

M/V YA TOIVO



Diamond Mining Vessel Technical Specifications

VESSEL SPECIFICATIONS

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| Vessel Name: | M/V YA TOIVO |
| Flag: | Bahamas |
| Port of Registration: | Nassau |
| Call Sign: | C6QB6 |
| MMSI: | 308791000 |
| Official Number: | 731052 |
| IMO number: | 7907697 |
| Year of Build: | 1981 |
| Year Converted: | 1999/2000 Poland |
| Builder: | Scott Lithgow Ltd Shipbuilders on the Clyde, Glasgow (UK) |
| Owner: | Deep Blue Shipping and Navigation Ltd Marenoi House, 4 George Street, Nassau Bahamas |
| Classification: | Rina 100-A-1.1-NAV. IL; STAp (pl) Special notations ELI-IWS, RINA No. 96876 |
| Gross Tonnage: | 9111 |
| Net Tonnage: | 2733 |
| Displacement: | 8659 |
| L.O.A.: | 149.5m |
| Breadth (Moulded): | 24.0m |
| Depth: | 10.85m |
| Summer Draft: | 7.055m |
| Lightship Weight –Draft: | 9217.8 |
| Main Engines: | 7 Diesel engines (total electrical 12945Kw) |
| Propulsion: | 2 Voigth Schneider (2500 Kw each) |
| Bow Thrusters: | 3 x 1500 Kw |
| Steering: | Voith Scheider system x 2 |
| DP installation: | Dynamic Position System SDP21 Simrad + svc. |
| Accommodation: | Cabins: Single x 10, Double x 48, Offices x 8 |
| Capacity: | B/W 4000 m/t, F/O 1838m/t, lub oil 18m/t potable W 968 t |
| Helicopter deck: | Safe working load 9.8 ton |
| Mooring System: | 4 point mooring, equipped with 4 x 15 ton Bruce Anchors |

SUBSEA MINING SYSTEM

N.B.: the current layout of the Subsea Mining System is set for operations at 200 meter water depth

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| Launch A-frame: | 290 ton SWL. |
| Launch Platform Cover: | Hydraulically operated sliding door arrangement. |
| Main Hoist Winch: | Single wire, 8 drive hydraulic operated winch, 115 mm single hoist wire breaking strength 1080 Ton, |
| Power Umbilical Winch: | Effective pull 12 ton SWL, maximum 300 meter umbilical, consisting of 6 x 3.3KV power transfer, signal control, fibre optic control and fluid compensation lines. |
| Slurry Discharge Facility: | Continued riser train installation, capacity 160 meter auto-float E&S or Emstec dredge hose ID 600 mm. |
| Slack Wire Compensator: | Effective cylinder stroke is 6.5 meter, with an effective compensation capability of 12 meter. |
| Subsea Crawler: | Track mounted subsea crawler, max working (within Pump specifications layout) 200 meter below sea level. Central hydraulic subsea power pack, electrical driven by 500Kw subsea 3.3 electric motor, tracks hydraulically driven. Boom and knuckle with a maximum reach of 42 degrees sb/ps (net cleaning width of 22 meters). Slurry transported by IHC dredge pump 2400 KW. A 500 KW/ 3.3 KV electrical driven subsea jet water pump available. Crawler operated and controlled via fibre optics, sensors and plc system, OD build for -500 m. Total weight of the crawler is 245 ton. |

DIAMOND MINERAL PROCESSING PLANT

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| General | Incoming slurry capacity of 12,000 m ³ /hour at density's concentration of 35% in volume. |
| Mineral Processing Plant: | Primary screening >50mm to moon-pool overboard, undersize fraction to elutriators setting off fraction < 1mm. Secondary screening <1 mm > 25 mm, Storage bin section capacity 2 x175 m ³ each. 2 in-line or parallel options for milling. Dense Medium Separation units 2 x 150 ton/h. Concentrate DMS 25 ton/h. 4 Double stage x-ray sorter primary pass. 2 Double stage x-ray sorter secondary pass. Cleaning and drying Final mineral recovery via glove box. Final product drop safe. |
| Service Cranes: | 2 x 24 ton cranes situated on rear deck. 2 x 6 ton crane in process plant area. |
| Central Control Room: | The total subsea and processing plant system is controlled from a central control room located on the rear deck of the vessel. |
| Offices: | All individual offices are net worked and linked to a satellite connection. |
| Security: | All mineral and subsea working areas are constantly under security camera surveillance (data are permanently recorded and reviewed). |