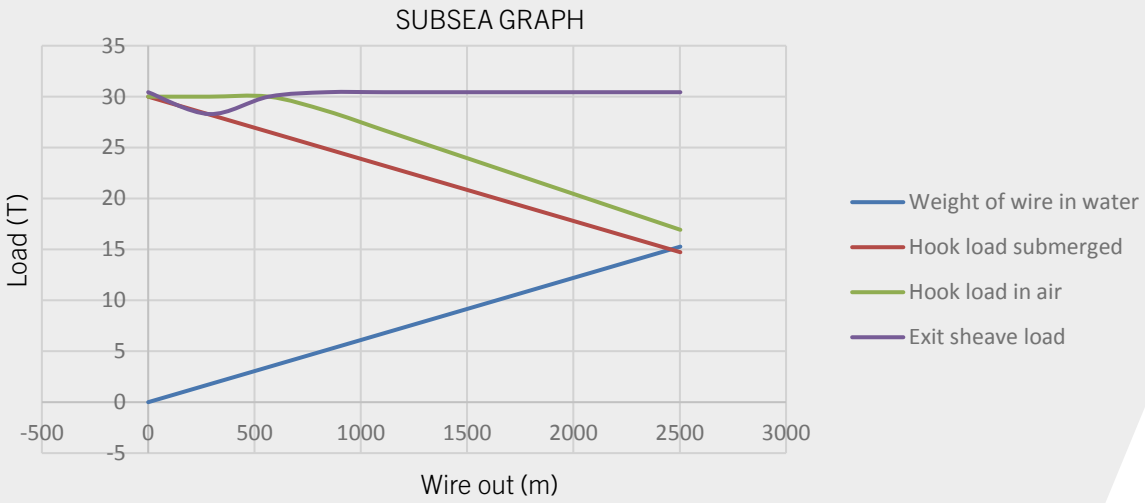
Classification rules & Standards

Classification rules	DNVGL, Standard for offshore and platform lifting appliance, DNVGL-ST-0378, Edition May 2016

Environmental conditions

Design temperature	To minus 20 degrees Celsius
Ambient temperature	From minus 20 to plus 45 degrees Celsius

LIFTING CAPACITY AT DIFFERENT DEPTHS - SUBSEA



"Hook load submerged" is the maximum allowed force that can be applied in the hook at this depth.
"Hook load in air" means that a solid steel clump of the indicated weight can be taken down to this depth.
"Exit sheave load" is the force acting on the cranetip or a-frame exit point when the maximum possible load is applied for each depth.

AHC Performance

AHC SWL	HEAVE AMPLITUDE	WAVE PERIOD	REQUIRED HOISTING SPEED	REQUIRED ACCELERATION	COMMENTS
30 t	+-3.2 m	10 sec	121 m/min	1.26 m/s^2	Inner layer, worst case

Main lift data

LIFT TYPE	PERFORMANCE
Harbour lift	30 tons
Deck lift	30 tons
Subsea lift (incl. AHC)	30 tons - 0-568 meters depth
Subsea lift (incl. AHC)	23 tons - 1611 meters depth
Subsea lift (incl. AHC)	17 tons - 2500 meters depth
Lifting speed 1	0-30 m/min @ 30 tons
Lifting speed 2	0-120 m/min @ reduced load

Power supply – S1-100 % CD

DESCRIPTION	REQUIRED	RATING
Main power, HPU Electric motor No. 1	150 kW	153 kW
Main power, HPU Electric motor No. 2	150 kW	153 kW
Total power consumption	300 kW	306 kW
Voltage/Cycle/Phase (AC)	690 / 60 / 3	
Starter type	Soft starter	

Main winch

Operating modes	Normal, CT and AHC
Wire drum	Grooved (Lebus type)
Wire diameter	ø 38mm
C/C outer layer	ø 2421mm
Inner layer, max load	30 t
Outer layer, full load	30 t
Wire spooling + spooling device	Lebus sleeve and cylinder operated spooling device.
Brakes	Multi-disk fail safe brakes
Main hook / load block	Subsea hook with weight
Hoisting speed	Load dependent speed

