



## M/V Pacific Wrangler

- ▶ **Bollard Pull** 139-145 tonnes
- ▶ **Brake Horsepower** 10,657 BHP
- ▶ **Clear Deck Space** 471 m<sup>2</sup>
- ▶ **Winch Line Pull** 300 tonnes

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## General Information

Built:	INP Shipyard, Ulsan, South Korea, May 2003
IMO No.:	9270608
Classification:	DNV-GL +1A1 Fire Fighter(I) Tug DK(+) DPS(2) E0 SF TMON

## Dimensions

Length, overall:	68.95 m
Length, BP:	60.45 m
Length, load line:	62.64 m
Breadth, moulded:	15.5 m
Depth, main deck:	7.0 m
Maximum draft midship:	6.0 m
Design draft:	6.0 m
GT:	2327
NT:	751

## Capacities

Deadweight (maximum):	2155 t
Clear Deck Area:	471 m <sup>2</sup> (36.8 m x 12.8 m)
Deck Strength:	General deck - 5 t/m <sup>2</sup> Aft A/H deck - 10 t/m <sup>2</sup>
Deck Cargo:	800 t
Fuel:	797 m <sup>3</sup>
Potable Water:	448 m <sup>3</sup> (dedicated) 947 m <sup>3</sup> (Multi usage tanks)
Ballast Water:	101 m <sup>3</sup> (dedicated) 1060 m <sup>3</sup> (Multi usage tanks)
Drill Water:	101 m <sup>3</sup> (dedicated) 1060 m <sup>3</sup> (Multi usage tanks)
Mud /Brine /DMA:	459 m <sup>3</sup> Brine (Multi usage tanks) 439 m <sup>3</sup> Mud (Multi usage tanks, dedicated 293 m <sup>3</sup> )
Dry Bulk:	224 m <sup>3</sup> (in 4 tanks)
Ship's Stores:	Cooler (+4 °C): 14.9 m <sup>3</sup> approx. Freezer (-25 °C): 19.6 m <sup>3</sup> approx. Dry Stores (+22 °C): 31.7 m <sup>3</sup> approx.

## Machinery

Main Engines:	2 x 3975 kW = 7950 kW (10657 BHP), Bergen BRM-9
Propulsion:	2 x CPP Propellers in Kort nozzles 2 x Ulstein high-lift independent rudders 2 x Electro-hydraulic steering gear

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Bow Thrusters:	2 x 590 kW (2 x 791 BHP), 9.25 tonnes thrust each
Stern Thrusters:	1 x 590 kW (1 x 791 BHP), 9.25 tonnes thrust
Shaft Generators:	2 x shaft generators 1200 kW (1600 kVA), 450 V, 60 Hz
Auxiliary Generators:	2 x diesel/gen output 320 kW (400 kVA), 450 V, 60 Hz
Emergency Generators:	1 x diesel/gen output 65 kW (80 kVA), 450 V, 60 Hz

### Towing and Anchor Handling

Bollard Pull:	145.44 MT continuous 151.8 MT maximum
Main Winch:	1 x Brattvaag SL300W/2BSL300W low pressure
Load Capacity:	Towing A/H drum 1st layer 300 tonnes pull at 0 - 7.0 m/min. (based on 1st step) 172 tonnes pull at 0 - 12.0 m/min. 122 tonnes pull at 0 - 17.0 m/min. Lowering at 0 - 38.0 m/min.
Brake Capacity:	450 tonnes on towing drum 1st layer 450 tonnes on A/H drum 1st layer
Tow Drum Wire Capacity:	1500 m x 76 mm diameter
Work Drum Capacity:	2 x 1200 m x 76 mm diameter
Chain Gypsy Cable Lifter:	1 x 76 mm, 2 x 84 mm chain diameter
Rig Chain Locker:	187.7 m <sup>3</sup> chain capacity
Stern Roller:	SWL 450 t Length 5 m x 2.5 m diameter
Tow Pins / Guide Pins:	2 pairs x retractable Karmoy guide pins with horizontal locking tops
Wire Chain Stopper:	2 x retractable Karm Fork, SWL 450 t
Spare Reel Capacity:	2 x hydraulic Brattvaag 1500 m x 76 mm capacity
Wire Storage Reel:	1 x hydraulic Brattvaag 1500 m x 76 mm capacity

### Deck Machinery

Tuggers:	2 x 10 t Brattvaag
Capstans:	2 x 10 t Brattvaag
Windlass:	9.5 t pull Brattvaag, 2000 kg high holding anchors 440 m x 38 mm chain each side, plus 1 spare anchor
Bow Mooring:	2 x mooring drums capacity 120 m x 40 mm synthetic rope
Smit Towing Bracket:	1 x 200 tonnes SWL located on fo'csle
Crane Capacity:	Hydralift, 5 tonnes at 13 m radius

### Electronics

Main Radar:	1 x Furuno colour S-band (10 cm), ARPA ins display, complete with remote display at aft console
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Auxiliary Radar:	1 x Furuno colour X-band (3 cm), 28 ins display
Auto Pilot:	1 x Tokimec PR 6000
Gyro Compass:	1 x Tokimec with repeaters 2 x Tokimec Type BH-21-1
Magnetic Compass:	1 only
Echo Sounder:	Skipper GDS101
DGPS :	2 x Veripos LD5
Anemometer :	2 x Gill Ultrasonic WindObserver II / 1 x Observator OMC-160
Speed Log:	Furuno Doppler Log
Direction Finder :	Taiyo TD-L155OA
Communications:	G.M.D.S.S. (Global Maritime Distress and Safety System) Area A3 1 x SSB 2 x VHF 2 x Inmarsat C 452502766 / 452502767 3 x VHF (portable) 2 x SART 1 x EPIRB 1 x Navtex Furuno NX-700
Watch System:	2187.5 kHz and DSC Sailor
Weather Fax:	Furuno DFAX
Satellite Communication:	FBB: Sailor 500

