



PRIMA LINES

# CS. PRIMA NUSANTARA X



VESSEL SPECIFICATIONS

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# INTRODUCTION



## OVERVIEW

Prima Nusantara X is an offshore cable-laying vessel equipped with DP2 support capabilities, and boasts a remarkable maximum carrying capacity of 3,140 tons for fiber optic cables. The primary tank alone can accommodate an impressive load of 2,900 tons of cable, while the spare tanks offer a combined maximum capacity of 2 x 120 tons. Notably, the strategic placement of the cable handling engine within the deckhouse ensures a secure and unhindered working environment on the deck for the crew during cable laying and repair operations.

Furthermore, this vessel is complemented by a Work-class ROV Alpha 8.2 (Simec), which is strategically positioned to provide ample space for the maintenance of equipment, complete with a 40-ton tow winch designed for plough handling. The vessel is well-appointed with a robust Plough A-Frame featuring a remarkable 30-ton capacity and an equally capable ROV A-Frame, also boasting a 30-ton capacity. Prima Nusantara X is purposefully designed to withstand a continuous 45-day operations without requiring a port call. Additionally, it offers an onboard cabin capacity for 60 passengers.



## Operation Range

PNX is equipped with the capability to conduct repairs on Submarine Cable Communication Systems (SCCS) at remarkable depths of up to 8,500 meters. This capability extends to both repeater and repeaterless cable systems, and it remains steadfast under various sea conditions, including severe weather and currents, up to Seastate-7.

Additionally, our vessel boasts the capacity to deploy SCCS with a substantial cable load of 3,140 tons for both repeater and repeaterless cable systems. This deployment capability is effective in a range of sea conditions, including challenging weather and currents, with a level of up to Seastate-6.



## Speed of Response

In this industry, time plays a pivotal role, and Prima Nusantara X is equipped with a Diesel Electric Propulsion engine capable of maintaining a minimum service speed of 10 knots. Notably, the Prima Nusantara X has been meticulously designed to endure uninterrupted operations for a remarkable 45 days without necessitating a port call during cable-related operations. Furthermore, it offers an onboard cabin capacity for 60 passengers.



# PRINCIPAL PARTICULAR

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Name	<b>Prima Nusantara X</b>
Call Sign	<b>Y D V F 2</b>
IMO Number	<b>9669990</b>
Builder	<b>Mawei Shipyard China</b>
Designer	<b>MMC Ship Design Ltd</b>
Year Built	<b>2014</b>
Flag	<b>Indonesia</b>
Class	<b>RINA Class</b>
Accommodation	<b>60 Pax</b>
Length Overall	<b>94 m</b>
Breadth Moulded	<b>7.40 m</b>
Gross Tonnage	<b>3601 tons</b>
Net Tonnage	<b>1429 tons</b>
Deadweight	<b>5126 tons</b>
Free Deck Space	<b>1000 m<sup>2</sup></b>
Deck Strength	<b>15 ton/m<sup>2</sup></b>

