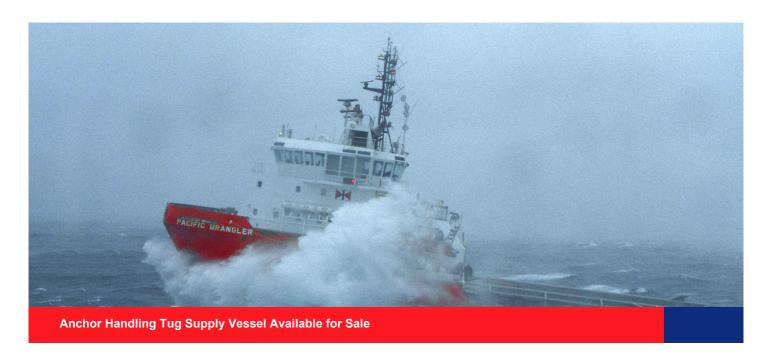
## **VESSEL SPECIFICATIONS**



Vessel is ideal for all round semi-submersible rig support operations. This **W** Class vessel have substantial horsepower and winch capabilities to heave anchors and tow rigs. She's also offering a sizeable cargo capacity. Vessel is equipped with Dynamic Positioning System (DP-2 Class) and a 300-tonne Brattvaag winch. Typical **Rolls-Royce UT710** Norwegian designs are also renowned for their excellent station keeping in rough weather/ harsh environmental conditions while proving to be reliable and adaptable to serve various operations, including but not limited to anchor handling, ROV support and salvage scopes of work.

Top Features		Key Specifications			
1.	Ideal for ROV & Towing operations.	Bollard Pull - 150 t			
2.	Large & comfortable accommodation.	• Free Deck Area - 471 m²			
3.	<ol> <li>High Capacity bollard pull for semi-sub anchor handling.</li> </ol>	Brake Horsepower - 10657 bHP			
		• Winch Line Pull - 300 t			
4.	Good Economical DP station keeping during operations.				

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# **VESSEL SPECIFICATIONS**



General Information					
Vessel Name	TBD Upon signing of NCNDA				
Built	INP Shipyard, Ulsan, South Korea, May 2003				
Flag	Indonesia				
Call Sign	TBD Upon signing of NCNDA				
IMO No.	TBD Upon signing of NCNDA				
Classification					
Class Notation	DNV-GL +1A1 Fire Fighter(I) Tug DK(+) DPS(2) E0 SF TMON				
Dimensions					
Length (LOA)	68.95 m				
Beam	15.5 m				
Summer Draft	6.0 m				
Deadweight @ SummerDraft	2155 t				
GT	2327				
Length, BP	60.45 m				
Length (Load Line)	62.65 m				
Depth, main deck	7.0 m				
Maximum Draft Midship	6.0 m				
NT	749				
Minimum Draft Midship	4.67 m				
Deck Capacities					
Deck Load Capacity	800 t				
Deck Strength	5 t/m² - General deck 10 t/m² - Aft AH deck				
Free Deck Area	471 m²				
Length x Width	36.8 x 12.8 m				
Tank Capacities					
NLS	See brine/mud				

Brine / Mud	459 m³ Brine (Multi usage tanks) 439 m³ Mud (Multi usage tanks, dedicated 293 m³)				
Drill / Ballast Water	101 m³ (dedicated) 1060 m³ (Multi usage tanks)				
Dry Bulk	224 m³ (in 4 tanks)				
Fresh Water	448 m³ (dedicated) 947 m³ (Multi usage tanks)				
Fuel Dedicated	797 m³				
Fuel Total	797 m³ (dedicated)				
Tank Capacities Details	Refer to Tank Capacities Table				
Drilling Brine	See brine/mud				
Ballast Water	101 m³ (dedicated) 1060 m³ (Multi usage tanks)				
Drill Water	101 m³ (dedicated) 1060 m³ (Multi usage tanks)				
Ship's Stores	Freezer (-25c) = 11 m <sup>3</sup> Chiller (+4c) = 9.5 m <sup>3</sup> Dry Store (+22c) = 23 m <sup>3</sup>				
Propulsion / Bollard Pull					
Main Engines	2 x Bergen BRM9 each 3975 kW = 7950 kW (10657 bHP) 2 x CPP propellers in KORT nozzles, with Hi-lift flap rudders				
Thrusters	2 x RRM bow thruster each 590 kW / 791 bHP 1 x RRM stern thruster each 590 kW / 791 bHP				
Bollard Pull	150 t at 100% MCR				
Shaft Generators	2 x shaft generators 1280 ekW (1600 kVA), 450v, 60 Hz				
Auxilliary Generators	2 x diesel/gen output 320 ekW (400 kVA), 450v, 60 Hz				
Emergency Generators	1 x diesel/gen output 65 ekW (80 kVA), 450v, 60 Hz				
Deck Equipment					

