1 General

1.1 Description and Purpose

The wind turbine installation vessel shall be designed as unself-propelled steel vessel with four spud legs. One (1) full reversible hydraulic crane with maximum lifting capacity of 700 tons and lifting height 120m (over main deck) shall be equipped at the fore part for lifting and piling work. To help the vessel move at the working area, two (2) set of 710kw full reversible rudder propeller to be equipped on the aft part and another two (2) set of 450kw full reversible rudder propeller to be equipped at the fore part. Four (4) sets of 750kw generator sets shall be equipped in the engine room to supply power for the whole vessel. One (1) more air-cooled harbour generator to be supplied.

The vessel is used for coastal sea wind turbine installation which including foundations installation, strut tower and turbine as well as blades lifting, and piling.

Foundation reinforcement shall not be included in the hull part.

1.2 Design Ambient and Geological Condition

The vessel is suitable for coastal sea, non-iced area. The water depth when working is 3.0-25 meters (including tidal range). It can enter the working area when high tide if the water level is too low.

1.2.1 Ambient Temperature

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Temperature</td>
<td>-10°C ~ +40°C</td>
</tr>
<tr>
<td>Sea water Temperature</td>
<td>0°C ~ +32°C</td>
</tr>
</tbody>
</table>

1.2.2 Design sea condition

(1) Normal working condition

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind velocity</td>
<td>13.8m/s</td>
</tr>
<tr>
<td>Wave height</td>
<td>3m</td>
</tr>
</tbody>
</table>
Wave period 7s
Surface velocity 3kn

(2) Self-existent condition
Wind velocity 36m/s
Wave height 5m
Wave period 8s
Surface velocity 3kn

(3) Moving Condition
Intact stability 51.5m/s
Damaged stability 25.8m/s

1.2.3 Anti-ice Capability
Woking in non-ice period

1.3 Rules, Regulations, Classification and Certificates

1.3.1 Rules and Regulations
The vessel shall be designed and built to fulfill following rules and regulations in force:

1) Main rules, regulations, and Conventions
   - CCS《Rules For Lifting Appliances Of Ships And Offshore Installations 2007》
     and its amendments;
   - CCS《Rules Of Classification Of Mobile Platform (2005)》;
   - CCS《Rules For Materials And Welding 2009》 and its amendments;
1.3.2 Classification

Class Notation: ★CSA Self-elevating, Offshore Wind Turbine Service Unit, Lifting Appliance, Service Area Restricted (Shallow Water)

1.3.3 Certificates

- Offshore Mobile Platform Classification Certificate
- International Loadline Certificate
- International Tonnage Certificate (1969)
- Safety Certificate for Offshore Mobile Platform
Register Book for Examination and Inspection of Ship hoisting and Cargo Lift Equipment
IOPP Certificate
International Sewage Pollution Prevention Certificate
International Air Pollution Prevention Certificate
Statement of Garbage Pollution Prevention from Ships
Statement of Compliance under the International Convention on the control of Harmful Anti-fouling Systems on Ship

1.4 Design Principle

1) Designed as per rules and regulations of China MSA and CCS;
2) General performance as per the principle of combination of advantage and applicability;
3) The Principle of combination of reliability, safety and innovation;

2 General part

2.1 Vessel type and service area
The vessel was designed as non self-propelled wind turbine installation vessel with four (4) spud legs and working at coastal sea area.

2.2 Principal Dimension

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenth overall</td>
<td>~140.00m</td>
</tr>
<tr>
<td>Lenth moulded</td>
<td>89.90m</td>
</tr>
<tr>
<td>Breadth moulded</td>
<td>39.00m</td>
</tr>
<tr>
<td>Depth moulded</td>
<td>6.60m</td>
</tr>
</tbody>
</table>
Design draft: 3.30m
Working depth: 25.0m
Working area: coastal sea
Endurance: 30 days
Complement: 43 men
Move speed: ~5kn
Deck loading: 12t/m²
Spud leg dia: 3.3m
Spud leg length (incl. pile shoe): 60.00m
Longitudinal centerline space of spud legs: 55.2m
Transverse centerline space of spud legs: 29.9m
Spud leg number: 4
Variable loading (incl. oil & water):
Working condition: ~1600.00t
Pre-press, hoisting condition: ~1600.00t
Self-existence condition: ~1600.00t
Towage Condition: ~1600.00t
Light vessel draft: ~2.5m
Light vessel towage draft (Variable loading ~650t): ~2.7m
Full loaded towage draft (Variable loading ~1600t): ~3.0m

