

# EQUIPMENT SHEET

**BOKA DA VINCI**  
DIVE SUPPORT VESSEL



## CONSTRUCTION/CLASSIFICATION

Type/design	DP2 MT6022XL
Built by	Hanjin Heavy Industries - Pusan, South Korea
Year of construction	2011
Flag	Marshall Islands
Classification	DNV ✱ 1A1, CLEAN, CRANE, DSV-SAT, DSV-SURFACE, DYNPOS-AUTR, EO, FIRE FIGHTER II, HELDK-SH, COMF V(3), DK(+), SF
IMO number	9441233
ISM/ISPS	Vessel is ISM & ISPS certified by ABS on behalf of Marshall Islands Flag

## FEATURES

State-of-the-art 18-man Twinbell saturation diving system
Main crane 140 t active heave compensated
Dive system: 18-man, twin bell saturation diving, system rated to 300 m
2x 18-man hyperbaric lifeboats
2x DDC & 2x LARS for surface diving
Accommodation for 120 persons
Main deck area 1,120 m <sup>2</sup> with 10 t/m <sup>2</sup>
Schilling HD WROV system

## MAIN DATA

Length overall	115.40 m
Length BPP	107.40 m
Beam	22.20 m
Depth main deck	9.00 m
Depth shelter deck	11.80 m
Draft max. (S.I.d)	7.035 m
Displacement	12,565 t @ 0.0 m trim
Deadweight	5,662 t @ 0.0 m trim
Gross tonnage	8,691 t
Net tonnage	2,608 t
Cargo main deck space	1,120 m <sup>2</sup> (deck strength 10 t/m <sup>2</sup> )
Forecastle deck space	235 m <sup>2</sup> (deck strength 6.5 t/m <sup>2</sup> )
Deck load capacity	3,300 t
Fuel oil	1,440 m <sup>3</sup>
Lube oil	53 m <sup>3</sup>
Potable water	1,160 m <sup>3</sup> + 50 m <sup>3</sup> /day water makers
Ballast water	5,122 m <sup>3</sup>
Anti-heeling	940 m <sup>3</sup>

## SATURATION & AIR DIVING SYSTEMS

### SATURATION EQUIPMENT SPREAD

Drass Galeazzi 18-man twin bell system rated at 300 msw

2 x 3-man bells, each 6.0 m<sup>3</sup>

Bell handling system with active shock absorption system

Bell handling approved to launch in 4m Hs

2 x 6-man DDC (D/L) + 2 x 3-man DDC (D/L) (2,200 mm dia)

2 x SPHL - hyperbaric lifeboats (18 man capacity each)

2 x TUP chambers (for dive bell mating)

### GAS STORAGE

18,000 m<sup>3</sup> gas storage below deck, gas transfer, chamber & diver gas reclaim systems

### AIR DIVING SPREAD

2 x DDC (D/L) and 2 x 2-man LARS Air Dive System

## DYNAMIC POSITIONING SYSTEM

Converteam ADP-21, dual redundant dynamic positioning system (AUTR/DPII) with DP references as follows:

1 x DGPS/GLONASS system comprising, 2 x VERIPOS LHD@-CGG2 integrated mobile unit for L1/L2 dual frequency GPS and GLONASS capability and integrated L-Band satellite and IALA/HF differential modulators

2 x DGPS C-NAV

1 x CYSCAN laser reference system (heated version)

3 x motion reference sensors TSS DMS-10

2 x taut wire MK15 – NTD A-Frame 500 m wire length

3 x Anemometer (with heating) Gill Wind Observer II  
Hydro-acoustic USBL Ranger Pro (4,500 m capacity)

3 x Ship's wideband transponders type Sonardyne DPT 8124 (3,000 msw depth rating)

