

# EQUIPMENT SHEET

BOKA DA VINCI DIVE SUPPORT VESSEL



CONSTRUCTION/CL	ASSIFICATION
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, HELDK-SH, COMF V(3), DK(+), SF
IMO number	9441233
ISM/ISPS	Vessel is ISM/ISPS certified by DNV/GL on behalf of Marshall Islands Flag

FEATURES	
State-of-the-art 18-man Twinbell saturation diving system rated to 30	0 m
Main crane 140 t active heave compensated	
2 x 18-man hyperbaric lifeboats	
2x DDC & 2x LARS for surface diving	
Accommodation for 120 persons	
Main deck area 1,120 m² with 10 t/m²	
Seaeye Cougar Light Work Class ROV 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.l.d)	7.035 m
Displacement	12,565 t @ 0.0 m trim
Deadweight	5,662 t @ 0.0 m trim
Gross tonnage	8,691 GT
Net tonnage	2,608 NT
Cargo main deck space	1,120 m <sup>2</sup> (deck strength 10 t/m <sup>2</sup> )
Forecastle deck space	235 m² (deck strength 6.5 t/m²)
Deck load capacity	3,300 t
Fuel oil	1,440 m³
Lube oil	53 m³
Potable water	1,160 m³ + 40 m³/day water makers
Ballast water	5,122 m <sup>3</sup>
Anti-heeling	940 m³



#### **BOKA DA VINCI**

**DIVE SUPPORT VESSEL** 

SATURATION & AIR DIVI	NG SYSTEMS
SATURATION EQUIPMEN	T SPREAD
Drass Galeazzi 18-man twin	bell system rated at 300 msw
2 x 3-man bells, each 6.0 m <sup>3</sup>	3
Bell handling system with act	ive shock absorption system
Bell handling approved to la	unch in 4m Hs
2 x 6-man DDC (D/L) + 2 x 3	3-man DDC (D/L) (2,200 mm dia)
2 x SPHL - hyperbaric lifeboo	ats (18 man capacity each)
2 x TUP chambers (for dive b	pell mating)
Drass Manufactured LSP	
GAS STORAGE	
18,000 m³ gas storage belo gas reclaim systems	w deck, gas transfer, chamber & diver
AIR DIVING SPREAD	
2 x DDC (D/L) and 2 x 2-ma	n LARS Air Dive System
Fathom diver Monitoring Sys	tem

#### DYNAMIC POSITIONING SYSTEM

GE 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	Х	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 Observator 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

FUEL CONSUMPTION	
At full speed 13 knots	30 t MGO/day
Cruising speed 11 knots	20 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 600 m 70 t - 1 fall 5.5 to 10 m radius - hook depth 1,200 m 12 t - 1 or 2 fall at max radius 35 m - hook depth 1,200 m Auxiliary winch - dynamic factor 1.54 10 t - 1 fall5.5 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 fall5.5 to 27 m radius - hook depth 300 m 10 t - 1 fall5.5 to 27 m radius - hook depth 600 m Auxiliary winch - dynamic factor 1.54 3t-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



## **BOKA DA VINCI**

**POSITIONING** 

EIVA positioning software

POSITIONING/VIDEO MONITORS

Cabling to posit/video monitors in key personnel/client's cabins as

well as bridge, dive, ROV and project and client's offices

DIVE SUPPORT VESSEL

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 99.99.98.85/99.99.98.97

ACCOMMODATION &	
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 FACILIT	IES
Exercise room	21.5 m² gymnasium
Mess rooms	50 seats
Day rooms (2)	16 seats (officers) and 20 seats (others)
Cinema/training room (1)	30 seats
Internet café (1)	6 seats and 6 stations

OFFICES & MEETING RO	DOMS
Main meeting room	10 seats (close to crew day room)
Project meeting room	12 seats (close to project offices)
Client's offices with workstation	3 offices available, 1 x fixed VHF, 1 x clearcom
Offshore Manager Office	1 office
Div. Supt/ROV Supt Office	1 office
Project Engineering Office	1 office
Field Engineers Office	1 office
On Line Survey room	1 office
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 $\times$ 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
2 x AIS type Furuno Universal AIS FA-150
2 x ECDIS type Furuno w/interface to radars, DGPS, Echo Sounder, AIS System, gyro
GYRO PLANT/AUTOPILOT
3 x gyro compass, Sperry Marine model Navigate MK1
1 x Anschutz Std 22
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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#### **BOKA DA VINCI**

**DIVE SUPPORT VESSEL** 

#### **COMMUNICATION EQUIPMENT**

## GMDSS A3 RADIO STATION

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

1 x MF/HF 150W simplex radio station

2 x Inmarsat C

1 x FBB

1 x receiver type Furuno Navtex 500

#### VHF & UHF

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

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

3 x UHF type Motorola GM380

3 x UHF radio, stationary model type GP950

1 x GSM radio w/line interface and antenna

#### DIGITAL COMMUNICATION

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

# NAVIGATION / VIDEO SCREEN

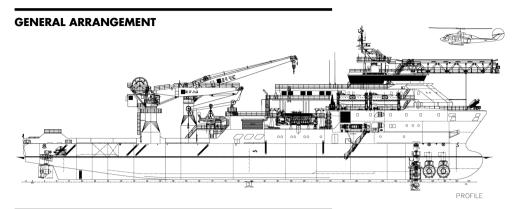
Digital video network sharing w/10 multiple audio/video channels

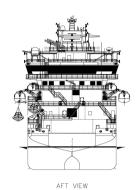
## **CCTV SYSTEM**

Consists of 11 cameras, main station allocated in instrument room

Royal Boskalis Westminster N.V. PO Box 43 3350 AA Papendrecht The Netherlands





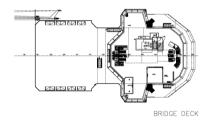


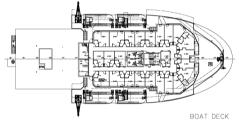


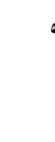


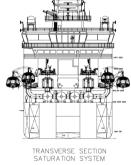


CAPT. DECK

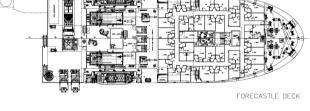


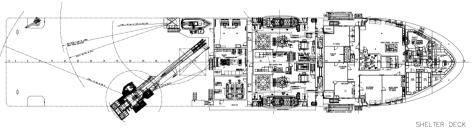


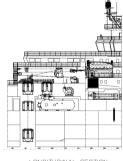




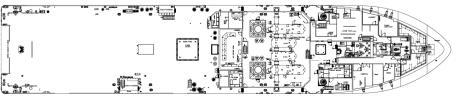








LONGITUDINAL SECTION SATURATION SYSTEM



MAIN DECK

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