

**ENQUIRY TECHNICAL SPECIFICATION AND SCOPE OF SUPPLY OF AIR  
& ELECTRIC WHISTLES FOR 2 Nos. 50 TONS BOLLARD PULL TUGS FOR  
KANDLA PORT TRUST VESSEL NOS. -11173-74**

**NOTE : FORWARDING OF COMPLIANCE FOR ENQUIRY TECHNICAL SPECIFICATION PART -A [ GENERAL] , PART- B [MACHINERY AND ELECTRICAL] IS A MANDATORY REQUIREMENT BY HSL WITHOUT WHICH OFFERS OF FIRMS SHALL BE CONSIDERED AS INCOMPLETE AND ARE LIABLE TO BE IGNORED.**

[A] BIDDING FIRM'S NAME :  
[B] BIDDING FIRM'S OFFER NO :  
[C] AUTHORIZED SIGNATORY OF THE FIRM :

**PART A - GENERAL PART**

Clause No.	Description of technical specification	Vendors Reply: Complied & cost included in offer mentioned above At [B]
1.	<b><u>Requirement:</u></b> Quantities specified in attached Part A & B are for One (1) Vessel. Total requirement is for Two (2) Vessels.	
2	<b><u>Rules, Inspection and Certification by Class</u></b>	
2.1	<b><u>Classification Rule :</u></b> The Tug shall be built for Classification with Indian Register of Shipping to obtain + SUL + IY TUG [Restricted Service] FIFI AGNI I of I.R.S., i.e. Restricted sea going vessel and machinery built and installed under supervision of the Surveyors of I.R.S. to the Rules of Indian Register of Shipping and has an External Fire Fighting arrangement to IRS AGNI – I standard . The vessel shall comply with latest IMS Rules as applicable to this type of vessel [Class XII] and with the Inland Vessels act.	
2.2	Type approval : The manufacturing and production of complete equipment shall be type approved by Class and relevant certificate shall have validity for 3 to 5 years from the date of issue of Purchase Order.	
2.3	The complete equipment shall be tested in presence of Class in manufacturer's workshop and test certificate shall be produced.	
2.4	Inspection and commissioning of complete equipment onboard shall be carried out in presence of Class, Ship owners and HSL.	
2.5	Electrical installations to confirm to latest classifications / IEC regulations.	
2.6	Vendor has to directly contact classification / statutory authorities as required for approval of drawings, testing, inspection certification etc. and arrange the same to fulfill class requirement.	

Clause No.	Description of technical specification	Vendors Reply: Complied & cost included in offer mentioned above At [B]
2.7	Class approved Certificates, drawings and documents in triplicate (one original + 2 Copies)	
2.8	All documents of machinery /equipment shall conform to latest SOLAS , IMO & IMS regulations as applicable in this type of vessel ( Class XII) etc.	
3.	<b>Documents to be submitted after order</b>	
3.1	All installation, foundation, piping and Electrical line, wiring, terminal connections, dimensional drawings, material lists, level switches installation details etc., shall be supplied in 3 sets for HSL approvals within 2 weeks after order.	
3.2	Final Drawings shall be supplied in three (3) sets hard copies and 1 set of reproducible transparencies and in soft DWG format (AUTOCAD 2004) in C.D ROM. in within 2 weeks after approval from HSL	
3.3	Six (6) sets of instruction, operation, maintenance, parts list and spare parts manual for Machinery, Electrical and electronic equipment within 12 weeks after order	
3.4	Manufacturer Test Certificates and reports for complete equipment. Calibration certificates for parameter monitoring components in triplicate ( 1 Original + 2 copies) shall be supplied along with each equipment	
4	<b>Tools and fittings required for Installation of equipment :</b>	
4.1	Foundation bolts and nuts, other fasteners, flanges, counter flanges, unions for screwed connections, etc. for inlet and outlet connections of equipment supplied	
4.2	All approved water tight cable Glands and terminal boxes as required shall be supplied for electrical installation	
5.	Electrical equipment on weather deck shall be water tight	
6	If any other voltage other than the above mentioned voltage is necessary for the operation of the equipment, necessary transformers / rectifiers shall be included in the scope of supply	
7	Equipment to be designed to work satisfactorily on voltage variation from +6 to -10% of the rated value at the rated frequency and frequency variation from $\pm 5\%$ of the rated value at the rated voltage	
8	<b>Class and manufacturer recommended Spares</b>	
9	<b>Class and manufacturer recommended tools</b> One set of tools by which whistle can be dismantled and assembled	
10	<b>Product Support :</b> Supplier should confirm that they will provide product support for a minimum period of 10 Years from the date of delivery of the vessel for complete Machinery and Electrical equipment being supplied by them.	
11	<b>Onboard Training :</b> The manufacturer shall provide training to technical crew onboard regarding operation and maintenance of the equipment supplied for Mechanical, Electrical & Electronic part. Training program will be conducted at HSL. Training shall be imparted by service Engineer at the time of commissioning.	