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1 x Tow winch 300 t 1st layer @ 0-7.0 m/min Wire capacity 1500 m of 76 mm dia.				
2 x AH winch each 300 t 1st layer @ 0-7.0 m/min Wire capacity 1200 m of 76 mm dia.				
450 t 1st layer				
2 x rope reels for storage pennant/tow wire Capacity of: 1500 m of 76 mm wire Duty 1st layer: 7.5 t at 0-48 m/min				
1 x wire store reel Capacity of: 1500 m of 76 mm wire Duty 1st layer: 7.5 t at 0-48 m/min				
1 x 195 m³ Chain capacity of: 2400 m 76 mm chain or 2000 m 84 mm chain				
4 x for ships with BP up to 240				
2 x for wire/chain with MBL up to 500 t				
RRM single drum with diameter 2.4 m x length 5.0 m @ 450 t SWL				
2 x RRM 8.5 t @ 0-20 m/min				
2 x RRM 10 t @ 0-38 m/min Storage capacity 100 m of 19 mm dia. Wire				
1 x electric hydraulic knuckle boom				
Capacity 5 t @ 10 m, 3 t @ 15 m				
Capacity 5 t @ 10 m, 3 t @ 15 m				
Capacity 5 t @ 10 m, 3 t @ 15 m 2 x 76 mm + 2 x 84 mm RRM combined windlass / mooring winch Duty on warping ends, 10.5 t @ 0-13.5 m/min, light line 0-45 m/min. Duty on cable lifters, nom pull 9.5 t @ 0-13.5 m/min, max pull 11.5 t. Duty on mooring drums, stowing capacity 120 m of 40 mm rope, duty on mooring drums 9.5 t @ 0-13.5 m/min,				
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Capacity 5 t @ 10 m, 3 t @ 15 m  2 x 76 mm + 2 x 84 mm  RRM combined windlass / mooring winch Duty on warping ends, 10.5 t @ 0-13.5 m/min, light line 0-45 m/min. Duty on cable lifters, nom pull 9.5 t @ 0-13.5 m/min, max pull 11.5 t. Duty on mooring drums, stowing capacity 120 m of 40 mm rope, duty on mooring drums 9.5 t @ 0-13.5 m/min, lowering 0-45 m/min.  1 x 200 t SWL located on fo'csle  1 x Furuno SN-7AF,RSB-0026 colour S-band (10 cm), ARPA 28" display, complete with				
Capacity 5 t @ 10 m, 3 t @ 15 m  2 x 76 mm + 2 x 84 mm  RRM combined windlass / mooring winch Duty on warping ends, 10.5 t @ 0-13.5 m/min, light line 0-45 m/min. Duty on cable lifters, nom pull 9.5 t @ 0-13.5 m/min, max pull 11.5 t. Duty on mooring drums, stowing capacity 120 m of 40 mm rope, duty on mooring drums 9.5 t @ 0-13.5 m/min, lowering 0-45 m/min.  1 x 200 t SWL located on fo'csle  1 x Furuno SN-7AF,RSB-0026 colour S-band (10 cm), ARPA 28" display, complete with remote display at aft console  1 x Furuno XN-4A,RSB- 0014colour X-band (3 cm),				
Capacity 5 t @ 10 m, 3 t @ 15 m  2 x 76 mm + 2 x 84 mm  RRM combined windlass / mooring winch Duty on warping ends, 10.5 t @ 0-13.5 m/min, light line 0-45 m/min. Duty on cable lifters, nom pull 9.5 t @ 0-13.5 m/min, max pull 11.5 t. Duty on mooring drums, stowing capacity 120 m of 40 mm rope, duty on mooring drums 9.5 t @ 0-13.5 m/min, lowering 0-45 m/min.  1 x 200 t SWL located on fo'csle  1 x Furuno SN-7AF,RSB-0026 colour S-band (10 cm), ARPA 28" display, complete with remote display at aft console  1 x Furuno XN-4A,RSB- 0014colour X-band (3 cm), ARPA 28" display				

GPS	Furuno GP-80			
Speed Log	Furuno Doppler DS - 80			
Communications	G.M.D.S.S. (Global Maritime Distress and Safety System) 1 x SSB 3 x VHF 2 x Inmarsat C 3 x VHF (portable) 2 x SART 1 x EPIRB 1 x Iridium 2 x VHF portable radios (icom) 6 x UHF			
Navtex Receiver	Sailor NAV-5			
Weather Fax	Furuno, Fax-214			
Satellite Communication	VSAT/FBB			
AIS	Fununo, FA-150			
VHF	1 x Sailor RT-4822 2 x Sailor RT-4722			
BNWAS	Martek Marine Navgard			
Discharge Pumps				
Fuel Oil	2 x 150 m³/hr at 9.0 bar			
Sludge	10 m³/hr at 2.0 bar			
Fresh Water	1 x 150 m³/hr at 9.0 bar			
Drill / Ballast Water	1 x 200 m³/hr at 9.0 bar			
Dry Bulk	2 x Screw type air compressors at 23 m³/min, 5.6 bar discharge rate of capacity 80 t/hr			
Special Liquids	1 x 75 m³/hr at 18 bar (Brine Discharge)			
Hose Connections	Fuel Oil - 4" Male Camlock Fresh Water - 5" Female camlock Drill Water - 5" Female camlock Mud/Brine - 5" Female camlock Dry Bulk - 5" Female Camlock			
Performance & Economy				
Economical Speed	Approx. 10 m³/day @ 7 kts (1 ME) Approx. 15 m³/day @ 10 kts (2 MEs)			
DP<20%	Approx. 11 m³/day			
DP>35%	Approx. 15 m³/day			
Standby in Field	Approx. 5.1 m³/day @ 1-4kts 1 ME Approx. 9.1 m³/day @ 1-4kts 2 Mes			
Standby in Port	Approx. 1.2 m³/day			
Note	Performance & Economy figures given at mean vessel draft of 5.5 m (1900 t deadweight) & Beaufort Scale 2			
Dynamic Positioning Syste	em			

