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# M/V SETOUCHI SURVEYOR

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Fugro's DP survey vessel Setouchi Surveyor.

The MV Setouchi Surveyor is DP1 survey vessel owned by Fugro and operates in the Asian region by Fugro Geodetic of Singapore. The vessel has been specially modified for varying surveying tasks from geophysical and geotechnical survey to ROV based services.

The Vessel is permanently fitted with an STARFIX DGPS and Sonardyne USBL positioning systems. The vessel is also fitted with hull mounted Odom echosounder and 4 x 4 pinger sub-bottom profiler. Other systems such as multibeam echosounders and sidescan sonar, magnetometers etc are fitted as required.

A spacious processing room is available where acquired data 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 charts

A leader in supplying surveying services on a global basis, Fugro Geodetic is a member of the multi-national Fugro group of companies with 200 offices in over 45 countries. Clients of Fugro Geodetic can benefit from individual and collective experience and hundreds of survey professionals at Fugro companies world-wide.

## Vessel Capabilities

- Construction survey support services
- ROV based subsea inspection surveys
- Analogue geophysical surveys
- Engineering surveys
- Submarine cable and pipe route surveys
- Multibeam bathymetric surveys
- Submarine cable post lay inspection and burial (PLIB) services
- Seabed sampling/vibro coring and geotechnical coring

# M/V SETOUCHI SURVEYOR



## GENERAL PARTICULARS

Port of Registry	:	Panama
Call Sign	:	HP 9549
Shipbuilder	:	Mitsubishi Heavy Industry Shimonoseki Shipyard, Japan
Built in	:	1979, Converted to survey in 1999. Upgraded to DP1 Sept. 2000 at Pan United Yard, Singapore.
General Arrangement drawings	:	Attached
Vessel Type	:	Survey & ROV Support
Official Number	:	28015 – PEXT

## MAIN DIMENSIONS

Length O.A.	:	64.8m
Length Between Perpendiculars	:	56.2m
Moulded Breadth	:	11.3m
Depth at Deck line	:	7.2m
Draught (Loaded)	:	4.8m
Gross Registered Tonnage	:	1,264
Net Registered Tonnage	:	387
Dead-weight Tonnage	:	890

## MANNING

Total Marine Crew:	:	
During DP operations	:	19
Non DP Operations	:	16

## CLASSIFICATION & CERTIFICATION

### Classification

Classification society	:	ABS+A1 AMS DP1S-1 Survey Vessel
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Vessel under continuous machinery survey	:	
Next special survey	:	Qtr 2 2004

### Certification Held

- Deratting Exemption Certificate
- International Oil Pollution
- Cert. of Classification (Hull & machinery)
- Cargo Ship Safety Equipment
- Cargo ship safety radio
- International Load Line Cert
- Cargo Ship Safety Construction
- International Tonnage Certificate

## MAIN ENGINES AND MACHINERY

### For'ard Propulsion

Number	:	Two (2)
Type	:	Daihatsu Diesel 6DSM-26
BHP	:	1,300 HP Each
Reduction gear type	:	Daihatsu RG-17D
Turbo charger type	:	BBC VTR-250
Propeller s	:	Two (2)
Type	:	"Voith Schneider" units. 6TP-250
Propeller Blades	:	6 variable pitch blades each providing omni-directional thrust.
Rudder number	:	Nil
Particulars	:	ABS Approved

### Stern Propulsion

Number	:	3508B DITA caterpillar diesel engines
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BHP	:	1,000 HP Each
Thrusters	:	Two (2)
Type	:	HRP511-51-WM omni directional fixed pitch thrusters

The units are resilient mounted with a 5 bladed propeller for low noise operations.

### DP System

Supplier	:	Kongsberg Simrad
Class	:	Class DPS1
System	:	SDP11 main system SJS01 joystick control
Reference sensors	:	Wind Sensor 2 x VRU 2 x gyrocompass Sonardyne acoustic USBL system Starfix DGPS.