Safety systems

Monitoring & Alarm system
Emergency stop system
MOPS – Manual Overload Protection System
AOPS – Automatic Overload Protection System
Load limiting system
Logging systems
Remote access system
Load holding device in case of hydraulic pressure drop
Fail safe multi-disc brakes
Automatic hook stop in upper and lower stop positions

Control system

Advanced control algorithms for closed loop control
Complete monitoring system for electric and hydraulic systems
Operators console

HMI with all necessary status and position information incl.:	
Lift Main page	Monitoring page – Sensors
HPU Main page	Monitoring page - Winch
Setup Main page	Monitoring page - Lift
Service Main page	Monitoring page – Hydraulics
Service Calibration page	Alarm page

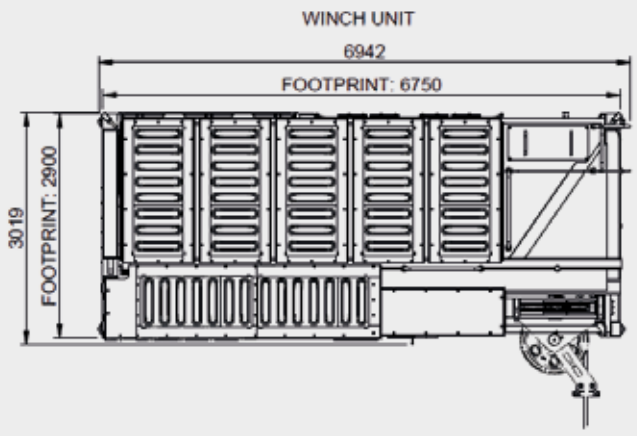
Weights

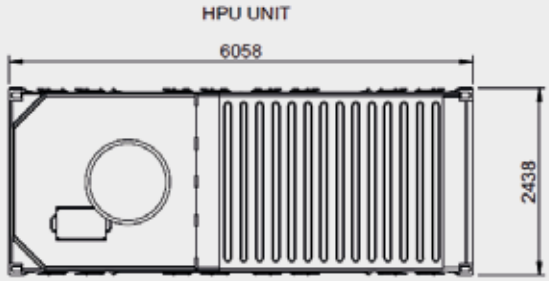
Weight of winch container without wire	30 000 kg
Weight of wire	18 400 kg
Winch Container Total	48 400 kg

Weight of HPU container	13 500 kg
Weight of oil	900 kg
HPU Container Total	14 400 kg