2.3 Tankage

Fresh water tank: ~400m³
Diesel oil tank: ~500m³
Ballast water tank: ~7900m³
2.4 Stability

Intact stability when full loaded towage to be checked as per wind velocity at 51.5m/s
Damaged stability when full loaded towage to be checked as per wind velocity at 25.8m/s
Overturning stability when Jack-up to be checked as per ambient condition and loading condition under working mode and self-existent mode.

2.5 General arrangement

2.5.1 Tanks

The hull part of this vessel is divided into several compartments by three (3) continuous longitudinal bulkheads, seven (7) continuous transverse bulkheads and some small bulkheads.

2.5.2 Main deck

The main deck is divided into hoisting area and accommodation area (five layers of deckhouses) from the aft part through to the fore part.

2.5.3 Deckhouse

First layer of the deckhouse (main deck) to be arranged with: galley, messroom, emergency generator room, refrigeration store, sanitary room, stairway, pipe tunnel, painting store, ethyne room, oxygen room, CO₂ room, engine room casing.

Second layer of the deckhouse (A deck) to be arranged with: canteen, stairway, sanitary room, meeting room, six (6) double rooms, pipe tunnel, sanitary room, changing room, laundry room, etc.
Third layer of deckhouse (B deck) to be arranged with: six (6) double rooms, three (3) four-man room, sanitary room, stairway, pipe tunnel, laundry room, etc.

Forth layer of deckhouse (C deck) to be arranged with: captain room, captain’s bedroom, chief engineer room, chief engineer’s bedroom, project manager room, project manager’s bedroom, owner representative room, owner representative’s bedroom, three (3) sigle rooms, sanitary room, etc.

Fifth layer of deckhouse (D deck) to be arranged with central control room, battery room, and chager and discharge room.

2.6 Working scheme of the vessel

2.6.1 Wind turbine installation

2.6.2 Clustered piling on fore part of the vessel

2.6.3 Single piling on fore part of the vessel

3 Structure Part

3.1 Main structure general

The vessel is single deck, single bottom, and full-welded steel structure. The main structure of the vessek is box-shaped which is devided by longitudinal and transverse bulkheads into compartments with deifferent functions.

The deck, bottom, side and longitudinal bulkheads of the main structure are designed as longitudinal frame structure.
3.2 **Design principle of structures**

The structure will be designed according to the requirements of CCS《Classification and Building Rules for Offshore Mobile Platform (2005)》.

3.3 **Construction material of Structure**

Mild steel (σy=235MPa) to be used at the part of deckhouse and main hull structure.

High tensile steel H36 (σy=355MPa) to be used on the strengthened structures.

3.4 **Designed structure load**

Main deck working area (incl. exposed deck)  12t/m²

4  **Outfitting Part**

4.1 **Anchor and Mooring Equipment**

4.1.1 Anchor equipment

The vessel shall be equipped with seven (7) set of anchors and anchor wires.

4.1.1.1 anchor Winch

The vessel shall be equipped with six (6) 250KN hydraulic winch.

4.2 **Towage Equipment**

4.2.1 Towing eye plate and fairlead

Towage appliance of the vessel shall be designed according to the requirement of relevant rules.

4.3 **Signal Equipment**

4.3.1 Mast

One (1) signal light mast to be arranged on the top of the compass deck.
4.3.2 Side light and name plate

Name plate and side light frame to be arranged on the both side of the top of the compass.

4.3.3 Stern anchor light pole

A stern light pole to be arranged on the aft part of the main deck.

