Integrity Pact shall be signed on each page by the authorized representative of the bidder and submit/upload along with the Part-I bid, shall render the bid liable for rejection.

Bidder to note that the shortfall information/documents shall be sought only in case of historical documents which pre-existed at the time of the tender opening i.e submitted along with original bid and which have not undergone change since then.

1. **DESCRIPTION & SCOPE OF WORK**:
   (a) **MAIN EQUIPMENT/ITEM/SYSTEM** : Procurement of Exhaust System for Main Engines of 14 FPV's (Y-16501 to Y-16514) of CGP as per TSP.
   (b) **ON BOARD SPARES (OBS):** NA.
   (c) **DOCUMENTATION:** As per TSP.
   (d) **SERVICES**: As per tendered items and TSP.
   (e) **TRAINING:** NA.
   (f) **EXTENSION OF WARRANTY:** NA.
   (g) **OBS AND BASE & DEPOT (B&D) SPARES**: NA.

2. **EARNEST MONEY DEPOSIT: INR 7,00,000/-** . EMD shall be submitted as per GeM Terms & condition.

EMD exemption will be applicable as per GeM conditions and bidders shall upload valid EMD/EMD Exemption Certificate along with the bid. **In case of Non-submission of EMD, or valid EMD exemption certificate, the offer of the firm will be categorically rejected.**

EMD is also exempted for the bidder's permanent registered with MDL. To qualify for EMD exemption, bidder shall upload valid copy of the Registration Certificate issued by MDL, for the tendered items for which the offer is being submitted. **Firms in the process of obtaining MDL registration will not be considered for EMD exemption.**

EMD shall be forwarded to DGM/PE(C-CGP), 5th Floor, New Service Block, North Yard, Mazagon Dock Shipbuilders Limited, Shipbuilding Division, Dock Yard Road, Mumbai400010, Maharashtra, in sealed envelope super scribing Tender Enquiry No. and Due date, so as to reach us within 7 MDL working days from the tender closing date. The scanned image of EMD shall be uploaded at Part-I tender stage.

Note:
a) EMD of unsuccessful bidders will be returned after finalization of the tender and shall be interest free.
b) EMD of successful bidders may be converted into performance security or refunded on receipt of performance security. The returned / refunded EMD would be interest free.

MDL BANK DETAILS:
Name of Bank A/C Holder: Mazagon Dock Shipbuilders Limited
Bank and Branch: State Bank of India, Commercial Branch, Fort, Mumbai-400023
Type of Account: Current Bank
Account No: 11079519138
IFSC Code: SBIN0006070
Swift Code: SBININBB101
PAN No.: AAACM8029J
MDL GST: 27AAACM8029J1ZA

3. **PRE-QUALIFICATION CRITERIA**:

a) Technical Pre-qualification:

Supplier shall provide details on their capability in Design, Supply, Installation & commissioning of an Exhaust system for Diesel Engine or Diesel Generator of capacity of 2000 Kw or above. Supplier to provide PO Copies along with proof of supply like Work Completion Certificate (WCC) or Inspection Report from Third Party Inspection Agency or Buyer Certified Invoice or Buyer Certified Delivery Challan.

b) Commercial Qualification:

Following Documents to be submitted mandatorily:

(i) The average annual financial turnover of 'The bidder' during the **last three years**, ending 31st March (or any other year ending followed in relevant country) of the previous financial year excluding the calendar year of tendering should be at INR 46.67 Lakhs as per the annual report (audited balance sheet as applicable and profit and loss account) of the relevant period, duly authenticated by a Chartered Accountant/Cost Account. Item being critical in nature so no relaxation is there to Start-ups. However, for MSME's, relaxation is there in turnover criteria but not for technical pre-qualification as requested above. Ant in India or equivalent in relevant countries

(ii) Bidders Shop and establishment registration certificate or registration certificate from registrar of firms or certificate of incorporation from Registrar of Companies (Not required for permanent registered vendors with MDL, in such case MDL Permanent Registration certificate attach.)

(iii) GST certificate, PAN card cancelled cheque.

(iv) Valid MSE Certificate with proof of manufacturing i.e **OEM certification** on firms Letterhead, in case applying for MSME PPP.

(v) Local Content Declaration.

4. **VALIDITY PERIOD OF OFFER**:

(a) Bid / Offer shall have the validity period of **180 days** from the tender closing date for the tendered equipment along with the required documentation.

(b) In case the day up to which the bids are to remain valid falls on/ subsequently declared a holiday or closed day for MDL, the bid validity shall automatically be deemed to be extended up to the next working day.

(c) In exceptional circumstances, before the expiry of the original time limit, MDL may request the bidder to extend the validity period for a specified additional period. The request and the bidders' responses shall be made in writing or electronically. A bidder may agree to or reject the request. A bidder who has agreed to MDL's request for extension of bid validity, in no case, he shall be permitted to modify his bid.

5. **BID REJECTION CRITERIA**

(i) Failure to submit sufficient or complete details for evaluation of the bids within a week.

(ii) Incomplete / misleading / ambiguous bids in the considered opinion of TNC /CNC.

(iii) Bidder not quoting for all the line items in the tender, or submitting incomplete "Quoted/ Not Quoted" i.e Blank Rate Sheet. The same is required duly attested on each page to be well noted.

(iv) Bid with technical requirements and or terms not acceptable to MDL/Customers/External agency nominated as applicable. MDL shall not entertain any deviation sought, which is not accepted to MDL.

(v) Bidder not submitting self-certification for local content & Bid received from non –local supplier i.e. Bidder who submit their quote with less than 20% local content.

(vi) Any deviation w.r.t. of tender documents.

(vii) Bidders not submitting documents requested at para 3.

6. **SUBMISSION OF OFFER IN TWO BID SYSTEM**: Offer must be submitted in two parts as follows,

a) Part I (Techno Commercial Bid):

The bidder shall ensure following are essentially included in the Part-I bid :

(i) Technical & Commercial offer.

(ii) Blank rate sheet indicating quoted/not quoted against each line item, tax percentage, type of taxes duly mentioning the price breakup for each line item in terms of percentage of total quote.

(iii) Declaration of "Local Content" as per attached enclosure. The same to be attested on each page.

(iv) Declaration of attested Land Border Certificate as per attached enclosure.

(v) Bidder contact details as per attached enclosure" Contact Details of the bidder.

(vi) ATC Document, duly attested on each page.

(vii) Documents requested at para 3.

b) Part-II (Price Bid):

(i) Prices for each of the listed items has to be uploaded on GEM.
(ii) No Price Variation Clause applicable. Prices to be firm & fixed in INR only for all Line items.