### Discharge Pumps

Fuel Oil:	1 x 150 m <sup>3</sup> /hr - 9.0 bar
Dirty Oil:	1 x 10 m <sup>3</sup> /hr - 2.0 bar
Potable Water:	1 x 150 m <sup>3</sup> /hr - 9.0 bar
Drill Water:	1 x 150 m <sup>3</sup> /hr - 9.0 bar
Liquid Mud:	1 x 75 m <sup>3</sup> /hr - 18.0 bar (2 speed)
Brine / Mud:	1 x 75 m <sup>3</sup> /hr - 18.0 bar (2 speed)
Dry Bulk:	80 m <sup>3</sup> /hr - 5.6 bar, 80 psi, 2 compressors
Cargo Flow Meters :	Fuel Oil and Fresh Water
Hose Connections :	Fuel - 5" Avery - Hardol Potable Water - 5" Camlock Drill Water - 5" Camlock Mud - 5" Camlock Bulk - 5" Camlock Adapters 5"-4" and 6"-5"

### Performance

Speed / Fuel Consumption:	Max. speed 15.5 kts @ 5m draft, approximate consumption 36 cubic metres/day Economical speed 10-12 kts, approximate consumption 14 cubic metres/day Idle at sea: approximate consumption 5 cubic metres/day Idle in port: approximate consumption 0.8 cubic metres/day
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### Dynamic Positioning

Type:	GE Duplex Dynamic Positioning System, C-Series
Reference Systems:	2 x Veripos LD5 DGPS / Fanbeam MDL
Control Modes:	Joystick Manual Heading / Joystick Auto Heading / Dynamic Positioning / Model Control (Dead Reckoning) / Simulation (for training purposes) / DP Minimum Power / Auto Track / Auto Pilot Mode / Mixed Axis Mode / Ship Follow (CyScan) / ROV Follow (Requires Acoustic)
Joystick:	Poscon - Ulstein, integrated to main propellers, main engines, rudders, side-thrusters and interfaced to gyro compass

### External Fire Fighting

Capacity:	2 x 1500 m <sup>3</sup> /hr = 3000 m <sup>3</sup> /hr
Monitors:	2 x 1200 m <sup>3</sup> /hr monitors on wheelhouse roof, remotely controlled from within wheelhouse
Throw Length:	120 m
Throw Height:	50 m
Drenching System:	Installed
Foam Tank :	8 m <sup>3</sup>

### Standby Rescue Equipment

1. 1 x Maritime Partner MP660 Springer, 10 persons, SOLAS approved FRB with inboard diesel waterjet propulsion.
2. Rescue Zones on both Port and Starboard side, main deck, with scrambling net and personnel transfer swing ropes.

### Anti-Pollution

Dispersant Tank:	12.3 m <sup>3</sup>
Spray Booms:	2 x 6 m

### Accommodation

Berths:	10 x 1 berths 4 x 2 berths (including hospital) 3 x 4 berths 30 berths Total 1 x ship's office 1 x messroom 1 x galley All living space fully air-conditioned, design 45 deg C outside, 23 deg C inside All living space fully heated, design -5 deg C outside, 22 deg C inside
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### Environmental Features

1. Cylindrical mud tank free flowing design with external stiffening, sloped floors and fixed agitators.

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2. Fixed Butterworth type mud tank cleaning system with hot water wash, fitted to all mud tanks and with slop tank reception. Cargo load/discharge station with save all to inboard tank.
3. Low residue design bulk tanks.
4. 1 x 15 ppm oily water separator.
5. 1 x sewage plant, extended aeration type.
6. Remote digital fuel economy computer readout in wheel house, of main engine fuel consumption / vessel speed.
7. Garbage compactor and mascerator.

### Miscellaneous

1. Design complies to latest rules and regulations from SOLAS 74, with amendments in force and IMO 469 (XII) "Guidelines for the design and construction of offshore supply vessel".
2. Fitted with Poscon electronic control system joystick, integrated to main propellers, main engines, rudders, side-thrusters and interfaced to gyro compass.
3. All cargo systems are controlled by a Tanktender system with discharge printer for FO and FW/DW.
4. Fitted with 5 remote cameras in winch-house for anchor-handling/towing operations with 2 TV monitors in wheelhouse.
5. Fitted with 2 Halogen searchlights, each 2000W, wheelhouse top and electrically operated from inside wheelhouse, 4 x 1000W flood-lights, for cargo deck.
6. Deck Power supplies:  
1 x 1000A x 440V x 3ph  
1 x 63A x 440V x 3ph  
1 x 32A x 220V x 1ph
7. Wood sheathed main deck except for aft area, which is steel plated for anchor-handling.
8. Welding and cutting equipment and lathe in workshop.
9. Fresh water ultra violet sterilizer.
10. Ulstein passive roll damping system.
11. Fire detection system fitted to the accommodation, engine room emergency generator space and all other spaces.
12. CO2 fire extinguishing system fitted in the engine room / paint locker / hydraulic pump room / emergency generator room.
13. Statutory liferafts, life-jackets, pyrotechnics.