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Туре	GE Energy C-Series DPS-21 Duplex DP System with RRM Poscon Independent Joystick System				
Reference Systems	2 x Sonardyne HPR prepared 2 x Veripos DGPS 1 x Fanbeam				
Motion Reference Units	3 x Gyro Tokimec 3 x Wind Sensor Gill 3 x VRU TTS DMS				
Control Modes	Auto sail Auto track (Low speed) Joystick auto heading DP DP minimum power ROV follow Mode control Auto station keeping Stand-by (for training)				
Joystick	Poscon - electronic control system joystick				
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 = 2400 m <sup>3</sup> /hr (Water) 2 x 300 m <sup>3</sup> /hr = 600 m <sup>3</sup> /hr (Foam)				
Throw Length	120 m				
Throw Height	50 m				
Foam Tank	12.3 m <sup>3</sup>				

- **Rescue Boat**
- 1.1 x Maritime Partner MP660 Springer, 10 person, SOLAS approved FRB with inboard diesel waterjet.

Anti-Pollution				
Dispersant Tank	12.3 m³			
Spray Booms	2 x Booms (1 port , 1 starboard) at 6 m			
Spray Nozzles	2 x Nozzles ber boom			
Accommodation				
Person Capacity	Total 30 10 x 1man cabin 4 x 2man cabins (Including hospital) 3 x 4man cabins			
Offices	2 x Offices			

### **Environmental Features**

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

#### Miscellaneous

- 1. Wood sheathed main deck except for aft area, which is steel plated for anchor-handling.
- 2. Ulstein passive roll damping system.
- 3. Deck Power supplies: 1 x 1000A x 440v x 3ph, 1 x 63A x 440v x 3ph, 1 x 32A x 220v x 1ph & 4 x 32A x 440v x 3ph

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## **Tank Capacities Table**

	W Class	Tank Cap	acities @	100%			
Tank	Volume	WB/DW	FW	FO	Brine	Mud	Glycol
1 Forepeak	101.7	101.7					
4 DB/Wing Tk 1P	123.8		123.8				
5 DB/Wing Tk 1S	126.1		126.1				
6 DB/Wing Tk 2P	47.6			47.6			
7 DB/Wing Tk 2S	59.8			59.8			
19 DB/Wing Tk 3P	61.6			61.6			
20 DB Tk 3S	34.2			34.2			
26 FO Settling Tk	34.2			34.2			
27 FO Service Tk	37			37			
28 FO Service Tk	37			37			
29 DB Tk 4P	88.2			88.2			
30 DB Tk 4S	88.2			88.2			
31 Wing Tk 4P	58.9	58.9			58.9		
32 Wing Tk 4S	58.9	58.9			58.9		
33 Rig Chain Locker	194.7	194.7			194.7		
35 Glycol/Bri/Mud/WB/DW Tk 1P	73.3	73.3			73.3	73.3	73.3
36 Glycol/Bri/Mud/WB/DW Tk 1S	73.3	73.3			73.3	73.3	73.3
38 Mud Tk 2P	73.3					73.3	
39 Mud Tk 2S	73.3					73.3	
40 DB/Wing Tk 5P	143.8			143.8			
41 DB/Wing Tk 5S	134.9			134.9			
43 Mud Tk 3P	73.3					73.3	
44 Mud Tk 3S	73.3					73.3	
46 DB/Centre Tk 6	34.9			31.4			
47 Wing Tk 6P	50.5		50.5				
49 Wing Tk 6S	50.5		50.5				
50 Wing Tk 7P	43.9	43.9	43.9				
51 Wing Tk 7S	43.9	43.9	43.9				
52 Stab Tk 1	256	256	256				
53 Stab Tk 2	155.5	155.5	155.5				
54 Aft Peak P	48.6		48.6				
55 Aft Peak S	48.6		48.6				
Dedicated Tanks:	@ 100%	101.7	448.1	797.9		293.2	
With Multiuse Tanks:	@ 100%	1060.1	947.4		459.1	439.8	146.6
		WB/DW	FW	FO	Brine	Mud	Glycol
	Bulk Capaci	ty of 224 m <sup>3</sup> in	four dedica	ted tanks		1	
33 Rig C	hain Locker canı	not be used fo	r chain & pro	duct at the sa	ame time		