Total weight of system	**62 800 kg**

MAIN DIMENSIONS AND FOOTPRINT





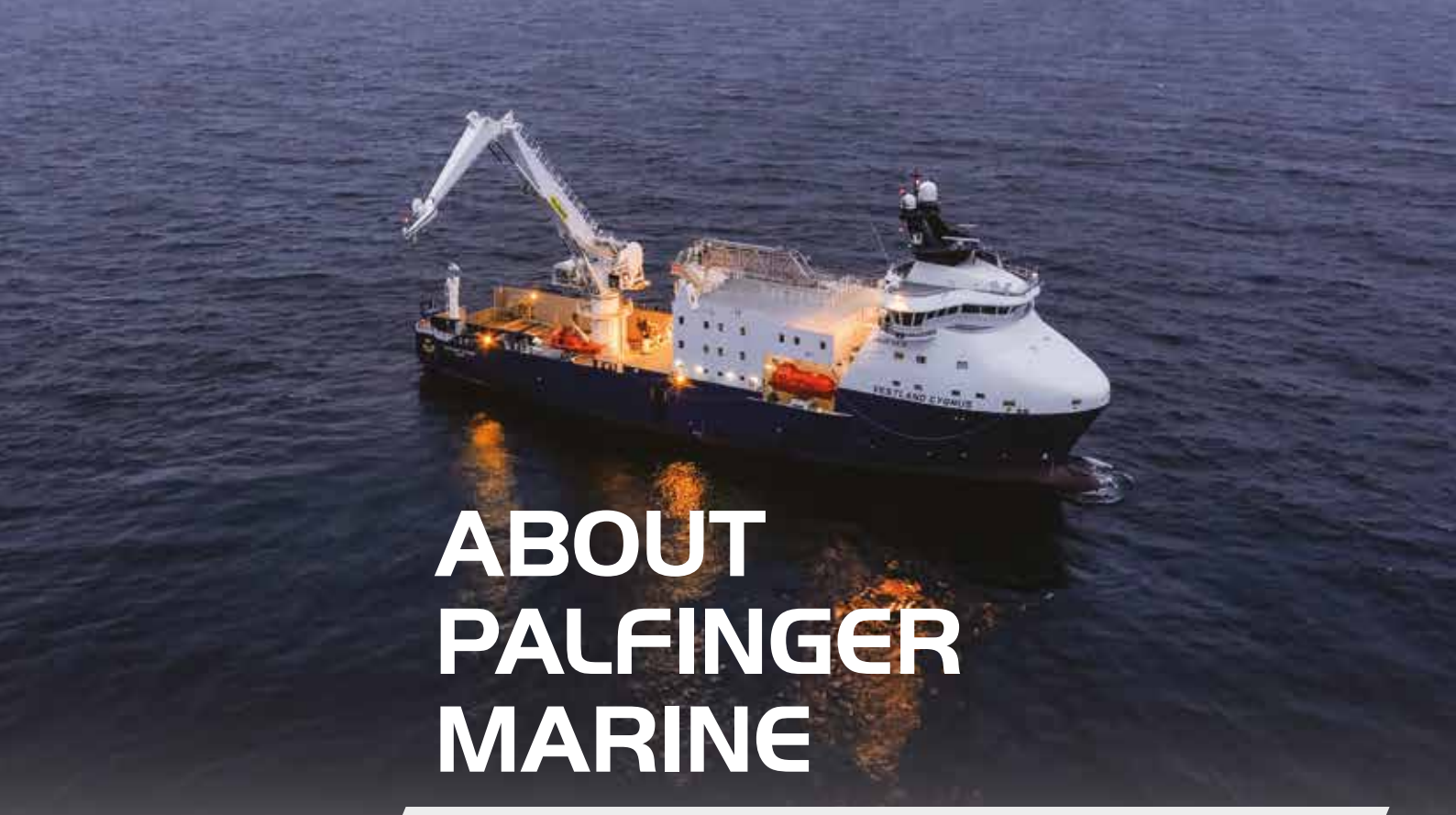
AUTOMATED WIRE SPOOLING

Lebus sleeve + cylinder operated spooling device ensures proper wire spooling. Spooling monitored in winch control room CCTV.

WINCH & HPU MODULES DURING FACTORY TESTING

WINCH MODULE

CONTROL ROOM / HPU MODULE



ABOUT PALFINGER MARINE

As a global partner for innovative and reliable deck equipment and lifesaving appliances, PALFINGER supplies high-quality products to fulfill standardized and customized demands. Supported worldwide by a network of experienced and skilled specialists, we provide flexible and efficient service solutions. Our portfolio gives a competitive edge for customers in the maritime and offshore industry. PALFINGER provides lifting and handling solutions to all major maritime segments, including offshore, marine, cruise, navy and coast guard and wind.

For many years PALFINGER has been one of the world's leading manufacturers of innovative lifting solutions for use on commercial vehicles and in the maritime field. As a multinational group with approx. 11,000 employees, the PALFINGER Group generated total sales of approx. EUR 1,616 million in 2018. The Group has manufacturing and assembly facilities in Europe, CIS, North and South America, as well as Asia. The pillars of its corporate strategy are innovation, internationalization, enhanced flexibility of products, services and processes, and PALFINGER 21st (the development of smart solutions and innovative, data-based business models). PALFINGER is regarded not only as the market leader, but also the technology leader, in the global market for hydraulic loader cranes. With a network of more than 5,000 sales and service centres located in over 130 countries across all continents, PALFINGER is always in proximity to its customers.

DECK EQUIPMENT

Palfinger Marine Norway AS
Nesttunbrekka 97
5221 Nesttun, Norway

E rental-winches@palfinger.com
T +47 55 20 20 10

PALFINGERMARINE.COM