7. **EVALUATION CRITERIA:** Overall lowest as per GEM terms**.**

8. **PRICING:** Fixed Price (INR)

9. **DELIVERY TIMILINES/ PERIOD/COMPLETION SCHEDULE:**

Yard	Tender Line Item's Timeline **for Item Delivery**	Tender Line Items Timeline **for Completion of Services**
16501	10 to 30 – PO+04 Months	40 to 50 – PO+06 Months
16502	60 to 80 – PO+04 Months	90 to 100 – PO+06 Months
16503	110 to 130 – PO+06 Months	140 to 150 – PO+08 Months
16504	160 to 180 – PO+06 Months	190 to 200 – PO+08 Months
16505	210 to 230 – PO+08 Months	240 to 250 – PO+10 Months
16506	260 to 280 – PO+08 Months	290 to 300 – PO+10 Months
16507	310 to 330 – PO+10 Months	340 to 350 – PO+12 Months
16508	360 to 380 – PO+12 Months	390 to 400 – PO+14 Months
16509	410 to 430 – PO+14 Months	440 to 450 – PO+16 Months
16510	460 to 480 – PO+16 Months	490 to 500 – PO+18 Months

16511	510 to 530 – PO+18 Months	540 to 550 – PO+20 Months
16512	560 to 580 – PO+20 Months	590 to 600 – PO+22 Months
16513	610 to 630 – PO+22 Months	640 to 650 – PO+24 Months
16514	660 to 680 – PO+24 Months	690 to 700 – PO+26 Months

10. **CONSIGNEE/DELIVERY LOCATION:**

(Main Equipment including Documentation0

HOS, Bond Stores,

Mazagon Dock Shipbuilder Ltd,

Anik Chembur Bond Store,

Kurla Mahul Road, Mumbai-400074.

Tel: 022-255 40404/44838/43123.

11. **WARRANTY/GUARANTEE**:

(a) Standard performance for a period of 12 months from the date of delivery of equipment to MDL.

(b) The Supplier cannot absolve their responsibility for warranty of system even though it is inspected & approved by Coast Guard and MDL.

(c) If the defects are not remedied within a reasonable/stipulated time, MDL may proceed to rectify the defects at the supplier's risk & cost, but without prejudice to MDL's rights under the contract.

(d) During the period of warranty / guarantee if any defect noticed in the equipment / item supplied, the supplier/ contractor will have to rectify such defects immediately at no extra cost to MDL.

12. **PERFORMANCE SECURITY (EPBG)**: As per GEM Terms,

(a) Performance Security for an amount equal to 5% of contract value payable in Indian Rupees shall be submitted as per GeM.

(b) Performance Security is to be furnished as per GeM, within 15 days of award of contract and it should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations.

(c) In case of failure to submit performance security by the supplier within 15 days of transmission / notification of order by any mode, MDL reserves right to cancel the order and invoke the risk purchase clause.

(d) Performance security may be furnished in the form of NEFT / Demand Draft / Pay order / Bank Guarantee / Insurance Security Bond / e-Bank Guarantee in favour of Mazagon Dock Shipbuilders Limited, Mumbai from the list of Banks approved by SBI / Canara Bank published on MDL website.

Key regulatory provisions under Insurance Surety Guidelines which are noteworthy are given below:

- Available for only Indian Projects: Surety Bonds cannot be issued if the underlying asset/ commitment is outside India. Further, the payment for risk covered under the Surety Bonds shall be made in Indian Rupees. Hence, Surety Bonds can be issued for domestic projects only, and not for Indian project contractors' engaging in infrastructure projects outside India.
- Applicability: The insurer (Insurance Company) should be an Indian Insurance Company as defined in Section 2(7A) of the Insurance Act, 1938 and the insurer should also be registered under the Insurance Act, 1938 to transact the business of general insurance.
- Formats for Insurance Surety Bonds: The indicative formats for ISBs described at above are collectively placed at Annexures to this corrigendum.

(e) PS can also be remitted online through MDL website: https://www. mazagondock.in /OnlinePayment.aspx.
Or
one can find Online payment tab on MDL website home page as under:

- Go to www.mazagondock.in
- Click on Online payment tab available on home page.
- 4 option viz. Career, Tender, Security, Scrap/ Disposal will be available.
- Click on the Tender tab and make the payment online using Debit cards, Credit Cards, Net banking, BHIM/ UPI etc. after filling the required details.

13. **PRESERVATION, LABELING & PACKING:**

Preservation/Packing/Conditioning shall be as per standard industrial packing norms.

14. **TAXES & DUTIES**: To be included in the submitted quote, as per GEM & Govt. guidelines.

15. **INTEGRITY PACT (IP):** Applicable.

The Integrity pact essentially envisages the agreement between prospective vendors / bidders & buyers committing the person/officials of both the parties not to exercise any corrupt influence on any aspects of the contract. Only those vendors/bidders who enter into such an integrity pact with the buyer would be competent to participate in the bid. Therefore, non-acceptance and non-submission of IP by the vendors/bidders shall render the bid liable for rejection. The format of integrity Pact is enclosed with tender documents. IP shall be submitted on plain paper. The 'Integrity pact' dully filled as per enclosed format to be submitted along with the offer. Bidders to ensure that each page of Integrity pact shall be duly signed by the bidder. Non-submission of Integrity Pact by the bidders duly signed on each page along with Part-I bid shall render the bid liable for rejection**. Bidders shall send original IP to MDL within 7 days' post tender closing date, format of which is as tendered & attached with this ATC**.

Independent External Monitors (IEM): The following Independent External Monitors (IEMs) will have the power to access the entire project document and examine any complaints received by him. In case of any change in IEMs it will be informed accordingly.
For any administrative enquires and clarification on tender, bidders shall contact Commercial Dealing Executive. In case of issues related to Integrity Pact (IP) please contact Independent External Monitor (IEM) whose details are as below:

(i) Mr. M.N. Krishnamurthy, IPS (Retd) - Email id: krishnamurthymn19@gmail.com

(ii) Mr. Deepak Kashyap, IRTS, (Retd) – Email id: deepakkashyapnd02@gmail.com

16. **INSPECTION**:

Inspection Agency: MDL nominated Third Party Inspectors (IACS) at Vendors Premises, and MDL QC &/or ICG for On-Board work. Cost of Inspection to be borne by MDL.

Receipt Inspection: CGRPT & MDL (Mumbai).

Other general conditions related to inspection of material are as under:

(a) The decision of the Inspecting Authority or their representatives, as the case may be, on any question of the intent, meaning and the scope of Specifications / Standards shall be final, conclusive and binding on the Bidder/ Supplier / Contractor.

(b) Any special testing involving financial implications shall be settled prior to placement of the order and such cost should form part of the evaluation.

(c) **Receipt Inspection:** MDL along with CGRPT shall carry out necessary inspection of the items on receipt in the MDL on the basis of appropriate MDL Inspection system requirements & the Inspection documents submitted by suppliers. Any objection raised by MDL/CGRPT inspection team against quality of material or workmanship shall be satisfactorily corrected by the supplier at his expenses including replacement as may be required within shortest possible time within 30 days. Items damaged during transit shall also be rectified or replaced by the supplier within shortest possible time.

(d) **Rejection of the material:** Any portion of the equipment found defective/rejected, the supplier shall collect the same at his cost from the MDL Yard, all incidental charges being born by supplier, (inclusive of custom duty, if payable), within 30 days from the date of intimation to the supplier of such rejection. The MDL reserves the rights to dispose-off the rejected item at the end of a total period of 90 days in any manner, to the best advantage to the MDL & recover storage charges & any consequential damages, from sale proceeds of such disposal.

17. **PAYMENT TERMS**:

(a) **Main Equipment including Documentation:**

I. On receipt of Invoice, 95 % of Payment shall be made within 10 days from generation of Consignee Receipt & Acceptance Certificate (CRAC) of material and as reduced by any deductibles and / or the amount leviable towards liquidated damages, if any plus 100% taxes, duties etc. as applicable.

II. Payment of the balance of the value of the supplies may be payable and as reduced by any deductibles and / or the amount leviable towards liquidated damages, if any, on submission & confirmation of PS of equivalent amount valid up to warranty period plus 60 days.

