TECHNICAL SPECIFICATION

Length over all ..................... 83.00 m
Deadweight .................. 3500 tonnes
Deck area ......................... 670 m²
Speed ......................... 15.6 knots
Bollard pull ...................... 180 T

DESIGN HIGHLIGHTS

- Based on proven design, and all products proven in other systems and references.
- Easy and safe to operate with seamless load sharing due to 4 medium speed engines and mode selection in PMS.
- Reduced risk, Integration between the products and design secures the construction, performance and operation.
- Flexibility in selection of AHTS equipment/suppliers.
- Low cost (Capex and Opex) due to the equipment solution.
- Increased Reliability and redundancy without adding additional components.
- Reduced emissions and fuel consumption due to the system that enables optimum engine loads.
HYBRID PROPULSION SYSTEM
The combined diesel-mechanic and diesel-electric propulsion system with 2-speed gear improves the efficiency when the operational profile contains modes with varying loads.

The possibility to generate power from both main engines and gen-sets will result in benefits at low load, where the engines are optimised for these loads.

At higher loads, the direct driven mechanical part will have low transmission losses.

MAIN ACHIEVEMENTS
Low cost (Capex and Opex) due to the equipment solution. The building cost will be comparable to a Diesel Mechanic 4 engine solution.

Increased reliability and redundancy without adding complex components.

Low fuel consumption/emissions
System enables optimum engine loads
- Electric propulsion in low power modes.
- Electric boost in high bollard pull modes.
- Steaming on both main propellers from one main engine or gen-set.
- Seamless load sharing due to 4 medium speed engines and mode selection in Power Management System.

System enables increased propeller efficiency: Low propeller rpm (step 2) in low power modes.

Based on proven design and technology: All products proven in other systems and references.

Flexibility in selection of AHTS -equipment/ suppliers.

Easy and safe to operate: Seamless transfer from one operational mode to another. No loss of PTO power when changing propeller speed.

Reduced risk: Integration between the products and design secures the construction, performance and operation.

2-SPEED GEAR
- Fuel saving by operating the CPP at low rpm.
- Reduced propeller speed without affecting nominal engine and/or PTO speed.
- Proven technology with extra functionality.
- Power range 2-13 MW.
- Twin screw AHTS: Bollard pull capacities up to 220 tBP.
**FUEL SAVINGS**

Compared to twin engine Diesel-Mechanic Propulsion System this Hybrid 2-speed system will give a reduction of up to 17% in fuel consumption. When adding the efficient hull lines we reach fuel savings up to 25%.

Alternative systems evaluated:
- Diesel-Mechanic 2 engines
- Diesel-Mechanic 2-speed gear
- Diesel-Mechanic 4 engines
- Hybrid and 2-speed PTI gear system

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**Comparison (%)**

<table>
<thead>
<tr>
<th></th>
<th>DM - 2 eng</th>
<th>DM - 2 speed gear</th>
<th>DM - 4 eng</th>
<th>Hybrid - 2 speed gear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total installed engine power (kW/m)</td>
<td>100.0%</td>
<td>100.0%</td>
<td>103.2%</td>
<td>101.8%</td>
</tr>
<tr>
<td>Total energy consumption per year (MW/h)</td>
<td>100.0%</td>
<td>88.6%</td>
<td>100.0%</td>
<td>88.6%</td>
</tr>
<tr>
<td>Engine running hours per year (Hours)</td>
<td>100.0%</td>
<td>100.0%</td>
<td>124.4%</td>
<td>92.7%</td>
</tr>
<tr>
<td>Total fuel consumption per year (Ton)</td>
<td>100.0%</td>
<td>89.6%</td>
<td>97.1%</td>
<td>83.3%</td>
</tr>
</tbody>
</table>
**MAIN DIMENSIONS**

Length over all ........................................ 83.00 m
Length between p.p. .................................. 74.60 m
Breadth moulded ......................................... 20.00 m
Depth to 1st Deck ........................................ 8.50 m
Design draught ............................................ 6.00 m
Summer draught ........................................... 7.00 m

**CAPACITIES**

Deadweight ................................................. 3500 tonnes
Deck area .................................................. 670 m²
Rig chain / Locker ........................................ 400 m³
Fresh water .................................................. 600 m³
Fuel Oil ...................................................... 1100 m³
Dry bulk ....................................................... 200 m³
Liquid mud ................................................... 720 m³
Brine .......................................................... 400 m³
Base oil ....................................................... 800 m³
Ballast water / Drillwater ............................... 1500 m³

**CLASS**

ABS: +A1, Offshore Support Vessel (AH, TOW, Supply, HNILS), HDC (10t/m², 50t/m²), HLC (2.8 t/m³), +AMS, DPS-2, Circle E, ENVIRO, GP, MLC-AC- COM, UWILD, ACCU, BWT

**MACHINERY AND PROPULSION**

Main Engines Wärtsilä 6L32 ......................... 2 x 3230 kW
Main Generators Wärtsilä 8L26 ...................... 2 x 2495 kW
Emergency generator .................................... 1 x 104 kW
Fwd. tunnel thrusters ................................... 2 x 830 kW
Aft. tunnel thrusters ..................................... 2 x 600 kW
CP propellers in nozzle ................................. 2 x dia. 4.0 m

**ACCOMMODATION**

State cabins ................................................. 3
Single cabins ............................................... 16
Double cabins .............................................. 2
Four persons cabins ...................................... 2
Total ......................................................... 31 persons

**DECK EQUIPMENT**

Deck crane: Hydraulic knuckle boom .......... 3 t @ 15 m
Auxiliary crane for AHT Equipment .......... 2 t @ 15 m
Anchor handling & Towing winch .......... 300 - 400 T

**REFERENCE**

Design ID .................................................. WSD 4628 AHTS
Reference number: ..................................... 5064