4.4 Life saving and fire fighting appliance

4.4.1 Life boat and davit

The platform shall be equipped with two (2) totally enclosed type;ife boat, each with capacity of 50 persons.

4.4.2 Lifeaft

Three (3) sets of 15 men free fall inflatable liferaft to be arranged on each of the side of the main deck.

4.5 Ladders, rails, manholes and hatch covers

4.5.1 Ladders

Each deck outside the cabins shall be equipped with inclined steel ladders.

4.5.2 Rails

Each deck outside the cabins shall be fitted with steel rails with height of 1000mm.

4.5.3 Manholes and hatch covers

Oil tighted manholes shall be arranged for oil tanks.
4.6 Hull protection

4.6.1 Painting

The anti-fouling of the painting system for this vessel shall be arranged as five (5) years.

Pre-treatment

Before cutting hull components, the surface of the steel plates and profiles shall be pretreated.

Others

The color of painting at various spaces shall be decided by the owner.

4.6.2 Impressed current protection system

The shell of the hull of the vessel shall be protected by impressed current system. Enough numbers of high quality sacrified zinc anodes shall be arranged in the ballast tanks under the draft. The protection life shall be three (3) years.

4.7 Rubber fender

Both sides of the vessel shall be protected by D type rubber fender.

4.8 Cabins upholstery

4.8.1 General

All the lining board, lining division, air damper, ceiling and insulation material for the cabins in accommodation space, public space, service space and control station of the superstructure shall be used with non-combustible material.

5 Machinery part

5.1 General

The vessel is designed as wind turbine installation and hoisting vessel which is used install offshore wind power generation equipment.
5.1.1 Ambient condition

Except for otherwise statement, the capacity of machinery shall be decided according to following ambient condition:

Temperature in engine room       45℃
Temperature of sea water        32℃
Absolute air pressure      0.1MPa
Ambient temperature      -5℃

5.1.2 Rudder propeller

The effective output of the main engine shall be tested by dynamometer. The test content and the overhaul inspection shall be submitted for approval of owner and CCS. The test record shall also be submitted to owner.

5.1.3 Diesel generator set

The test content and the overhaul inspection shall be submitted for approval of owner and CCS. The test record shall also be submitted to owner.

5.1.4 Painting

Except for otherwise stated, the color of the equipment in the engine room shall as per to the requirement of the owner.

5.2 Functions and data for machineries

5.2.1 Generator set

The vessel will not be equipped with main propelling diesel engine. Four (4) generators with capacity of 800kW shall be equipped for power supply to the rudder propeller and other equipment for short distance remove of the platform when working. One (1) harbour generator with capacity of 250kW to be equipped for power supply of the whole vessel when in harbour. One (1) emergency generator with capacity of 65kW to be equipped for power supply of the whole vessel at emergency occasions. Detail working schedule of the power supply station refer to the electrical drawings.
5.2.2 Propelling equipment

Two (2) rudder propellers to be installed on both fore and aft part of the vessel to supply propelling power when the vessel is moving in the working area.

5.2.3 Auxiliary equipment

Auxiliary equipment shall include daily service compressor, diesel oil separator, pumps, sewage water treatment, bilge oily water separator, fans and workshop equipment, etc. For detail specification, data and quantity refer to the equipment list.

5.2.3.1 Compressor

Main compressor is two-stage compression, reciprocating type and electrical motor driven.

5.2.3.2 Pumps

All the pumps shall meet maritime requirement.

5.2.3.3 Fans

Ventilation fan shall be column shaped casing with impeller and motors inside. Fans and driven motors are integrat part in the casing of the fans.

5.2.3.4 Bilge oily water separator

Bilge oily water separator shall meet the requirement that the oil content in the bilge water less than 15mg/L.

5.2.3.5 Sewage treatment plant

The sewage treatment plant shall be of biochemical process type and satisfy the requirement of 43 men.