### Consumption

Bunker Type	:	Marine Gas Oil
Average oil viscosity	:	5 cst. @ 30° C
Fuel Consumption - <i>Estimated</i>	:	
At Transit speed	:	10 tonnes/day
At slow survey speed (4 knts)	:	5 tonnes/day
On DP mode	:	6 tonnes/day
Alongside - Generators only	:	1 tonne/day
Fuel Oil capacity	:	384 m <sup>3</sup>
Lube Oil capacity	:	16.1 m <sup>3</sup>

### Generating Plant

Main generator numbers	:	Three (3)
Engine Model & Type	:	Daihatsu Diesel 6DS-18AN.
BHP	:	530 HP each
Turbochargers	:	BBC VTR-161-2
Generator Model	:	Mitsubishi Electric Corp
Generator Type	:	CFC-DP, Brush less
Delivery	:	437kVa / 350Kw / 450V / 60Hz
Total Generating capacity	:	1300 Kva (200kva required for ship's use)

### Water Makers

Fresh Water Generators	:	2
Supplier	:	Gefico
Type	:	AQ-3/4a
Capacity	:	5m <sup>3</sup> /day-Transit speed 2.5m <sup>3</sup> /day-on DP

### Air Conditioning Plant

Main air conditioning number	:	One (1)
Model & Type	:	Daikin 4HC 752 SE YE
Propellant	:	Freon 22

### Hydraulic Power

Capstan and anchor winches driven from two independent power packs. A-Frame driven from independent power pack.

## LOAD CAPACITY

Dead Weight Tonnage	:	547.6 Tons
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### Dead Load Capacity

Deck Area	:	
Length	:	35 m
Width	:	11 m
Surface	:	385 m <sup>2</sup>
Maximum deck cargo	:	150 Tons

### Water Tank Capacity

Potable Water	:	240 m <sup>3</sup>
Ballast water	:	60 m <sup>3</sup>

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## EQUIPMENT

### Three Point Mooring System

Stern Anchors	
Number	: Two (2) Stockless
Windlass Type	: 3 ton Electric Hydraulic
Anchor chain length	: Port Aft 405 m
	: Starboard Aft 325 m
Anchor chain	: Stud link chain $\phi$ 36
Anchors	: 1,440 kg each
Bow Anchor - Starboard	
Number	: One (1) Stockless
Windlass Type	: 3 ton Electric Hydraulic
Anchor chain length	: 100 metres
Anchor chain	: Heavy gauge
Anchor	: 770 kg

### Moon-Pool

Dimensions	: 3m x 3m
Features	: Door at the hull
	: Deck grating

### Deck Winch

Type	: Electric Hydraulic
Drum size	: 1.8m diameter
	: 1.0m width
Pulling Capacity	: 5 tons

### Deck Crane

Supplier	: Sormec, Italy
Type	: Electric Hydraulic.
	: Fully revolving.
	: Main boom reach 12 m
	: with 2 x m extensions.
Capacity	: 6 Tonnes @ 12 m
	: 3.8 Tonnes @ 18m

