

M/V FUGRO SOLSTICE



The MV FUGRO SOLSTICE is a DP/ROV survey vessel operating in the Asian region by Fugro Subsea Services, based in Singapore. The vessel has been specially modified for IRM and construction support tasks but she will also be capable of geophysical and geotechnical survey. A key feature is a 20ton subsea heave compensated deck crane.

The Vessel is permanently fitted with an FCV3000 150hp heavy Work Class ROV and currently a Work Class / Light Work Class and also an Inspection ROV. The vessel also has the full range of Starfix DGPS and Starfix Navigation software systems together with a Sonardyne Fusion USBL and Lode Star systems. Other survey systems such as sub-bottom profiler, multibeam echo sounders and sidescan sonar, magnetometers etc can be fitted as required.

A dedicated processing room is available where acquired data including digital video (from ROV) is transferred to a server and distributed via LAN to multiple work stations to allow rapid post processing and presentation of survey results. Fast A0 plotters are available for plotting of data.

A leader in supplying offshore surveying and subsea services on a global basis, Fugro Survey Pte Ltd is a member of the multi-national Fugro group of companies with 275 offices in over 50 countries. Clients of Fugro Survey can benefit from individual and collective experience and hundreds of survey professionals at Fugro companies world-wide.

Vessel Capabilities

- Construction survey support services
- IRM services
- Mattress & Grout placement
- Seabed sampling/vibro coring and geotechnical coring
- Submarine cable post lay inspection and burial (PLIB) services
- Engineering surveys
- Submarine cable and pipe route surveys
- Multibeam bathymetric surveys



M/V FUGRO SOLSTICE

GENERAL PARTICULARS

Port of Registry	: Singapore
Call Sign	: 9VJZ7
Shipbuilder	: Jiangsu Zhenjiang Shipyard Co Ltd, China
Built in	: 2008
General Arrangement drawings	: Attached
Vessel Type	: Survey & ROV Support
Official Number	: 393506
IMO number	: 9474424

MAIN DIMENSIONS

Length O.A.	: 70.25m
Moulded Breadth	: 16m
Depth at Deck line	: 6m
Draught (Loaded)	: 4.50m
Gross Registered Tonnage	: 2397
Net Registered Tonnage	: 719

MANNING

Total Marine Crew:	: 17 TBC
Passengers	: 34 TBC

CLASSIFICATION & CERTIFICATION

Classification

Classification society	: ABS+A1(E) AMS DP2
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Certification Held

Safety Construction Certificate
 Safety Equipment Certificate
 Safety Radio Certificate
 Loadline Certificate
 International Air Pollution Prevention Certificate
 International Sewage Prevention Certificate
 Safety Management Certificate
 ISPS Certificate
 ABS Class Certificate
 International Tonnage Certificate
 Record of Anti Fouling system
 Special Purpose Safety Certificate

MAIN ENGINES AND MACHINERY

Main Engine	: 2 x 1925kw CAT6516B @ 1600rpm 5200 BHP Each
Auxiliary Engines	: 3 x 400kw – 415V 3Ph 50Hz
Emergency Generator	: 1 x 80kw – 415V 3Ph 50hz
Shaft Generator	: 2 x 540kw – 415V 3Ph 50hz
Bow Thruster	: 1 x 8 tonne thrust diesel driven c/w CPP : 1 x 6 tonne thrust Electrical driven c/w CPP
Stern Thruster	: 1 x 4 tonne thrust Electrical driven c/w CPP
Propellers	: 2 x Controller Pitch Propellers in Fixed Nozzles – Four bladed 2.65m ø
Rudders	: 2 x 8.0MT torque each
Air Compressor	: 2 x Electric 22m ³ /hr FAD x 30kg/cm ²

PERFORMANCE

Maximum Speed	: 13.0k at 12 MT/24hrs (approx)
Economical Speed	: 11.0k at 12 MT/24hrs (approx)

Survey Speed	: 1.5 – 3 knots at 3-4 tons/24hrs
Type Of Fuel	: Marine Gas Oil
Range	: 40 days – cruising range ± 11500NM @ 12.0K

DECK EQUIPMENT

Anchor Windlass	: Electro-hydraulic c/w 2 x warping drums (independently clutched) @ 15M/min
Anchor & Chain	: 2 x AC14 Anchors each 2000kg 2 x 335m x 45mm ø U2 studded link chains
Tugger Winch	: 2 x 10MT electro-hydraulic
Bollard Pull	: 65MT (approximate) Capstan : 2 x electro-hydraulic 10MT at 15m/min
Crane 1	: Heave Compensation 20T @ 6m
Crane 2	: 3 Tonne @ 1.7m or 750kg @ 7m reach
Hydraulic A-frame	: 20 M/T SWL @ 6.0m over the stern