5.2.3.6 Fresh water and sea water pressure tank

Fresh water and sewage water pressure tank shall be of vertical column shaped tanks. The pressure tanks are all welded structure by steel plates.
5.2.3.7 Air receiver
The air receiver shall be round shaped steel welded structure.

5.2.3.8 Oil tanks
All of the oil tanks shall be suitable strengthened fully welded steel structure.

5.3 Piping and equipment

5.3.1 General

5.3.1.1 General principle
The arrangement of piping shall consider accessibility and dismountability as far as possible.

5.3.1.2 Sea chest and drainage opening overboard
One (1) sea water manifold with a high and a low sea water chest to be arranged in the engine room.

5.3.1.3 Pipes, connections and accessories
All the external diameter of seamless steel pipes shall be according to the shipping industrial standard (CB3075—87).

5.3.1.4 CO₂ fire fighting piping
The vessel shall be arranged with CO₂ fire fighting system including CO₂ bottle sets and discharge box etc. for extinguish the fires in the engine room, pump room, hydraulic pump station and emergency generator room.

5.3.1.5 Drainage piping on decks
The drainage without oil on each deck shall accumulate in the mainifold and discharge out of board directly.

5.3.1.6 Tank level gauging system
Fresh water tanks, ballast tanks, diesel oil tanks and lub oil tanks as well as draft on the four corners of the vessel need to be furnished with tank level gauging system.

5.3.1.7 Water supply piping
The vessel to be arranged with one combined sea pressure chest with capacity of 1m$^3$ including sea pressure tank and two sea water pump that can be standby of each other.

5.3.1.8 Cabins Drainage Piping and Sewage Water Treatment Piping
The cabins drainage will flow into the sewage water treatment appliance or the sewage water storage tank after collection in the manifold from each drainage branch. Sewage water mainly means the flush water of the toilets and the drainage in the toilets. Grey water in the hospital and the dirty waters of sanitary appliance shall be discharged into the sewage water treatment appliance.

A sewage water treatment appliance of 43 persons shall be arranged in the sewage water treatment tank.

5.3.1.9 Ventilation system
Four (4) ventilation fans each with capacity of 50000m$^3$ shall be equipped, two of which are reversible.

5.3.2 Workshop equipment
Workshop equipment in the engine room shall be arranged with bench drilling machine, double-end landed grinding machine, and bench clamp and work bench. Oxygen and ethyne welding equipment shall be arranged on the main deck.

5.3.3 Air condition system

5.3.3.1 Design data for air condition system
Refer to applied rules, regulations and standard, the design data for the air condition system (accommodation area) as following:

<table>
<thead>
<tr>
<th></th>
<th>Summer working condition</th>
<th>Winter working condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No.: OWU1-11-A002
### Temperature and Relative Humidity

<table>
<thead>
<tr>
<th></th>
<th>Temperature</th>
<th>Relative humidity</th>
<th>Temperature</th>
<th>Relative humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank interior</td>
<td>35°C</td>
<td>70%</td>
<td>-20°C</td>
<td>70%</td>
</tr>
<tr>
<td>Tank exterior</td>
<td>28°C ± 1°C</td>
<td>50%~60%</td>
<td>20°C ± 1°C</td>
<td>40%~50%</td>
</tr>
</tbody>
</table>

5.3.4 Refrigeration system

The provisions shall be refrigerated with refrigerator

6 **Electrical part**

6.1 **General**

6.1.1 General Principle

The vessel shall be equipped with wireless communication equipment that can effectively communicate with the tug boat or land.

Spare parts shall be arranged according to the rules of CCS and owner’s requirement.

6.1.2 Electric system

The vessel adopts AC three-phase three-wire insulation system. AC single-phase circuit adopts single-phase bi-wire insulation system. The DC circuit adopts bi-wire insulation system.