# DECK MACHINERY

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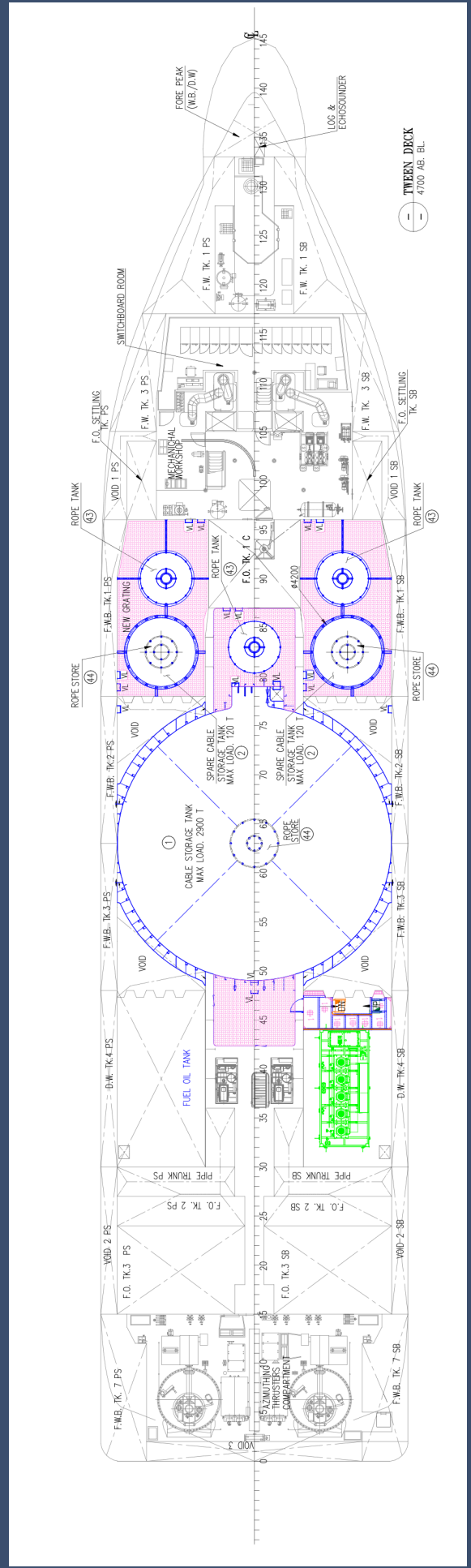
Anchor Windlass and Mooring Winch	<b>Electro Hydraulic System, Windlass with 10 Tons Duty Pull @ 9m/min</b>
Tugger Winch	<b>2 x 10 Ton @Electro Hyd. Sys</b>
Capstan	<b>2 x 7.5 Ton @Electro Hyd. Sys</b>
Deck Crane	<b>SWL 5 Ton @ 15 m Fix Boom Crane</b>

# CABLE MACHINERY

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Linear Cable Engine	<b>Royal IHC 1 x 18 ton E. Hydraulic 21 WP</b>
Cable Drum Engine	<b>Royal IHC 1 x 4m x 30 ton E. Hydraulic</b>
Draw off Haul Back	<b>Royal IHC 1 x 3.5 ton E.Hydraulic 4 WP</b>
Cable Transporter	<b>Royal IHC 2 x 1 ton E.Hydraulic 2 WP</b>

# GENERAL ARRANGEMENT CABLE TANKS



# CABLE TANK

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Total Number of Cables in One Layer	<b>150 tons</b>
Total Number of Layers	<b>83 layers</b>
Length on Cable in One Layer	<b>4663 km</b>
Total Length of Cable in Main Carousel	<b>387 km</b>
Tank Size (D x H)	<b>16.8 m x 6.30 m</b>
Cone Size (D x H)	<b>2.544 m x 4 m</b>
Total Weight of Cable	<b>2900 tons</b>
Outer Diameter of The Cable	<b>46 mm</b>
Minimum Bending Radius with Load	<b>1500 mm</b>

# SPARE CABLE TANKS

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Total number of cables in one layer	<b>92 tons</b>
Total number of layer	<b>343 layers</b>
Length of cable in one layer	<b>0,869 km</b>
Total length of cable in spare carousel	<b>298 km</b>
Tank size (D x H)	<b>4,2 m x 6,3 m</b>
Cone size (D x H)	<b>1,95 m x 4 m</b>
Total weight of cable	<b>120 T x 2</b>
Outer diameter of the cable (Nominal)	<b>12mm</b>



# PLOUGH SYSTEM

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Brand **SOIL MACHINE DYNAMICS**

Type **NTT WEM Plough 7**

Burial Depth	<b>0 to 3 m</b>
Max Trench Depth	<b>2.2m horizontal share (sand) 3.0 m share sinkage (soft clay)</b>
Tow Force	<b>up to 80 tons</b>
Water Depth	<b>up to 2000m</b>
Soil Types	<b>5kPa (Minimum skid sinkage)</b>
Ploughing Conditions	<b>30° side slope, pitch fore and aft</b>
Ploughing Speed	<b>up to 1m/s dependent on seabed</b>
Weight in Air	<b>22 tons (including bridges &amp; ripper)</b>
Dimension	<b>Length 9,1 m (skid down) Height 4,4m (drawbar down) Width 5,1m (over stablizers)</b>
Cable	<b>Diameter 10 - 160 mm</b>