## MACHINERY

Main generators	3 x 2,510ekW, 690V/60Hz, 720 rpm
	2 x 1,880ekW, 690V/60Hz, 720 rpm
Auxiliary generators	2 x 835ekW, 690V/60Hz, 1,200 rpm
Emergency generator	1 x 910ekW, 1,800 rpm
Bow thrusters	Wartsila, 2 x 1,900 kW tunnel thrusters
Bow azimuth	Wartsila, 1 x 1,500 kW retractable thruster
Stern thrusters	Wartsila, 2 x 3,000 kW azimuth thrusters

## BOKA DA VINCI DIVE SUPPORT VESSEL

## FUEL CONSUMPTION

At full speed 14 knots	25 t MGO/day
Cruising speed 11 knots	18 t MGO/day
In DP mode	10 -12 t MGO/day (depending on weather)
At sea standby engines	5 t MGO/day (at calm sea)
In port or at anchors	3 t MGO/day (domestic use only)

## MAIN CRANE (STBD)

TTS Marine 140 t crane type CCLKO 1600-140-35 - Active Heave Compensation (AHC) knuckle boom offshore crane. Wire dia 56 mm.

Main winch - dynamic factor 1.3

140 t – 2 fall	5.5 to 7 m radius - hook depth 650 m
70 t – 1 fall	5.5 to 10 m radius - hook depth 2,000 m
12 t – 1 or 2 fall	at max radius 35 m - hook depth 2,000 m

Auxiliary winch - dynamic factor 1.54

10 t – 1 fall	5.5 to 33 m radius - hook depth 150 m
Personnel lifts	0.75 t at radius 5.5 to 33 m

## AUXILIARY CRANE (PORT)

TTS Marine 40 t crane type CCLO 1250-40-27. Wire dia 28 mm.

Main winch - dynamic factor 1.3

40 t – 4 fall	5.5 to 13.5 m radius - hook depth 150 m
20 t – 2 fall	5.5 to 27 m radius - hook depth 300 m
10 t – 1 fall	5.5 to 27 m radius - hook depth 600 m

Auxiliary winch - dynamic factor 1.54

3 t – 1 fall	5.5 to 27.8 m radius - hook depth 50 m
Personnel lifts	0.5 t at radius 5.5 to 27.8 m

## HELI DECK

Construction	22.2 m diameter aluminium
Load capability	Sikorsky S92 - max take-off weight 12 t Sikorsky S61 - max take-off weight 9.3 t
Compliances	DNV HELDK-SH, IMO regulations, CAP 437
Sky lobby	Allocated for in/out going passengers

## FIRE FIGHTING

Class	DNV FIFI II
Pumps	2 x 3,600 m <sup>3</sup> /hr driven by 2,200kW electric motor
Monitors (stern)	2 x water monitors of 150 m length throw, 110 m height, working arc of more than 330 degrees

## PERFORMANCE CAPACITIES

Fuel autonomy	About 90 days (based on average use of 11 t per day)
Diving gas autonomy	About 60 days (based on 18,000 m <sup>3</sup> storage capacity) 3,000 m <sup>3</sup> kept for safety and 200 m <sup>3</sup> use per day depending water depth.
Drinking water autonomy	Self-sufficient (based on onboard water makers 2pcs x 40 t, production capacity 40 t/day - 1pc in use at a time)
Station keeping	ERN 99.99.99

## ACCOMMODATION & RECREATIONAL FACILITIES

Total of 120 persons	Full A/C in all cabins, mess rooms, control rooms and offices 23 x 1-man cabins 46 x 2-men cabins 2 x (2+2)-men cabin (Pullman) 123 beds in total
Hospital	4 beds

## RECREATIONAL FACILITIES

Exercise room	21.5 m <sup>2</sup> gymnasium
Mess rooms (2)	16 seats (officers) and 50 seats (others)
Day rooms (2)	16 seats (officers) and 20 seats (others)
Cinema/training room (1)	30 seats
Internet café (1)	6 seats and 6 stations