ACCOMMODATION

Cabins	: 7 x 1 man, 10 x 2 man, 7 x 4 man,
Others	: 1 x Office, 1 x Recreation Room, 1 x Conference Room, 2 x Survey Rooms, 1 x ROV Workshop, 1 x ROV Control Room

Radio & Navigation Equipment

Radar	: 2 units (Furuno FR-2125, 1510)
Echo Sounder	: 1 unit (Furuno FE700) with repeater aft station
Gyro Compass	: 1 unit Raytheon repeaters on P & S wings and a 2 bearing compass repeater
Magnetic Compass	: 1 unit 6" (Raytheon)
Speed Log	: 1 Doppler Log – Furuno DS-80
Auto Pilot	: 1 unit compatible with gyro steering compass
Navtex Receiver	: 1 unit (Furuno NX-500)
DGPS Navigator	: 2 units (Furuno GD-90)
Joystick	: 1 at Forward console / 1 at Aft console
AIS & Ship Alert System SART	: 1 Set (Furuno FA-100) : 2 units (Joltron Tron 9GHz)
GMDSS	: Furuno RC1800IT
SSB	: 1 unit 250W
VHF	: 2 units 25W with DSC (Furuno FM-8500)
EPIRB (GMDSS)	: 1 unit (Joltron Tron 40S 406MHz)
Portable VHF (GMDSS)	: 3 units Multi Channels

DP2 Equipment & USBL System

DP	: 1 x Kongsberg KPOS DP-02
Position Reference	: 2 x DGPS, 1x Kongsberg Fan Beam, 1 x Sonardyne Fusion USBL,
Gyro	: 1 x Sonardyne Lodestar AHR5, 2 x Raytheon STD22G/GM
Motion Sensor	: 1 x Sonardyne Lodestar AHR5, 1 x Kongsberg MRU
Wind Sensor	: 3 x Kongsberg

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Fire Fighting Equipment

Internal Fire Fighting

CO ² System	: Engine Room & Bow thruster compartments
Fire Fighting Equipment	: Fully Complies with SOLAS

External Fire Fighting

Fire Pump	: 1 x 65m ³ /hr @ 60m head
Fire Pump	: 1 x 35m ³ /hr @ 60m head

Life Saving Equipment

Life Rafts	: 6 x 25 men
Lifebuoys	: 12 Pieces
Life jackets	: 110 Pieces
Immersion Suits	: 3 Sets
Fireman Suits	: 4 Sets
Scrambling Nets	: 2 Nos.
Rescue Boats c/w Davit	: 1 x semi rigid 19.7kW engine 6 man
EEBD	: 6 units with spare bottles
Dispersant System	: 2 spray nozzles/pump 54m ³ /hr 30m head

Cargo Capacities

Deck Cargo	: 500 tonnes (approx)
Deck Strength	: 7.5 tons/m ²
Clear Deck Area	: 520m ²
Fuel Oil	: 650m ³ (approx)
Fresh Water	: 350m ³ (approx)
SW Ballast	: 730m ³ (approx)
Lube oil Storage	: 6m ³

Discharge Rates

Fuel Oil Cargo	: 100m ³ / hr @ 60m head
Fresh Water	: 100m ³ / hr @ 60m head
Drill Water / SW ballast	: 100m ³ / hr @ 60m head
Mud pumps	: 2 x 66/33m ³ /hr
Cement tanks Compressor	: Working pressure 5.5 Bar - 1210m ³ / hr @ 0.5 Bar

POSITIONING & SURVEY EQUIPMENT

Positioning - Permanent

DGPS	: Starfix.HP Starfix.XP Starfix.L1 All systems interfaced to Starfix Software Suite
USBL	: Sonardyne Fusion USBL with Lodestar IMU. Transducer on internal hull mounted hydraulic deployment pole.
Gyro Compass	: SG Brown Meridian Gyro
Navigation	: Starfix Suite with multi-redundant installations available across LAN between bridge and instrument room
Processing	: Starfix processing suite with server & multiple workstations, A0 hp Design jet plotter in instrument room with LAN inter-connection.