- **Main generator**
  - AC 400V 50Hz 3-phase, 3-wire
- **Dynamic system**
  - AC 380V 50Hz 3-phase, 3-wire
- **Lingting system**
  - AC 220V 50Hz 3-phase, 3-wire (feeder)
  - AC 220V 50Hz single phase, 3-wire (branch)
- **Galley equipment**
  - AC 220V 50Hz 3-phase, 3-wire
  - AC 220V 50Hz single phase, 3-wire
- **Communication and navigation equipment**
  - AC 220V 50Hz single phase, 2-wire
Direct current system

Except the insulation monitor appliance, and the secondary coil of voltage transformer and current transformer to be ground, all the other system of the vessel shall be insulated from the hull.

6.1.3 Cables

Except for the cables on equipment and special functioned, all the cables of the vessel shall use CEF92/SA (power supply cable) and CHEF82/SA (communication cable) maritime bundled flame retardant cables.

6.2 Power supply equipment

6.2.1 Main generator

Four (4) diesel generators to be arranged in the engine room as the main power resource of the vessel. Four diesel generators shall be long term parallel operation and load transferable.

6.2.2 Emergency generator

One (1) diesel generator shall be arranged in emergency engine room as the emergency power supply for the vessel.

6.2.3 Harbour generator

One (1) diesel generator shall be arranged in engine room as the power supply when the vessel is in harbour.

6.3 Switchboard

The vessel shall adopt high quality brand elements of electrical apparatus such as Schneider in order to assure the function of electrical system.

6.3.1 Main switchboard

The switch board shall be fitted with 13 panels, including: 4 main generator control panels, 1 harbor generator panel, 6 AC380V load panels, 1 AC220V load panel, 1
6.3.2 Emergency switchboard

The emergency switch board have 2 panels, include 1 emergency generator control panel, 1 AC380V&AC220V load panel.

6.4 Motors and control facilities

6.4.1 Motors

The motors generally adopt balanced supply products, and the cabin machinery basically adopt continuous operate type and drip-proof or closed structure, the deck machinery basically adopt interrupt operate type and water-proof structure.

6.4.2 Control facilities

The important load motors’ power be directly supplied by the group start panels or load panel in main switch board while other less important motors’ be supplied by distribution boxes.
6.5 **Illumination facilities**

6.5.1 Normal lighting

6.5.2 Emergency lighting

6.5.3 Temporary emergency lighting

6.5.4 Navigation light and signal light

6.6 **Interior communication and safety system**

6.6.1 Public address

6.6.2 Sound powered telephone

6.6.3 General alarm system

6.6.4 Fire detection and alarm system

6.6.5 CO2 discharge alarm system

6.6.6 Automatic telephone system

6.6.7 Composite alarm system in engine room

6.6.8 Satellite television system

6.6.9 Engineers calling system

6.7 **Navigation facilities**

6.7.1 Sounder

6.7.2 Fog horn control system

6.7.3 Radar
6.7.4 Anemorumbometer

6.7.5 Magnetic compass

6.8 Wireless equipment

6.8.1 VHF wireless telephone

6.8.2 Navigation weather warning receiver

6.8.3 IF/HF wireless appliance

6.8.4 Satellite emergency position-indicating radio beacon

6.8.5 Search and rescue radar transponder

6.8.6 Two way VHF

6.9 Control system of rudder propellers

The vessel set up with 4 full reversible CPP, with two 710kw at aft while two 450kw at fore, both adopt self release voltage way to start.

7 Special facilities part

7.1 Spud legs

7.1.1 General

The vessel shall be fitted with 4 spud legs, all the spud legs be welded by high-strength steel plate. Pile shoes are equipped at the leg bottom. There are high pressure flushing pipe lines on and in the pile shoes. Bolt holes are kept on the spud legs.
7.1.2 Data for of spud legs

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dia.</td>
<td>3300mm</td>
</tr>
<tr>
<td>Size of leg shoes</td>
<td>9000mmX8500mm</td>
</tr>
<tr>
<td>Length</td>
<td>about 60m</td>
</tr>
<tr>
<td>Bolt pitch</td>
<td>1500mm</td>
</tr>
</tbody>
</table>

7.2 **Hoist structure**

7.2.1 General

The vessel adopts bayonet hydraulic pressure hoisting appliance which fit for working at coastal shoal water area non-ice zone.