## BOKA DA VINCI DIVE SUPPORT VESSEL

## OFFICES & MEETING ROOMS

Main meeting room	10 seats (close to crew day room)
Project meeting room	12 seats (close to project offices)
Client's offices	3 offices with 2 stations available, 2 x PC, 1 x fixed VHF, 1 x clearcom
Offshore Manager Office	1 office with 1 station
Div. Supt/ROV Supt Office	1 office with 2 stations
Project Engineering Office	1 office with 6 stations
Field Engineers Office	1 office with 4 stations
On Line Survey room	1 office with 5 stations
Ship's office	1 office including lounge and conference table

## MOONPOOLS

### BELL

2 x (3.9 m x 3.9 m) aerated

### WORKING

1x (5 m x 5 m) clear space, excluding baffles. A 2,500 mm perimeter area around the working moon pool strengthened with additional 25 mm plate for equipment handling or work structure installation

## NAVIGATION EQUIPMENT

### RADAR PLANT

1 x ARPA, Furuno FCR-2837S chart 10 cm/S band

1 x ARPA, Furuno FAR-2117 3 cm/X band

### NAVIGATION/DIRECTION FINDER

1 x NMEA distribution unit

2 x GPS Furuno GP-150

1 x AIS type Furuno Universal AIS FA-150

1 x ECDIS type Simrad w/interface to radars, DGPS, Echo Sounder, AIS System, gyro

### GYRO PLANT/AUTOPILOT

3 x gyro compass, Sperry Marine model Navigate MK1

### COMPASS

2 x bearing compass with brackets

1 x magnetic compass with digital repeater

1 x autopilot, Sperry model Navi Pilot 4000

### ECHO SOUNDER & SPEED LOG

1 x echo sounder, Furuno FE 700 (colour)

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## POSITIONING

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EIVA positioning software

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## POSITIONING/VIDEO MONITORS

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Cabling to posit/video monitors in key personnel/client's cabins as well as bridge, dive, ROV and project and client's offices

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## COMMUNICATION EQUIPMENT

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### GMDSS A3 RADIO STATION

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1 x satellite V-system w/interface to email system

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1 x MF/HF 150W simplex radio station

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2 x Inmarsat C

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1 x Inmarsat F77

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1 x receiver type Furuno Navtex 500

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### VHF & UHF

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2 x duplex VHF stations w/DSC and multi watch, type Sailor RT4822, one with slave handset in hospital

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2 x simplex VHF station w/dual watch, slave handset in ECR

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3 x UHF type Motorola GM380

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3 x UHF radio, stationary model type GP950

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1 x GSM radio w/line interface and antenna

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### DIGITAL COMMUNICATION

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V-Sat with internet (WiFi, LAN Connection). High speed data transfer and desktop terminal w/17" flat screen monitor

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### NAVIGATION / VIDEO SCREEN

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Digital video network sharing w/10 multiple audio/video channels

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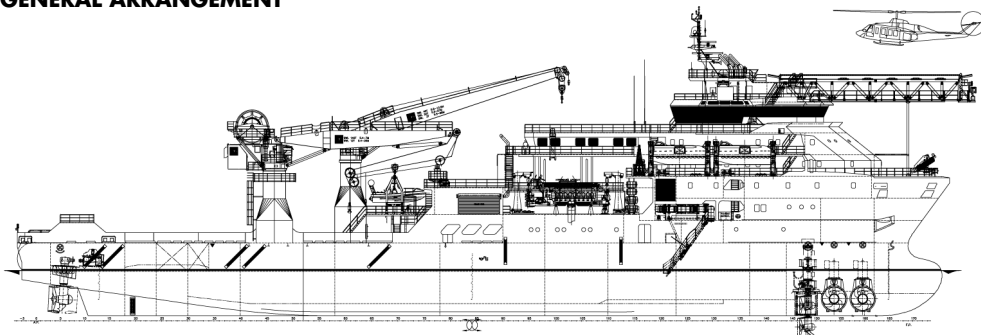
### CCTV SYSTEM

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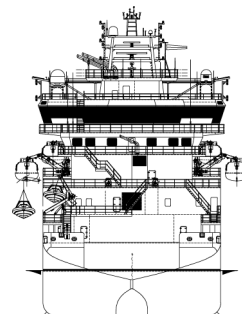
Consists of 11 cameras, main station allocated in instrument room