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12	Systems and features not included in the specification, which vendors deem necessary for satisfactory operation of the supplied system shall be supplied free of cost even if observed during installation and commissioning	
13	Weight is one of the most important criteria for selection of the equipment therefore , maximum weight of the equipment viz. Air Whistle + Electric whistle + Accessories should be within <b>70 Kgs</b>	
14	The vendor shall clearly indicate their reference list and the field records showing well proven performance of their equipment	
15	Name plate of equipment to be written in English . Name plate to be either phenolic plate or brass with engraved lettering printed with opposite colour	
16.	<b>Documents to be submitted along offer</b>	
16.1	Technical leaflet catalogues and reference lists of installation for the quoted equipment	
16.2	Performance characteristic curves indicating duty points	
16.3	G.A Drawing of complete equipment showing foundation and dimensional details with total weight.	
16.4	Operational details, basic electrical schematic diagrams etc	

**THE BIDDER SHALL ENSURE THAT THE OFFERED MACHINERY / EQUIPMENT PERFORM TO UNDER MENTIONED SERVICE CONDITIONS**

<b>MAIN PARTICULARS OF SHIP AS PER GA DRG. NO 50018 CC , PROJECT REF : DP-424</b>	
LOA	: 32.725 M
LBP	: 32.000 M
Breadth [Mld]	: 10.80 M
Depth [Mld] Main hull	: 4.50 M
Draft [Bottom of Appendage]:	3 M
Speed at 90 % MCR	: 12 Knots
Bollard pull at 90 % MCR	: 50T at trial displacement of 50% Load of fuel & fresh water at calm sea
MCR power	: 1875 KW x Two Engines
<b>SERVICE CONDITIONS</b>	
Sea water temperature	: 32 degree C
External temperature	: 40 degree C
Machinery spaces temp.	: 50 degree C
Humidity	: About 60% at 40 degree deg C

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**PART – B MACHINERY & ELECTRICAL**

Clause No.	Description of technical specification	Vendors Reply: Complied & cost included in offer mentioned above At [B]
2	<b>Scope of supply :</b>	
2.1	<b>Air Horn -- 1 No.</b>	
2.1.1	Air Horn shall be operated by compressed air. Manual and electrical operation shall be available from the manual lever and the solenoid. Second solenoid shall be used for the emergency operation when the original source has failed.	
	Frequency : 310 Hz	
	Sound pressure level : (dB/1m)>130dB	
	Power supply : 230V AC, 1Ph, 50Hz	
	For second solenoid : 24VDC emergency supply	
2.1.2	<b>FITTINGS :</b>	
2.1.2.1	The whistle to be electrically operated and equipped with fine wire mesh, Y-type filter as required to prevent the ingress of foreign matter in to the air supply line.	
2.1.2.2	Available air pressure onboard the vessel is 30Kg/cm <sup>2</sup> as above. The requirement of the air pressure for the offered whistle shall be indicated.	
2.1.2.3	The operating electro-pneumatic valve unit shall be electrically heated (to prevent condensation) with thermostatic regulator.	
2.1.2.4	Winter heating is not required.	
2.1.2.5	Solenoid valves shall be provided for electric release.	
2.1.2.6	Lanyard(lever with hand pull rope) shall be provided	
2.1.2.7	Compressed air whistle shall be controlled through automatic fog signal control unit.	
2.1.2.8	Equipment shall be suitable for operation on 230V AC single phase,50Hz supply.	
2.1.2.9	Second electro magnet for emergency current to spare the pull rope to operate at 24V DC as per SOLAS 1960/74.	
2.1.2.10	Suitable brass cable entry glands shall be provided for receiving all the HSL cables.	
		<b>Vendors</b>