### Stern "A" Frame

Type	: Hydraulic
Capacity	: 20 tons SWL
Extension	: 3m over stern

### Provisions Deck Crane

Type	: Electric
Capacity	: 0.7 tons
Location	: Port Bow

### Bridge and Nautical Equipment

Auxiliary control station	: 1 x aft wheelhouse
Navigation aids:	
- Gyro Compass	: 1 x Hokushin
- Autopilot	: 1 x Simrad Robertson
- Echo Sounders	: 2 x Furuno
- Radars	: 1 x Tokimec Rascar 3400
- Radars	: 1 x Tokyo Keiki Rascar
- Speed Log	: 1 x Hokushin Denki
- GPS Receiver	: 1 x Kodon KGP-910
- Inmarsat B	: 1 x Nera
- VHF Radio	: 1 x Raytheon
- GMDSS	: 1 x Raytheon
- Inmarsat C	: 1 x Raytheon
- EPIRB	: 1 x McMurdo LDT 61A
- SART	: 1 x MTI SOLAS 9
- 2182 Khz Watch Receiver	: 1 x Skanti WR6000
- walkie-talkies	: 2 x IC-M5
- VHF FW	: Skanti TRP-2500
- VHF AFT	: ICOM M58
- VHF GMDSS	: 2 x Raytheon
- Emergency Radio	: Yes
- Search light	: Yes
- Binocular	: Yes
- Corrected chart	: Yes
- Light books	: Yes
- Tide Tables	: Yes
- Weather Facsimile Receiver	: Yes
- Navtex Receiver	: Yes

## SAFETY EQUIPMENT

### Life Saving Equipment

Equipment certified for	: 40 persons
Life Rafts	: 2 x 25 men
Life Rafts	: 2 x 20 men
Man Overboard Rescue Boat	: Viking with outboard
Ladder for life raft	: Yes
Life Buoys	: Eight (8)
Lifejackets	: Fifty (57)
Spot Light	: Yes

### First Aid Equipment

Medical equipment in accordance with vessel	: Yes
Stretchers for helicopter transporting	: Yes
Resuscitation oxygen apparatus	: Yes

### Fire Protection System

- Detection	: Yes
- Alarm	: Yes
- Fire Pump Rate	: 50m <sup>3</sup> /hr
- Fixed installation	: CO2
- Extinguisher (portable)	: Yes (CO2, foam)

## ACCOMMODATION

### Air Conditioning

- Model	: Daikin 4 HC 752 SE YE
- Rooms air conditioned	: All accommodation

### Cabins

- Cabins for 1 with en-suite	: 2
- Cabins for 2 with en-suite	: 4
- Cabins for 2	: 7
- Cabins for 4	: 4
- Hospital for 1	: 1
- Max persons	: 40

### Cold Storage Room

- Freezer Capacity	: 12 m <sup>3</sup>
- Cooler Capacity	: 8 m <sup>3</sup>

### Instrument Room

- Area inside ship	: 95 m <sup>2</sup>
- Air conditioned	: Yes
- Photo copier	: Yes

## POSITIONING & SURVEY EQUIPMENT

### Positioning - Permanent

DGPS	: Starfix Spot/Plus/HP DGPS with SPM2000A GPS & Trimble 4000 receivers + PC with MRDGPS wide area solution on navigation LAN.
USBL	: Sonardyne USBL Optional Big Head transducer – hull mounted on hydraulic ram
Gyro Compass	: SG Brown Meridian Gyro
Navigation	: Dual STARFIX NAVIGATION suite in bridge and instrument room with LAN inter-connection.
Processing	: Starfix processing suite with server & multiple workstations, A0 hp Design jet plotter in instrument room with LAN inter-connection.



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## Survey Equipment - *Permanent*

Echosounder	:	Odom DF3200 MKII with hull mounted dual frequency transducers (24/200khz) with TSS320b heave compensator.
Sub-bottom profilers	:	GeoAcoustic 134 4x4 hull mounted pinger system
Corer	:	3m Gravity corer Grab Sampler

## Survey Equipment – *As Required*

Multibeam Echosounder	:	Reson Seabat 8101 multibeam Echosounder fitted as required on moonpool door with TSS DMS02-05 motion compensator
Sub-bottom Profilers	:	GeoAcoustics surface/subtow boomer system
Deep Penetration Profiler	:	Single channel multi element streamer using a Halliburton 10 cubic inch airgun and a 2000psi Price compressor.
Sidescan sonar	:	GeoAcoustics Sidescan system (110/410kHz) with up to 4,000m armoured tow cable.
Analogue Logging system	:	Fugro Glog/Gplot 4 channel (sidescan + SBP's).