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#### GENERAL ARRANGEMENT

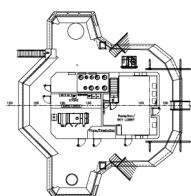


PROFILE

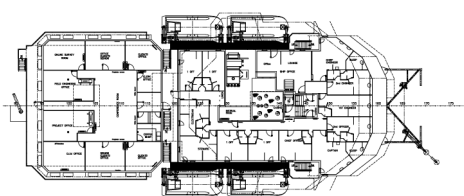


AFT VIEW

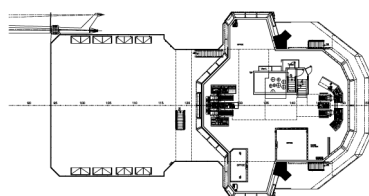
#### SIDE VIEW



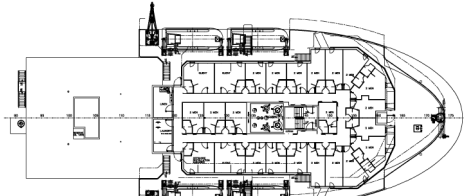
TOP OF WHEELHOUSE



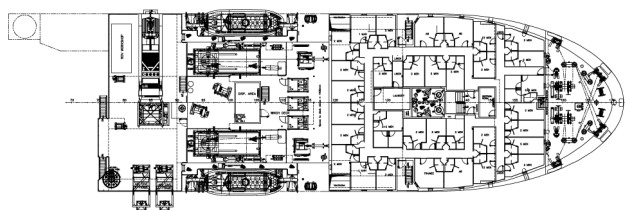
CAPT. DECK



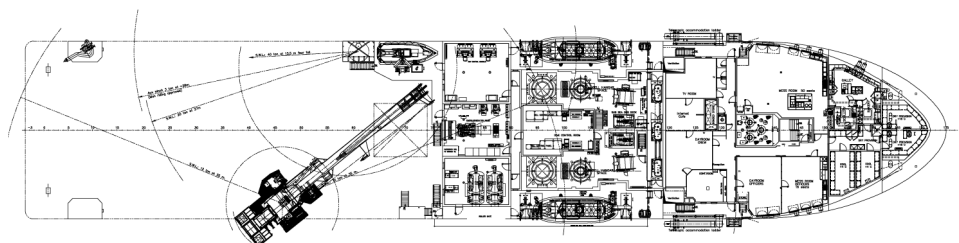
BRIDGE DECK



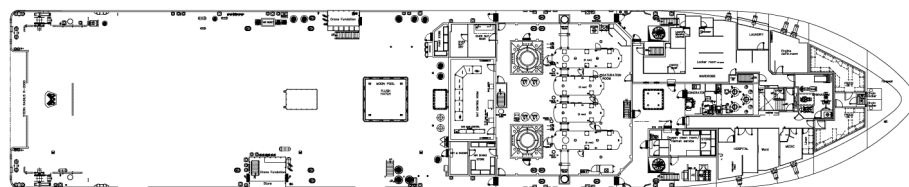
BOAT DECK



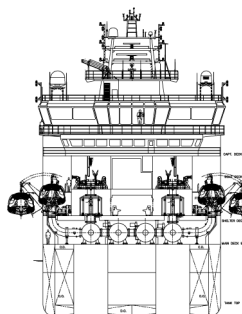
FORECASTLE DECK



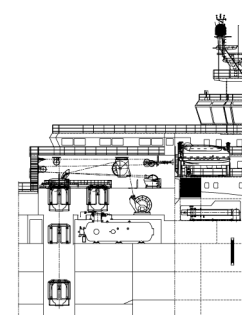
SHELTER DECK



MAIN DECK



TRANSVERSE SECTION  
SATURATION SYSTEM



LONGITUDINAL SECTION  
SATURATION SYSTEM

#### TOP VIEW DECK LEVEL