(b) **Services:** 100% payment for all kinds of services like STW, HAT, installation, commissioning assistance wherever included in the same order will be admissible for payment within 15 days from Generation of CRAC & submission of original Work Completion Certificate & SAP Service Sheet signed by CM or above of production/planning dept. and ink signed invoice.

18. **LIQUIDATED DAMAGES (LD)**: As per GEM terms & conditions.

19. **CONTACT DETAILS FOR QUERIES**: In case of any clarifications regarding tender condition/TSP/specification, bidders are requested to contact the following person, before the closing date of the tender.

Design Dept.	Mr. Sriram V., HOD (D-NP)	+91 22 2376 3029	sriram@mazdock.com
	Mr. Rohan Patil, M (D-NP.)	+91 22 2376 3375	rdpatil@mazdock.com
Commercial Dept.	Mr.D S Chavan, HOD (D-CGP)	+91 22 2376 2782	dschavan@mazdock.com
	Mr. H V Mishra, M (C-CGP)	+91 22 2376 2764	hvmishra@mazdock.com

20. We look forward to receive your most competitive and reasonable offer against this tender.

Annexure-B-2

DECLARATION CERTIFICATE FOR LOCAL CONTENT
(Tender value more than Rs 10 Crores)

This declaration must form part of all tenders & it contains general information and serves as a declaration form for all bidders. (Before completing this declaration, bidders must study the General Conditions, Definitions, Govt. Directives applicable in respect of Local Content & prescribed tender conditions).

THE BIDDER SHALL PROVIDE THIS CERTIFICATE FROM STATUTORY AUDITOR OR COST AUDITOR OF THE COMPANY (IN CASE OF COMPANIES) OR FROM A PRACTICING COST ACCOUNTANT OR PRACTICING CHARTERED ACCOUNTANT (IN RESPECT OF SUPPLIER OTHER THAN COMPANIES) GIVING THE PERCENTAGE OF LOCAL CONTENT.

IN RESPECT OF BID/ TENDER No: ……
ISSUED BY (Name of Firm): ……
I, the undersigned, …….. (full names), do hereby declare, in my capacity as ……..…….. of .....(name of bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have read and understood the requirement of local content (LC) and same is specified as percentage calculated in accordance with the definition provided at clause 2 of revised Public Procurement (preference to Make in India) Order 2017.

"Local content" as per above order means the amount of value added in India which shall be the total value of items procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value in percent."

(c) I have satisfied myself that the goods/services/works to be delivered in terms of the above specified bid comply with the local content requirements as specified in the tender for 'Class-I Local Supplier' / 'Class-II Local Supplier', and as above.

i. I seek benefits against the following policy:

1) PPP MSE Order 2012 ☐ (Applicable for MSE manufacturers)

2) PPP MII 2017 ☐ (Applicable for Class I suppliers as well as MSE manufacturers)

(Note: If not declared / selected it shall be deemed that purchase preference benefit is sought under PPP MII 2017 policy).

(e) The local content calculated using the definition given above are as under:

Tender Item Sr. No	Local content calculated as above %	Location of local value addition (Location shall be the specified as name of city or district, etc.)

Attach separate sheet duly signed if the space not sufficient.

NB: Local content percentage shall be declared item wise or tender wise strictly as per the terms of the tender.

(f) I accept that the Procurement Authority / Institution / MDL / Nodal Ministry has the right to request that the local content be verified in terms of the requirements of revised Public Procurement (preference to Make in India) Order 2017 dated 19.07.2024 and I shall furnish the document / information on demand. Failure on my part to furnish the data will be treated as false declaration as per PPP MII Order 2017. In case of contract being awarded, I undertake to retain the relevant documents for 7 years from date of execution.

(g) I understand that the submission of incorrect data, or data that are not verifiable as described in revised Public Procurement (preference to Make in India) Order 2017, may result in the Procurement Authority / Nodal Ministry / MDL imposing any or all of the remedies as provided for in Clause 9 of the Revised Public Procurement (preference to Make in India) Order 2017 dated 19.07.2024.

SIGNATURE: _____ **DATE: _____**
of Competent Authority

Seal / Stamp of Bidders

Annexure-2

Format for Compliance Certificate w.r.t. Land Border Clause

Declaration of Compliance of Order (Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017

This declaration must form part of all tenders & it contains general information and serves as a declaration form for all bidders. (Before completing this declaration, bidders must study the General Conditions, Definitions, Govt Directives applicable in respect of Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 and OM No F.7/10/2021/-PPD(1) dated 23.02.2023 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017& prescribed tender conditions).

DECLARATION BY AUTHORISED SIGNATORY OF THE FIRM

I, the undersigned, ... (*full names*),
do hereby declare, in my capacity as .....
of M/s .....(*name of bidder entity*), that:

1) The facts contained herein are within my own personal knowledge.

2) I have read the Order (Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 and OM No F.7/10/2021/-PPD(1) dated 23.02.2023 on the subject of Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 regarding restrictions on procurement from a bidder of a country which shares a land border with India and comply to all the provisions of the Order

3) I certify that M/s .....(*name of bidder entity*) *is not from such a country or, is from such a country (strike out whichever is not applicable.* I hereby certify that this SUPPLIER fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority is attached]

4) I understand that the submission of incorrect data and / or if certificate / declaration given by M/s .....(*name of bidder entity*) is found to be false, this would be a ground for immediate termination and further legal action in accordance with law as per Clause 12 of the Public Order on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017

AUTHORISED SIGNATURE: _____ **DATE:** _____

Seal / Stamp of Bidder

VENDOR DETAILS

ENCLOSURE TO MDL Tender No:	
Name of Bidder:	
Address:	
Contact Number:	
email id:	
Details of Authorised Representatives; (Three Levels)	

1	Name:	
	Designation	
	Direct Landline Number:	
	Mobile Number:	
	Email id:	

2	Name:	
	Designation	
	Direct Landline Number:	
	Mobile Number:	
	Email id:	

3	Name:	
	Designation	
	Direct Landline Number:	
	Mobile Number:	
	Email id:	

Supply of Exhaust System Main Diesel Engine for 14FPVs for ICG Project

Sr. No.	Material / Service Details	Quantity/unit
1	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV-Y-16501	3.000 NOS
2	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
3	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
4	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
5	Service Description:- Assistance during Harbour Trials (HATs)	1.000 AU
6	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV-Y-16502	3.000 NOS
7	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
8	Service Description: - Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System. - Y-16502	1.000 AU
9.	Service Description: - Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
10	Service Description: - Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
11	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV - Y-16503	3.000 NOS
12	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
13	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
14	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU

Supply of Exhaust System Main Diesel Engine for 14FPVs for ICG Project

15	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
16	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16504	3.000 NOS
17	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
18	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
19	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
20	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
21	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16505	3.000 NOS
22	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
23	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
24	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
25	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
26	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16506	3.000 NOS
27	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
28	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
29	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU

Supply of Exhaust System Main Diesel Engine for 14FPVs for ICG Project

30	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
31	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16507	3.000 NOS
32	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
33	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
34	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
35	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
36	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV-Y-16508	3.000 NOS
37	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
38	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
39	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
40	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
41	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16509	3.000 NOS
42	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
43	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
44	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU

Supply of Exhaust System Main Diesel Engine for 14FPVs for ICG Project

45	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
46	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV-Y-16510	3.000 NOS
47	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
48	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
49	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System.	1.000 AU
50	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
51	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV-Y-16511	3.000 NOS
52	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
53	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
54	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
55	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
56	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV-Y-16512	3.000 NOS
57	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
58	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
59	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU

Supply of Exhaust System Main Diesel Engine for 14FPVs for ICG Project

60	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
61	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16513	3.000 NOS
62	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
63	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
64	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
65	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU
66	Material Details:- Design, manufacture and supply of DIESEL ENGINE Exhaust SYSTEM AS PER TSP ICG FPV- Y-16514	3.000 NOS
67	Material Details:- Design, manufacture and supply of Main Diesel Generator Exhaust System AS PER TSP ICG FPV	3.000 NOS
68	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) DIESEL ENGINE Exhaust System.	1.000 AU
69	Service Description:- Vendor to carry out on-board installation (erection and Setting to Work) of all three (03) Main Diesel Generator Exhaust System	1.000 AU
70	Service Description:- Assistance during Harbour Trials (HATs) and sea trials (SATs)	1.000 AU

MAZAGON DOCK SHIPBUILDERS LIMITED

(A Govt. Of India Undertaking)

SHIPBUILDING DESIGN ENGINEERING
DOCKYARD ROAD, MUMBAI - 400 010

STATEMENT OF TECHNICAL REQUIREMENTS
FOR
Exhaust systems for the Diesel engine and Main diesel generator for FPV

PROJECT	:	14 Nos FAST PATROL VESSELS (FPV)
YARD NOS MDL	:	16501/16502/16503/16504/16505/16506/16507/ 16508/16509/16510/16511/16512/16513/16514
CLIENT	:	INDIAN COAST GUARD
DOCUMENT NO	:	3040
ICG HQ REFERENCE / APPROVAL	:	Not applicable
CLASSIFICATION NOTATION	:	+ A1 HSC (Special Government Service) + AMS or equivalent.

REV	DESCRIPTION	DATE	AUTHORISED BY
00	First Issue	10-07-2025	

ROHAN PATIL M (D-E) Prepared By	RAVINDRA MANWATKAR CM (D-E) Checked By	SANTOSH SITARAMAN DGM/ HOS (D-E) Approved By

CONTENTS

Fast Patrol vessels
TECHNICAL REQUIREMENTS

1. **SCOPE OF SUPPLY: -**

Design, manufacture, supply, install & test on board the ship exhaust system of the main Diesel Engine (required for ship propulsion) and Main Diesel generator engine for the Fast Patrol vessels built by MDL for Indian Coast Guard. This is a turnkey job (design, built, supply, complete installation and made ready for operation on board ship).
Each main propulsion diesel engine and main Diesel Generator engine exhaust shall be led overboard above the water line through the shipside. To reduce heat radiation from the exhaust, the exhaust piping will be seawater-cooled. The Exhaust pipe will be routed high enough in such a way that there is no possibility of seawater ingress up to the Engine. As exhaust is led outside from shipside, efforts will be made that the arrangement does not soil painted hull (Ship-side).

1.1. Exhaust systems are required for the following equipment:

Sr. No	Equipment	Make	Model	Quantity per ship
i)	Main Engine	M/s. MAN	16V175DMM, 2960 KW	03
ii)	Main Diesel Generator 120 KW each	M/s. KOEL	Type: SL 90 inline, Model: 6SL9088 TA-M(A)	03

1.2. At full speed all three engines will be working. At full load, any two main Diesel Generators will be working (For information only).

1.3. The design of the complete system shall have to be supported with relevant pressure loss calculations. Allowable back pressure for main engine is 50 mbar and 75 mbar for main Diesel Generators.

1.4. Material in MDL scope:

Sr. No	Equipment	Material in MDL scope
(i)	Main Engine	➢ Expansion bellows (Stainless Steel): 01 Set per engine [01 (One) set consists of 4 nos SS bellows after Turbocharger and 1 SS bellow in the exhaust manifold). ➢ "Y" piece: 01 Set Per Engine. ➢ Flexible supporting assembly / Mounting brackets with fixed and sliding supports for Exhaust line from turbocharger to shipside: 04 Nos. Fixed (per engine) & 04 Nos. Flexible (per engine). ➢ Flap valve and Sea water injection system: 01 Set Per Engine.
(ii)	Main Diesel Generator	➢ Expansion bellows (Stainless Steel): 1 no per DG. ➢ Flexible supporting assembly/Mounting brackets with fixed and sliding supports for Exhaust line from turbocharger to atmosphere: 1 set per DG. ➢ Silencer. ➢ Nozzle for sea water injection at exhaust pipe: Min 03 Nos.

		per DG or as per OEM recommendation.

Installation of MDL supplied material will also be in the scope of the vendor.

1.5. Due to space constraints, a silencer will not be installed in the main engine system. Instead, a seawater injection system to be used.

1.6. The details on items/fittings supplied by the main Diesel Generators enclosed at **Annexure-5.**

1.7. All other items/fittings (including additional bellows required, deck/bulkhead compensators, compartment sealing, pipes/Y-pipe with bend flanges, trunking, asbestos-free gasket, fasteners, Insulation material, brackets etc.) required for the system as per design shall be supplied by the Vendor.

1.8. The guidance drawing showing the tentative route of the exhaust system is enclosed in **Annexure-6** for main engine and in **Annexure 7** for main Diesel Generators. The drawing is enclosed for a better understanding and appreciation of the complete system within the ship. However, the actual design and manufacturing details of the items/fittings required for the complete system will have to be done by the Vendor.

1.9. To correct the fabrication, installation & other practical errors likely to occur in the process/system, suitable pieces of the system will have to be fabricated in situ. All consumable required for fabrication and installation will also be in vendor scope.

1.10. All items for exhaust system designed and manufactured by the Vendor, shall be installed on board the ship, properly supported & insulated by the Vendor. The same has to be proved for the desired performance (validate the design of the systems) during HATs and SATs by the Vendor. Changes in the systems, if any, required to meet the deficiencies observed during the trials, shall be done by the Vendors and corrected items shall be supplied and installed by the Vendor for/on all Ships free of cost.

1.11. Assistance (electricity, water, compressed air and crane facility) on board the ship as required during installation of the systems will be provided by the Shipyard.

1.12. Vendor has to interact with Diesel Engine and Diesel generator suppliers to check & confirm the interface requirement and to meet the stipulated overall performance of exhaust systems. Relevant design calculations, analysis, data etc. can be shared with them to achieve the stipulated end results.

1.13. A suitable draining arrangement shall be provided in the system, as required.

1.14. On receipt of the Purchase Order, the vendor has to do the design calculations, analysis as required and prepare the detailed arrangement drawings and submit them for approval. The vendor will have to submit QAP, drawings and details of the welder's qualification (by class). The vendor shall start the manufacturing of the items, only after approval of the drawings and QAP.

1.15. Instrumentation: Test instruments if required for the trials and Commissioning of the system on board the ship during HATs and SATs will be in vendor scope.

1.16. Exhaust gas from different engines are not to be interconnected.

2. **Material of Construction:**

2.1. Following material shall be used:
Pipes: SS to AISI 304
Flanges: MS to IS 226
Valves: GM to BS 1400LG 4C

Exhaust Pipe OD for main Engine shall be minimum 456 mm. Exhaust Pipe thickness shall be minimum 4 mm.