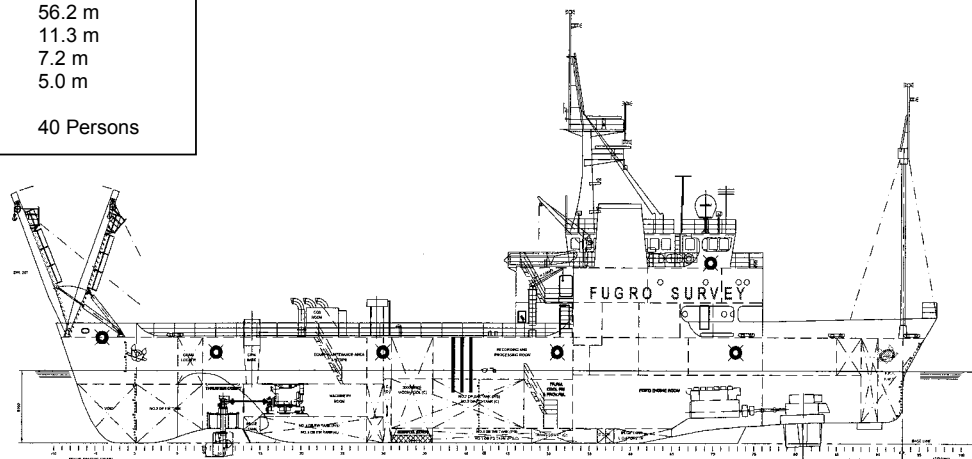


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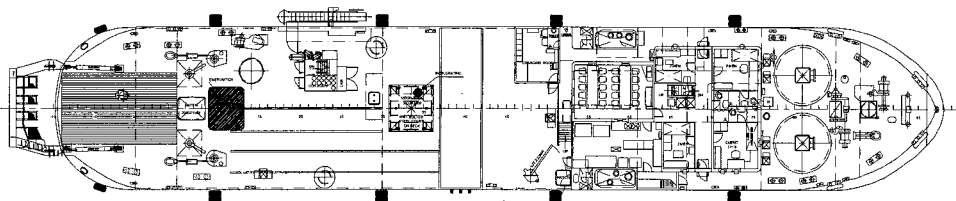
The specification of the equipment contained in this brochure is subject to change without prior notice.

## Principal Characteristics

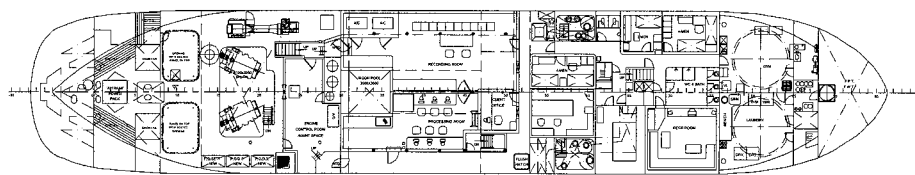
Length OA	63.8 m
Length BP	56.2 m
Width	11.3 m
Depth	7.2 m
Draught	5.0 m
Complement	40 Persons



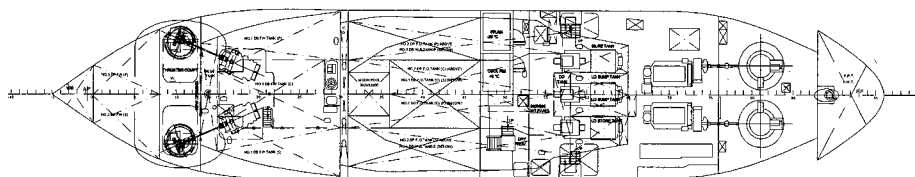
PROFILE



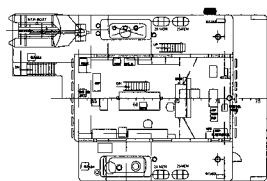
MAIN DECK



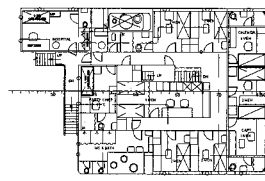
TWEEN DECK



TANK TOP



BRIDGE DECK



ACCOM DECK