# ROV SYSTEM

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Brand	SIMEC
Type	ALPHA 8.2
Total Power	400 kW @60 Hz

## Dimension

Length	5.6 m
Width	4 m
Height	3m/top of buoyancy 2.7 m
Ground Clearance	450 mm

## Operation

Weight In Air/In Water	12.5 ton/500 kg
Min/Max Depth	5 m/3000 m
Forward (Free Swim)	2.5 knots
Lateral (Free Swim)	1.8 knots
Vertical (Free Swim)	1.5 knots
On Tracks	up to 2400m/h



# ROV SYSTEM

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## Burial Capability

Trench Depth	2.4 m - 3 m (with extension)
Max Product Diameter	200 mm - 350 mm (max)

## Hydraulic System

Hydraulic Power	1x e.motor 4500V-150
Hydraulic System Pump	1x Parker PV 270 Axial Piston

## Pump

Thruster Control Unit	1x SubAtlantic TCU (8x servovalves)
Actuators Control Unit	1x SubAtlantic GFVP 16 Stations

## Propulsion

Vertical Thrusters	4x Thruster HTE390BA
Horizontal Thrusters	4x Thruster HTE390BA

## Jetting

Jetting Power	2x e.motor 4500v-125kW
Jetting Pumps	2x Jetting Pumps 2 stages- 450m <sup>3</sup> /h @6bar Both pumps can feed independently both jetting tools

# LINEAR CABLE ENGINE

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Brand

**Royal IHC**

Brand

**21 WP LCE**

Max Dynamic

**Pull 18 tons**

Dimension

**L: 15,3 m W: 1,48 m H: 1,98 m**

Mass

**17,5 tons**

Cable size

**12 mm to 400 mm**

Speed

**6 knots/ 185m/min**

# CABLE DRUM ENGINE & DRAW OF HOLD BACK CABLE

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Brand	Royal IHC
Type	30Te CDE & 4WP DOHB
CDE Drum Diameter	4 m
CDE Max Dynamic Pull	30 tons
CDE Dimension	L: 5,45m W: 3,45m H: 4,78m
CDE Mass	30 tons
DOHB Mass	40 tons
DOHB Dimension	L: 4.26m W: 2,45m H: 1,89m



# PROPULSION & ELECTRICAL POWER GENERATION

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Main Generators	4 × 1825 kW @480V/3Ph/60Hz
Main Engines	4 x 2550 BHP @1800 RPM Diesel-Electric Propulsion
Emergency Generator	1 × 350 kW @ 480V/3Ph/60Hz
Propulsion E.Motor	2 × 2000 kW E. Motor VFD
Bow Thruster	1 x 910 kW CPP E. Motor
Retractable Thruster	1 x 800 kW CPP E. Motor
Propellers	2 x FPP @ 4-a Blade

# PERFORMANCE

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Maximum Speed **10 knot**

Endurance **45 days**

Fuel on DP **18.912 kl**

Fuel on Transit **13.632 kl**

Fuel on Standby **2.472 kl**

# DYNAMIC POSITIONING SYSTEM

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DP - 2 System **1 set**

Maker **Kongsberg**

# TECHNICAL & NAVIGATION INFO

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Radar (ARPA)	<b>2 Units (1 xX-Band; 1 x S-Band)</b>
Gyro Compass	<b>3 Units</b>
Magnetic Compass	<b>1 Unit</b>
GPS	<b>1 Unit</b>
AIS	<b>1 Unit</b>
Echo Sunder	<b>1 Unit</b>
Speed Log	<b>1 Unit</b>
Anemometer	<b>3 Units</b>
BNWAS	<b>1 Set</b>
VDR	<b>1 Set</b>
Electronic Chart (ECDIS)	<b>1 Set</b>
Auto Pilot	<b>1 Unit</b>
Search Light	<b>2 Units</b>
GMDSS Radio A3	<b>1 Complete Set</b>
Navtex Receiver	<b>1 Unit</b>
MakaiLay	<b>1 Set</b>
Fleet Broadband	<b>1 Set</b>
VSAT	<b>1 Set</b>