2.2. For other parts materials used in the exhaust system are to be capable of withstanding the maximum permissible exhaust gas temperature, and are to be suitable for the life period called up in this TSP.

3. **Welding Qualification:**

3.1. Welding is to be is in accordance with Section IX of ASME code and weld inspection to be in accordance with Section V, Article 6 of the ASME code or other suitable specifications.
3.2. Welding should be carried out by qualified welders by ABS/IRS.

4. **Vibration & ABN Requirement:**

4.1. Flexible steel bellows pieces and special fitting shall be provided so that the piping is vibration-free.
4.2. Design of all machinery shall be carefully considered with a view to minimize airborne noise and vibration, thereby improving habitability. The design measures on noise control must address aspects like hearing, conversation, habitability and audibility.
4.3. The design measures on vibration must consider aspects to counter excessive stresses in structural and mechanical components.
4.4. Criteria laid down in ISO-6954:2000 must be followed for design and evaluation. Vibration measurements are to be carried out as per ISO 4868(XII)/latest amendment.
4.5. Due to the flow and load changes, especially with high air velocities, the exhaust pipe is subject to vibrations. This has to be considered within the overall layout.

5. **Insulation:**

5.1. Exhaust systems are required to be insulated with suitable acoustic and thermal insulation of the required thickness, as required, to meet the operational requirement stipulated in this technical specification and class requirement. Relevant calculations to arrive at the required thickness will have to be submitted by the Vendor. The vendor has to mention the material specifications for both types of insulation in the technical offer. The offered material specifications shall be universally accepted (IMO compliant) latest materials. The same shall require Shipyards approval.
5.2. The exhaust ducting is to be acoustically and thermally insulated with suitable insulation material. The thermal insulation of the external surfaces of the ducting is to conform to the requirements of the TSP.

5.3. Exhaust piping shall be covered with suitable insulation material to protect personnel from injuries due to heat. A sufficient number of layers of suitable insulating material to be applied to the exhaust piping.
5.4. Bellows, when insulated, must expand & contract freely within the applied insulation. Soft insulation material or insulation sleeves are to be used to encase the connection.
5.5. The insulation is to be of a type and so supported that it will not crack or deteriorate when subjected to vibration.
5.6. The insulation of exhaust systems is to be non-asbestos type.

6. Exhaust pipes and fittings shall be suitably lagged.
Insulation Material: Commercial metallic cloth and GI sheets.
Cladding shall be applied on the insulation.

Temperature of outer surfaces of insulation of the exhaust piping shall not exceed 55℃.

7. **Equipment Parameters:**
Please refer **Annexure-8** for engine parameters and **Annexure-9** for main Diesel Generator parameters reference.

8. **Performance Guarantee:**
8.1. The exhaust systems are to be guaranteed for the following performance requirements.
   a) **Exhaust Gas Items:** The vendor has to ensure that the back pressure of the system is less than the permissible pressure loss.
   b) Exhaust systems are to be designed to withstand the exhaust gas temperatures corresponding with the full specified duty of the diesel engine, including overload, under all environmental conditions specified in this TSP. The surface temperature at the outer surface of the insulation should not exceed 50℃.
   c) The use of acoustic absorptive material should be considered to ensure that the noise produced from the ducting should be within 90 db as per IS 13161-3.
   d) Exhaust gas temperature after water injection shall not exceed 150℃.

8.2. System is to be designed to perform satisfactorily for the design life of the ship, as detailed in this TSP, when operating in damp, salt and/or sand-laden air, over the range of environmental conditions specified in this TSP.
8.3. System component sizes are to be based on air speeds at the design maximum flow of the engine; including the design overload conditions (110% of the MCR).
8.4. Static loads from uptake and displacement of resiliently mounted parts including those resulting from specified ship motions have to be provided.
8.5. The system is to accommodate thermal expansion and movement of the duct due to the effects of operating of diesel engine, such that the stresses imposed on the exhaust manifold or the exhaust system structure under any of the environmental conditions specified in the TSP, are less than any static or cyclical failure limits for the exhaust system.

9. **Exhaust System:**

9.1. For each engine and main diesel generator separate gas-tight exhaust system is to be fitted. To minimize the effect that the system has on the engine performance and maintenance requirements, the system should convey exhaust gases to atmosphere

by the most direct practicable path consistent with the arrangement of adjacent systems and equipment.

9.2. The design of the exhaust system is to ensure that the system will be fit for purpose and that exhaust losses will be minimized. The maximum back-pressure across the system should not exceed the limits specified in this TSP. The results of calculations performed to demonstrate that the losses in the system are acceptable, are to be submitted to the Shipyard.

9.3. Pipe sizes are to be based on gas speeds at the design maximum flow to ensure that the maximum allowable back pressure requirement of the engine manufacturer at the engine exhaust turbocharger outlet is not exceeded.

9.4. The use of splitters in bends and appropriate designs of diffusers or transition pieces should be considered.

9.5. The following measures are to be taken to minimize the accumulation of exhaust deposits:

a) The design of exhaust gas ducting and associated equipment is to prevent the possibility of soot collecting at any points other than those specifically intended for soot removal. The length of horizontal ducting is to be minimized.

b) Inspection and access openings are to be fitted as necessary taking account of any potential obstruction. All openings are to be fitted with gas-tight cover plates.

9.6. It is to be ensured that water and/or sand that enters the exhaust pipe via its outlet is prevented from reaching the engine, and is not allowed to form stagnant puddles in the exhaust system. Catchment pots and drains are a standard way of satisfying this requirement. Water traps shall be installed at the lowest point of the exhaust system, near the exhaust outlet, to prevent rainwater from reaching the Engine. The exhaust line shall be sloped away from the Engine, towards the trap, so that condensation will drain properly.

9.7. Joints for exhaust systems are to be manufactured from a suitable Non-hazardous (IMO compliant) material which will give life and performance consistent with the requirements laid down in the TSP.

9.8. To achieve the above requirement, the following may be used appropriately:

(i) Stainless Steel expansion joints (Bellows) –Type tested.
(ii) Fixed points/supports
(iii) Sliding points/supports
(iv) Deck conduit (if applicable)

9.9. Exhaust systems are required to be supported with fixed and sliding supports/hangers, as required. Supporting calculations in this regard will have to be submitted by the Vendor.

9.10. Fixed supports are to be used to carry the weight of the exhaust system. The first fixed support is to be located as close as possible to the engine but after the first compensator (Bellow), to protect the engine from the system expansion.

9.11. Fixed supports are to ensure that vibrations are not transmitted to the rest of the ship/structure. They are to be capable to withstand the static and dynamic forces. A fixed support may be used to keep the ends of a long pipe run fixed in place, forcing all thermal growth toward the expansion joints.

9.12. Sliding supports are to be used to allow longitudinal movement within the system caused by the thermal expansion and contraction in the exhaust line. Sliding supports are to ensure that vibrations are not transmitted to the rest of the ship/structure. They are to be capable of handling both tension and contraction forces.