7.2.2 Main data of hoist structure

- Single leg Rated Lifting Capacity: 2500t
- Single leg Maximum Lifting Capacity: 2800t
- Average lifting velocity: 12m/H

The hoist structure comprises by hydrocylinder, upper balancer, lower balancer, stable ring beam, move ring beam, hydraulic bolt, wedge bracket, etc.

7.2.3 Parameter of main hoist hydro-cylinder

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dia</td>
<td>560mm</td>
</tr>
<tr>
<td>Stick size</td>
<td>380mm</td>
</tr>
<tr>
<td>Route</td>
<td>1560mm</td>
</tr>
</tbody>
</table>

7.2.4 Electric control system of hoist structure

The hoist structure to be controlled by the console setted up at the central control room, each leg with a border pile.

7.2.5 Hoist structure room

Length 9600mm, breadth 9100mm, height 12000mm, with guide module installed
above it, adopt HARDOX500 wear resistant steel.

7.2.6 Spud leg fix module

Install leg fix module on fix leg room and main deck to fix the legs when lifting or trailrunning.

7.3 Main crane

One (1) hydraulic full reversible amplitude crane of 300TX40M (700TX23M)

The loading curve of the crane is as following:

The main data is as following:

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Big hook</th>
<th>Front auxiliary hook</th>
<th>Mid auxiliary hook</th>
<th>Small hook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety working load</td>
<td>Refer to loading curve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working radius</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoisting speed (SWL)</td>
<td>0~3m/min</td>
<td>0~6m/min</td>
<td>0~8m/min</td>
<td>0~50m/min</td>
</tr>
<tr>
<td>Hoisting speed</td>
<td>0~6m/min</td>
<td>0~</td>
<td>0~16m/min</td>
<td>0~50m/min</td>
</tr>
<tr>
<td>(light load)</td>
<td>10m/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hoisting height</strong></td>
<td>Over deck: 120m &lt;br&gt;Below deck: 14m</td>
<td>Over deck: 126m &lt;br&gt;Below deck: 14m</td>
<td>Over deck: 70m &lt;br&gt;Below deck: 14m</td>
<td>Over deck: 126m &lt;br&gt;Below deck: 14m</td>
</tr>
<tr>
<td><strong>Amplitude speed</strong></td>
<td>15 minutes (from rest to 83°)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Slewing speed</strong></td>
<td>~0.2r/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Slewing scope</strong></td>
<td>460° (-230°→+230°)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Design condition</strong></td>
<td>Max. inclining angle (transverse /longitudinal)</td>
<td>Refer to loading curve</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient temperature</td>
<td>-10°C→+40°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motor data</strong></td>
<td>Power</td>
<td>1000KW</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electric system</td>
<td>380V/50Hz/3ph</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protection class</td>
<td>IP54</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insulation/temperature arise grade</td>
<td>F/B</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working system</td>
<td>S1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Detail date and technical requirement refer to the specification of the crane.

### 7.4 Auxiliary crane

One (1) auxiliary crane of 120TX25M shall be equipped.

The main data is as following:

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Main hook</th>
<th>Auxiliary hook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety working load</td>
<td>Refer to loading curve</td>
<td></td>
</tr>
<tr>
<td>Working radius</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoisting speed (SWL)</td>
<td>~8m/min</td>
<td>~30m/min</td>
</tr>
<tr>
<td>Hoisting speed (light load)</td>
<td>~14m/min</td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Specification</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Hoisting height</td>
<td>65m</td>
<td></td>
</tr>
<tr>
<td>Amplitude speed</td>
<td>30s</td>
<td></td>
</tr>
<tr>
<td>Slewing speed</td>
<td>~0.3r/min</td>
<td></td>
</tr>
<tr>
<td>Slewing scope</td>
<td>360°</td>
<td></td>
</tr>
<tr>
<td>Design condition</td>
<td></td>
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<td>Max. inclining angle</td>
<td>Refer to loading curve</td>
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<td>(transverse /longitudinal)</td>
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