# TESTING, JOINTING AND OTHER EQUIPMENT

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UJ & UQJ

Available (attach)

DORT

Sonardyne RT6-6000D-Electric

PFE

PFESB15PN36 SPELLMAN

Output 15kV/2.4A (max)

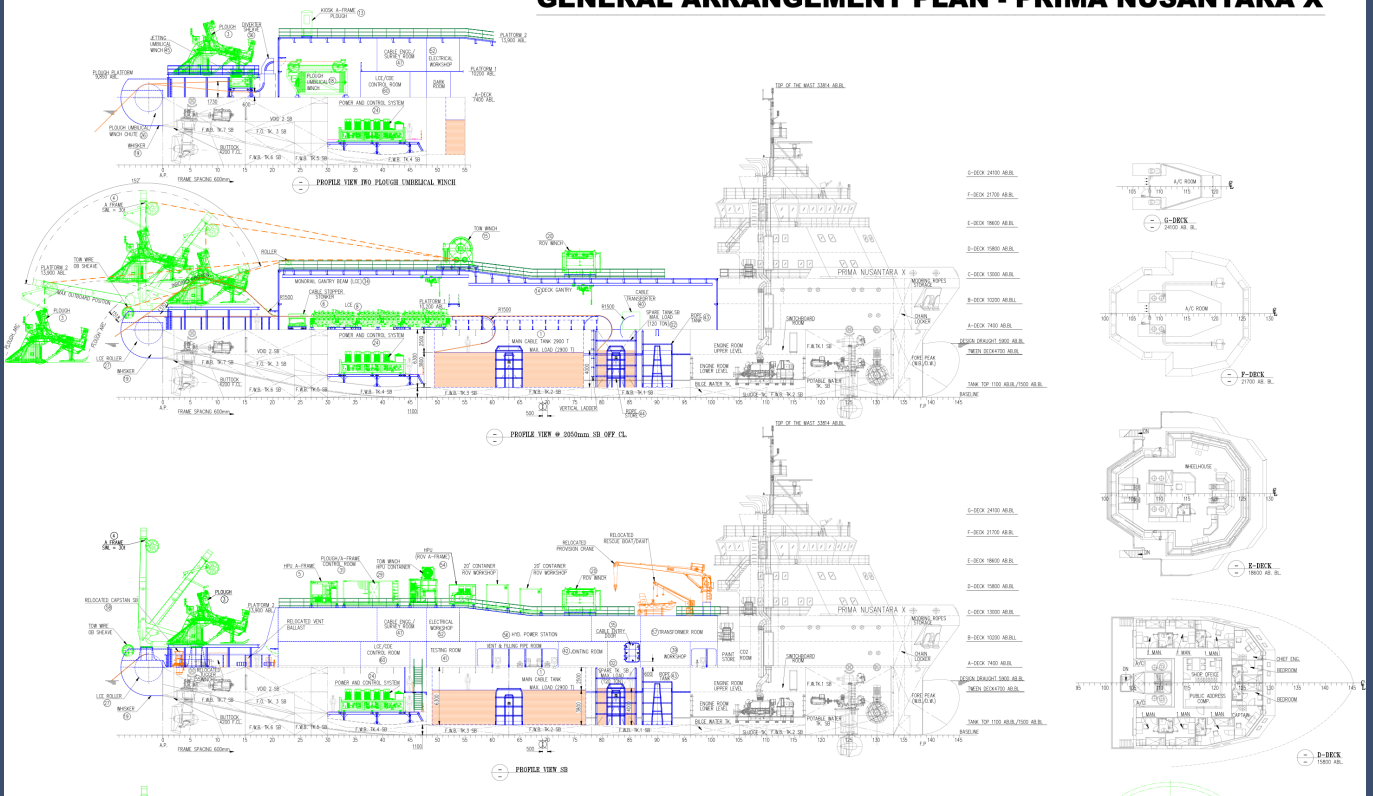
Input 400Vac 3P  $\pm$ 10% 50/60Hz 60A

PGU

ISRS ETA Subsea Cable  
Specialists

# GENERAL ARRANGEMENT

## GENERAL ARRANGEMENT PLAN - PRIMA NUSANTARA X





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