9.13. Due to the weight of water contained within the system, exhaust pipes and fittings are to be efficiently supported.
9.14. Thermal growth must not lead to unacceptable loads within the exhaust system and to the interfaces. The thermal growth is to be expanded away from the Engine.
9.15. When the exhaust line is placed horizontally the sliding supports are to be capable of carrying the weight of the system.
9.16. The flexible connection/bellows used in the system should be pre-stretched during installation to allow for expected thermal growth.
9.17. Isolation cocks/valves must be fitted with a locking device to prevent their being opened unintentionally.
9.18. Suitable connections/ports to be provided on the exhaust system parts to install the measuring devices to measure the back pressure/pressure losses etc. to validate the design of the exhaust system on board the ship when the engine is in running at full load.
9.19. The suspending element/ special hangers of the elastically mounted exhaust gas piping must be designed to avoid further weights which influence the turbocharger dynamic and static load restrictions.
9.20. Gas-tightness of the ducts must be ensured.
9.21. No additional weight than the exhaust gas compensator weight is allowed to load the respective interface to the engine. Hence the piping/routing needs to be designed accordingly.
9.22. Miter/Elbow joints are allowed.

10. **Safety & Regulatory Compliance**

10.1. System shall ensure compliance with SOLAS (Safety of Life at Sea) regulations regarding exhaust system design and fire safety.
10.2. Also comply with Indian Coast Guard and Classification Society (ABS & IRS) standards.

11. **Harbour Acceptance Trials/Sea Acceptance Trials: -**

11.1. On-board trials shall be conducted by the Shipyard based upon HATs/SATs documentation and the ship's trials schedule, which would be planned by the shipyard in consultation with equipment suppliers and Indian Coast Guard. Draft HATs/SATs procedure to be submitted by the Vendor for concurrence of Shipyard.
11.2. During equipment setting to work and HATs/SATs, equipment suppliers shall assist and offer the trials for their successful completion. System testing and defect rectification, if any during on-board trials shall be undertaken by the equipment supplier efficiently and effectively.
11.3. HATs/SATs documents shall include, procedure, pre-requisites, data to be recorded, time interval for data recording, formats for data recording, safety and precautions to be observed during trials, estimated time of the trials and all other relevant data/information required for the successful completion of the trials.
11.4. HATs/SATs shall be carried out to the satisfaction of the shipyard and Indian Coast Guard. HATs/SATs will be carried out as per the final mutually agreed document.
11.5. It is recommended to measure the exhaust back pressure by using suitable instrumentation. Measurement will be taken at Engine and DA running at full load condition.
11.6. The tools, accessories etc. required to carry out the HATs and SATs on board the Ship are to be included in the Vendor's scope of supply.

11.7. HATs and SATs are to be conformed to design calculations.

12. **Maintenance: -**

12.1. Since the exhaust system is passive systems, negligible maintenance is expected. However, periodic inspection routines to check for soot build-up, foreign objects, gap blockage etc. need to be recommended.

12.2. All maintenance and repair between major overhauls will be carried out in situ. The design therefore is to provide accessibility to all working parts. Along with a maintenance schedule, the Vendor shall define the planned maintenance intervals and procedure for the equipment/system.

12.3. Maintenance of turbocharger must be possible.

13. In case of any discrepancy, deficiency, failure, etc., related to the scope of supply, the Shipyard/Indian coast guard or any agency designated by Shipyard/Indian coast guard will be entitled to investigate the subject matter and the supplier would be bound to take corrective actions, as necessary, for fulfilling the contractual specifications & requirements.

14. Inspection Authority: MDL nominated third party inspectors (TPI) for work done at vendor premise and MDL QC &/or ICG for on board work. Cost of inspection will be borne by MDL.

15. Following would be verified and approved by MDL –
    i) Exhaust Temperature calculations
    ii) Strength, fatigue and vibration assessment of exhaust support hangars.

Annexure - 1

DEVIATION LIST

The Supplier shall fill in this form for the deviations of their bid from the requirements as stated in the Material Requisition. If no deviation is required Supplier shall fill in "NIL" in the 'Deviation column. Supplier shall sign/date and affix their company seal.

SR. No.	DOCUMENT No./ CLAUSE No.	REQUIREMENT	DEVIATION WITH REASONS	CGHQ / MDL REACTIONS

SUPPLIER'S COMPANY SEAL DATE **SUPPLIER'S SIGNATURE &**

A-ACCEPTED N-NOT ACCEPTED C-CONDITIONAL ACCEPTANCE (SEE ATTACHED SHEET)

Annexure - 2

WEIGHT CONTROL DATA SHEET

EQUIPMENT DESCRIPTION		EQUIPMENT NO.	
COMPARTMENT		LOCATION	

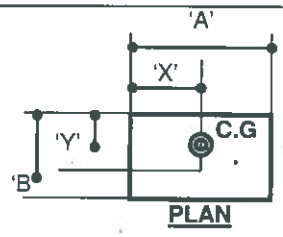
SWBD :

☐ TOLERANCE CODE ☐ PRELIMINARY EST. ☐ DESIGN EST. ☐ M.T.O (CALC) ☐ WEIGHED ☐ TOLERANCE ± %

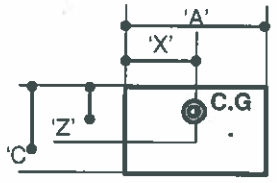
1. WEIGHT (Kg.)

(a)	DRY	Kg ±	%
(b)	FLUID	Kg ±	%
(c)	OPERATING	Kg ±	%
(d)	TEST	Kg ±	%
(e)	TOTAL	Kg ±	%

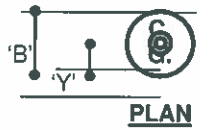
2. EQUIPMENT DIMENSIONAL DATA (mm) & Co-ordinates of CoG



PLAN



ELEVATION



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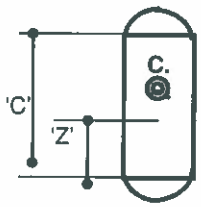

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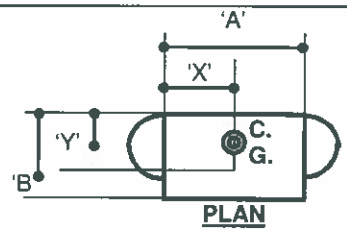

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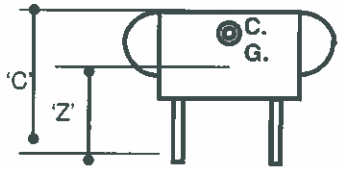


ELEVATION

OVERALL SIZE		CENTRE OF GRAVITY	
'A'		'X'	
'B'		'Y'	
'C'		'Z'	

NOTE :

- ALL OFFERS SHALL INCLUDE THIS DATA SHEET DULY FILLED IN BY THE SUPPLIER (SIGNED, DATED & SEAL AFFIXED).
- ALL FINISHED ITEMS SHALL BE WEIGHED & A CERTIFICATE SHALL BE PROVIDED AS PER ATTACHED SHEET.
- SEPARATE SHEETS SHALL BE COMPLETED FOR EACH INSTALLED EQUIPMENT.
- ORIGIN OF 'X', 'Y' AND 'Z' TO BE INDICIATED.

SUPPLIER'S SEAL **SUPPLIER'S SIGNATURE & DATE**

Annexure - 3

WEIGHT CERTIFICATE

EQUIPMENT DESCRIPTION:	EQUIPMENT NO. :

The form shall be completed by Supplier & shall be supplied along with the equipment.

SUPPLIER'S NAME		Ref. Drg. No.	
ADDRESS		Part No.	
TELEPHONE NO.			
ORDER NO.		EQPT. NO.	

METHOD OF WEIGHING:
Supplier shall prescribe Method & Equipment Used:

	DATE OF LAST CALIBRATION	SPECIFIED ACCURACY REQUIREMENT
	NOTE :-	

RESULT OF WEIGHING TOTAL EQUIPMENT DRY WEIGHT
(Excluding packing, temporary protection etc.)