ROV EQUIPMENT

ROV Control room and workshops are built into vessel

FCV3000 Heavy Work Class ROV – Permanently fitted 150hp FCV3000 3,000m rated ROV system:

- 1 x Schilling Titan 4 Manipulator
- 1 x Schilling RigMaster Manipulator
- Octan III Attitude sensor
- Digiquartz 8CB4000-I Depth sensor
- Simrad 1007 digital altimeter
- Teledyne RDI Doppler Velocity Log (DVL)
- Minimum of 6 x Kongsberg Cameras with separate video channels
- 4 x 600W Lights with switch and dim channels
- Kongsberg Simrad OAS Sonar

Tether Management System:

- PMSL Top Hat TMS with 600 of 30mm tether

Deck Equipment:

150hp Hydraulic Power Pack

Umbilical Winch with FO slip rings & Lift Umbilical with up to 3,300m of steel main lift umbilical c/w single mode fibres

A frame with 4D snubber

Saab Seaeye JaguarXT – Permanently fitted

Electric Work class ROV 3,000m rated ROV system:

- 1 x Schilling Orion 7 function Manipulator
- 1 x Schilling Orion 5 function Manipulator
- Hydraulic tooling system (HPU, valve pack, compensator / reservoir / filters.)
- Compass / inertial navigation unit supplying auto head, depth, pitch and roll and "DP."
- Digiquartz 8CB4000-I depth sensor with altimeter.
- Up to 4 x Kongsberg Cameras with separate Video channels through 2 x FO multiplexers
- 1 x Black with for TMS
- 2 x 200W lights with switch and dim channels
- Kongsberg Mesotech Sonar

Tether Management System:

- Seaeeye Type 10 TMS with 500m of 17mm tether

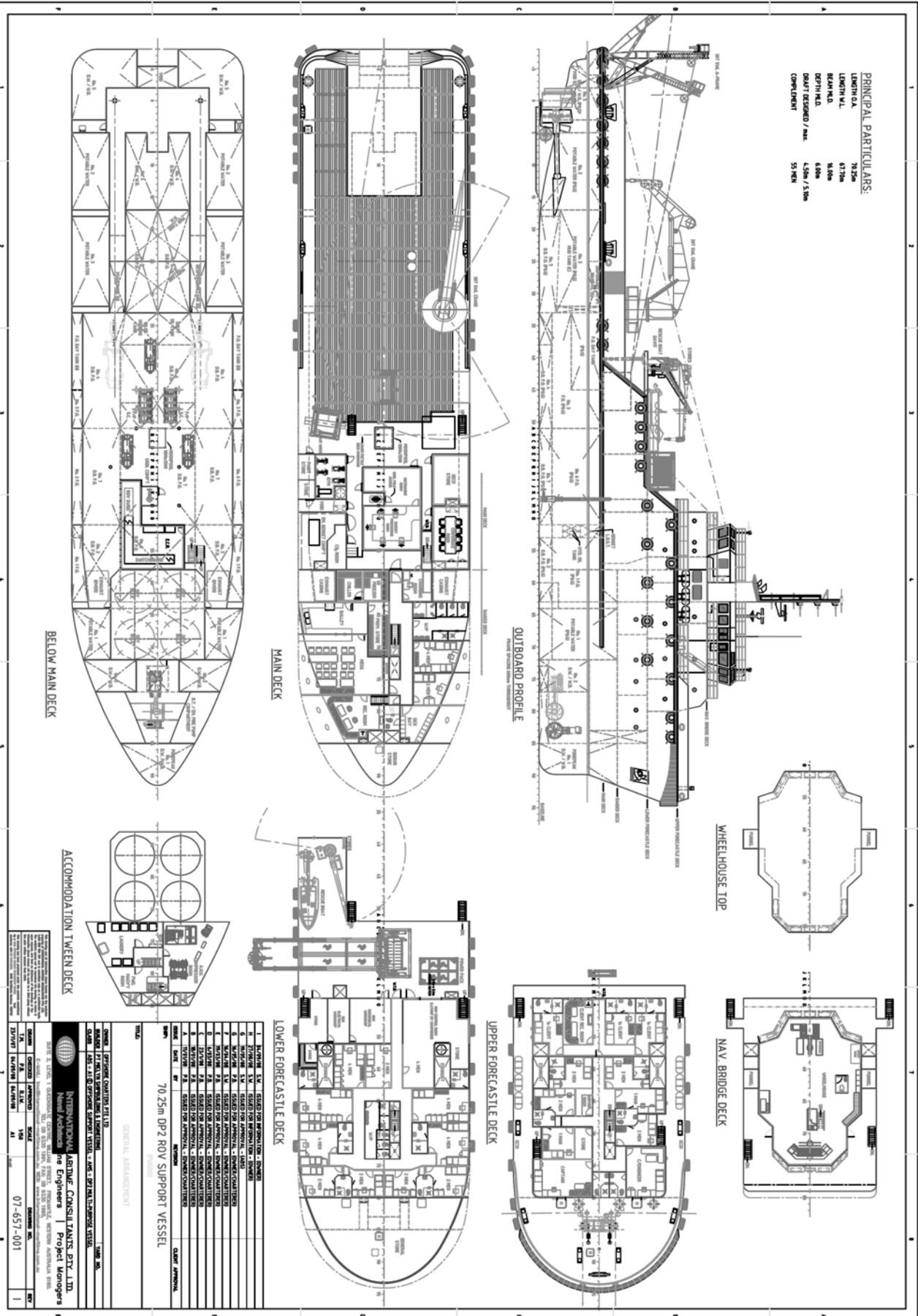
Deck Equipment:

- Single LARS skid with hydraulic Power Pack, 8.5Te umbilical winch & lift umbilical, winch with up to 3,800m of steel main lifting umbilical c/w single mode fibres & Focal Electro/FO slip rings
- A Frame (with snubber) SWL 5,000kg A-Frame at 3G with 7T lock out



Solstice Back Deck (520m²)

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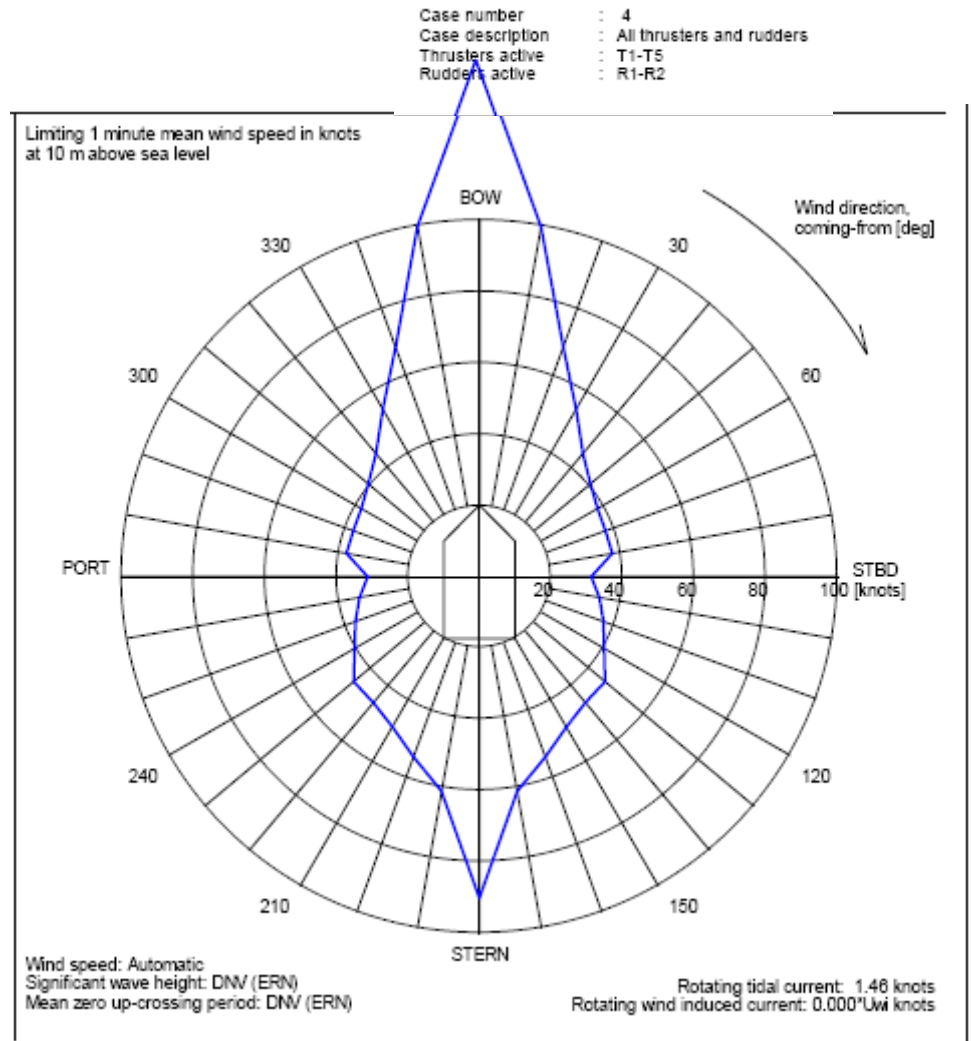


The specification of the equipment contained in this brochure is subject to change without prior notice.

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Estimated DP Plot



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