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2.1.2.11	Screwed unions are to be supplied for all pipe connections of the equipment. For flanged end connections, if any, counter flanges complete with bolts, nuts and washers/lock nuts shall be included.	
2.1.2.12	Air strainer : 1 No.	
2.1.2.13	Air pressure reducing valve [from 3.0 Mpa to 0.7 Mpa] : 1 No.	
2.2	<b>Electric Horn: 1 No.</b>	
2.2.1	Electrical Horn is electrically driven and equipped with the electro-magnet & Oscillator unit to be sounded. Oscillator unit has a variety of sound control function.	
	Frequency : 420 Hz	
	Sound pressure level : (dB/1m)>130dB	
	Power supply : 230V AC, 1Ph, 50Hz	
2.2.2	<b>FITTINGS:</b>	
2.2.2.1	Heater with thermostat shall be provided to prevent condensation.	
2.2.2.2	Winter heating is not required	
2.2.2.3	The electric whistle system shall be suitable for operation on 230V AC 1 Ph,50Hz, in normal and 24 V DC in emergency conditions through ship's battery charger. It shall be controlled through automatic fog signal control unit	
2.2.2.4	Suitable brass cable entry glands shall be provided for receiving all the HSL cables	
2.3	<b>SIGNAL AUTOMATION UNIT - 1 No.</b>	
2.3.1	1 no. fog signal automation unit to be operated on 230V, 1 PH , 50Hz power supply, normally and auto changeover to 24V DC emergency supply when normal supply fails, designed for transmitting different signals in accordance with rule 35 ( a,b,c,e and g) of IMO –1972 shall be provided.	
2.3.2	The fog signal unit shall be suitable for flush console mounting	
2.3.3	The unit shall have the following features. a)Manual sound signals b) Parallel switching of sound and light signals. c) Light signals d)Whistle pre-selection e)Dimmer for illumination control of keys f)Connection to general alarm automation	
2.3.4	The manual signals shall override automated signals	
2.4	<b>MORSE/MANOEUVRE SIGNAL LAMP- 1 No.</b>	
	Signal light shall be visible around the horizon at a distance of at least five nautical miles. It shall be operated simultaneously and remain lighted and visible during the same period as that of signal. It shall be operated on 230V , single phase , 50Hz / 24 V DC power supply..	

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2.5	<b>SIGNAL KEYS</b>										
2.5.1	For sound signals: 2 nos push button keys, suitable for bulkhead mounting inside bridge shall be supplied.										
2.5.2	1 No. Push Switch for operation of emergency solenoid for Air Horn shall be supplied. The unit shall be suitable for flush mounting on the Bridge Console										
2.5.3	For light signals: 2 nos . Morse light keys, water tight IP 56 protection for 240 V AC suitable for bulkhead mounting on outdoor bridge wings shall be supplied										
2.5.4	Suitable size brass cable entry glands shall be provided for all the above keys										
2.6	Class and manufacturer recommended Spares										
2.7	Class and manufacturer recommended Tools										
2.8	The following spare parts shall necessarily be included in scope of supply. Separate Unit Price for the spare parts shall be indicated in the price bid.										
	<table border="0"> <tr> <td>a) Morse light bulb</td> <td>: 1 No for 240 V AC</td> </tr> <tr> <td>b) Contactor assembly, one of each type Installed in control panels</td> <td>: 3 Nos each type and size</td> </tr> <tr> <td>c) Solenoid Switches</td> <td>: 2 Sets</td> </tr> <tr> <td>d) Contactors, Overload relays and Timers of various capacity fitted on board</td> <td>: 3 Nos of each type (Make of Relays – Siemens)</td> </tr> <tr> <td>e) Fuse base, HRC fuses and bottle type Fuses of various capacities fitted on board</td> <td>: 12 Nos of each type</td> </tr> </table>	a) Morse light bulb	: 1 No for 240 V AC	b) Contactor assembly, one of each type Installed in control panels	: 3 Nos each type and size	c) Solenoid Switches	: 2 Sets	d) Contactors, Overload relays and Timers of various capacity fitted on board	: 3 Nos of each type (Make of Relays – Siemens)	e) Fuse base, HRC fuses and bottle type Fuses of various capacities fitted on board	: 12 Nos of each type
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2.9	<b>ELECTRICAL PART</b>										
2.9.1	Electrical equipment on weather deck shall be water proof										
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2.9.3	Equipment to be designed to work satisfactorily on voltage variation from +6 to –10% of the rated value at the rated frequency and frequency variation from $\pm 5\%$ of the rated value at the rated voltage										

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