ALLOCATED WEIGHT
(Weight estimate agreed by purchaser and supplier based on order specs).

REASONS FOR VARIATION BETWEEN ALLOCATED WEIGHT AND CERTIFIED WEIGHT:

WEIGHING ADDRESS:	WITNESSED BY	
	FOR SUPPLIER	FOR PURCHASER
	Representative	Representative
Date:	Signature / Date & Seal	Signature/Date & Seal

Annexure - 4

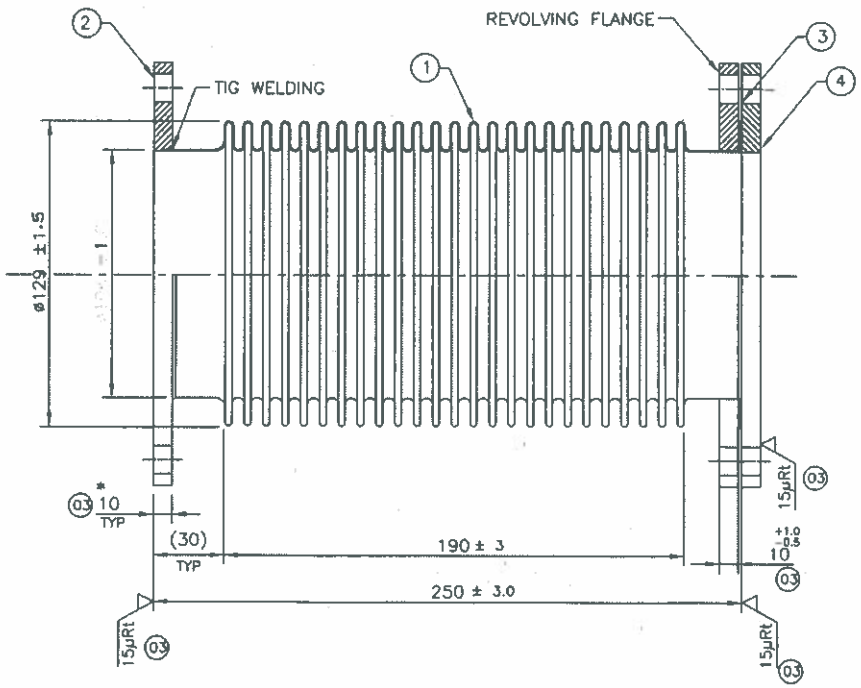
COMPLIANCE MATRIX

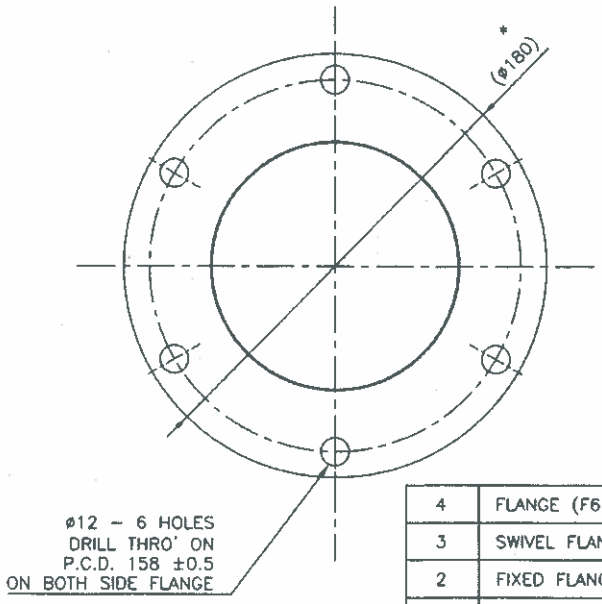
EQUIPMENT DESCRIPTION:		EQUIPMENT NO. :	
The form shall be completed by Supplier & shall be supplied along with the equipment.			
SUPPLIER'S NAME		Ref. Drg. No.	
ADDRESS		Part No.	
TELEPHONE NO.			
ORDER NO.		EQPT. NO.	

S No.	Tender Specifications Para reference	Brief Description as per Relevant Tender Specifications	Compliance to Tender Specifications	Deviations if any, with Reasons	Remarks if any

SUPPLIER'S COMPANY SEAL		SUPPLIER'S SIGNATURE & DATE

IF IN DOUBT ASK





SR.NO.	DESCRIPTION	QTY.	MATL.
4	FLANGE (F6.618.07.0)	1	M.S.
3	SWIVEL FLANGE	1	M.S.
2	FIXED FLANGE	1	M.S.
1	BELLOW (0.3 x 2 PLY)	1	SS321

** DATA :-

A. DESIGN SPECIFICATIONS :-
1. WORKING PRESSURE - 1.0 kg/sq.cm.
2. TEST PRESSURE - 1.5 kg/sq.cm. (04)
3. DESIGN TEMPERATURE - 550°C
4. AXIAL COMPRESSION - 20 (MAX)
5. AXIAL EXTENSION - 15 (MAX)
6. LATERAL DEFLECTION - 15 (MAX)

B. BELLOW DETAILS :-
1. BELLOW I.D. - ø106.0 ± 1.0
2. BELLOW O.D. - ø129.0 ±1.5
3. NO. OF CONVOLUTIONS - 24 NOS
4. NO. OF PLIES - 2 PLY
5. THICKNESS PER PLY - 0.3 mm
6. CONV.VARIATIONS - 1.5 mm. ±0.44 (04)
7. SPRING RATE OF BELLOW - 2.20 kgf/mm

** NOTES :

1. APPROVED SUPPLIER : SENIOR INDIA PVT.LTD.(DRG.NO.SIPL/BA-105)
2. ALL M.S. COMPONENTS TO BE PAINTED WITH HEAT RESISTANT ALUMINUM PAINT.
3. MATING FACE OF FLANGE TO BE COATED WITH RUST PREVENTIVE OIL.
4. SUITABLE FOR USE WITH 69L 9088T AND 69L 9088TA ENGINES.
5. MAXIMUM DEFLECTION VALUES TO BE CHECKED ON SAMPLE BASIS
6. GREEN DOT WILL BE PROVIDED ON BELLOW ASSY. FOR LEAK TESTING O.K. PCS.
7. LATERAL TILT IN BELLOW ASSY WILL BE 5.0 mm. MAX. (04)
8. ALL DIMNS MARKED * ARE ONLY FOR REFERENCE.
9. BELLOW SHEET THICKNESS Tol. ±0.05 mm

No	REVISION	ZONE	MODIFIED BY	REF. No / DATE
04	CONV.VARIATIONS SPECIFICATION ADDED SPRING RATE 2.4 kg/mm±20% CHANGED TO 2.20 Kgf/mm. TOL ON BELLOW O.D CHANGED NOTES ADDED	-	DAVINCI NBK	03436 12/04/08
03	FLANGE THK CHANGED FROM 8 TO 10 mm & SURFACE FINISH VALUE ADDED.	-	DAVINCI NBK	02380 23/02/08
00	NEW RELEASE.			00530 24/07/07

PRINTS OF PREVIOUS REVISION NO. SHOULD BE SCRAPPED

UNLESS OTHERWISE SPECIFIED
- ALL DIMENSIONS ARE IN mm.
- SURFACE ROUGHNESS AS PER CO. STD.NO.10501.
- UNMENTIONED TOLERANCES AS PER CO.STD.NO.11001.
- REMOVE ALL SHARP BURRS AND SHARP EDGES.
- DRAWING NOT TO BE SCALED.

UNMENTIONED	
RADII	--
CHAMFER	--
UNDERCUT	--

CAD DRG. FILE:- PLM

MATERIAL :-	HEAT TREATMENT :-	WEIGHT :-
REFER NOTE	--	--

DRN	DAVINCI/NBK
CHD.	
APPD.	
DATE	24/07/07

TITLE: EXPANSION BELLOW (4.0")

CASTING/FORGING DRG. NO.: --

TYPE: 6SL9088T

SCALE: 1:2

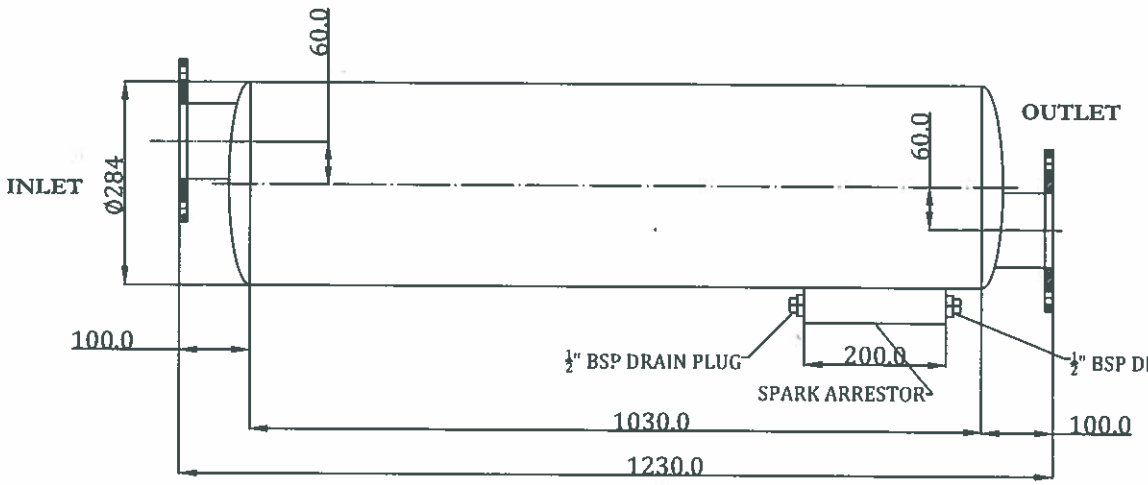
SHT. NO: 2 OF 2

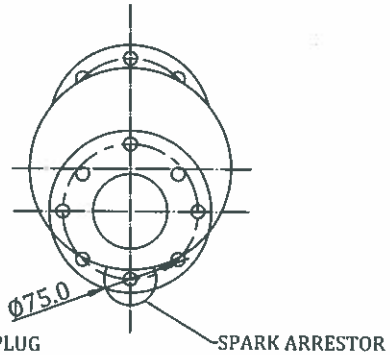
KIRLOSKAR OIL ENGINES LTD., PUNE 411 003 (INDIA)

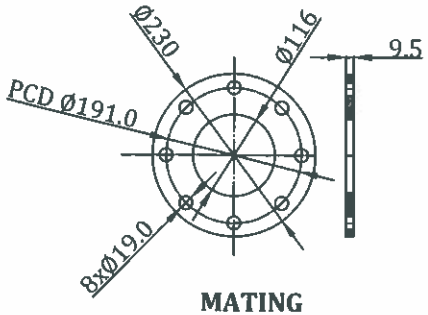
DRAWING NO.: F6.618.01.0.04

FORMAT No.R&E/FORM/054/01 (REFER DOP No R&E 4.4/03) FOLD 2 FOLD 1 SIZE A3

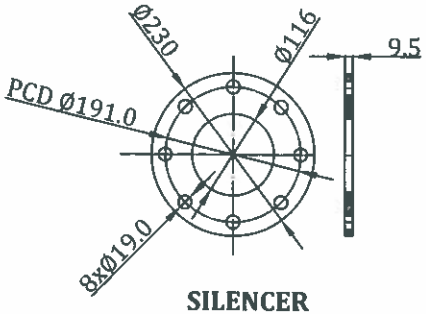
Annexure 5







MATING FLANGE DETAILS



SILENCER FLANGE DETAILS

TECHNICAL DATA

SR NO	SPECIFICATION	UNITS
1	ENGINE DETAILS	6SL9088TA (198 HP/1500 RPM)
2	TOTAL EXHAUST GAS FLOW	1380 kg/hr
3	EXHAUST TEMPRETURE	600°C
4	BACK PRESSURE	25.0 mm of Hg
5	INSERTION LOSS	20-25 dBA
6	SILENCER TYPE	SINGLE
7	APPLICATION	MARINE DG SET

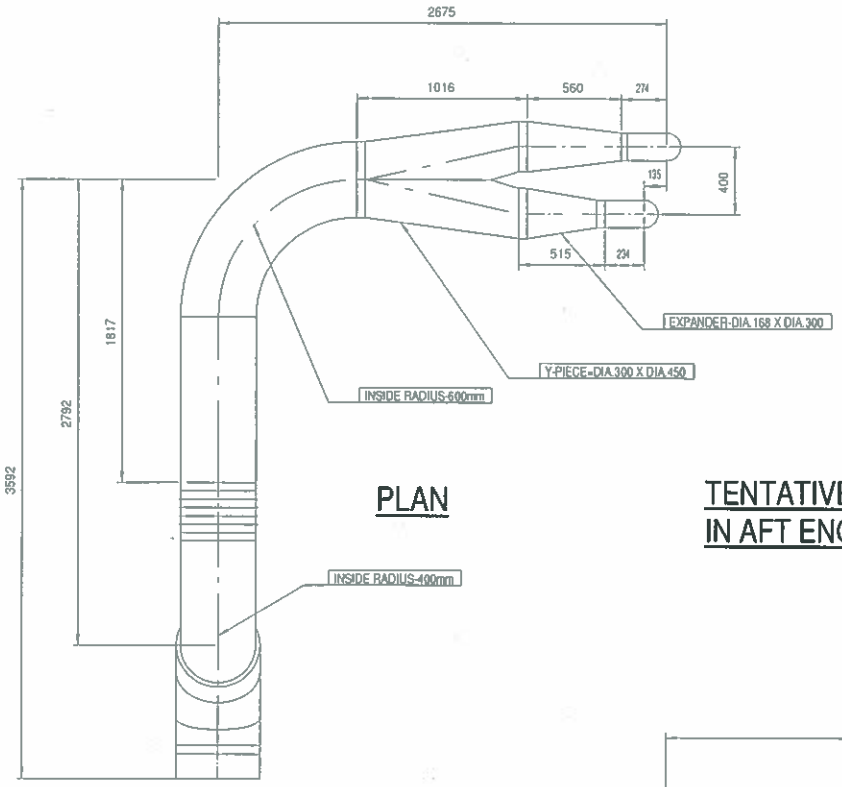
BOM

SR NO	DESCRIPTION	THICKNESS	MATERIAL GRADE
1	SILENCER BODY	2.0 mm	IS-2062 (E250-A)
2	SILENCER END DISH	2.0 mm	IS-2062 (E250-A)
3	INNER PIPES	1.5 mm	CR-D (IS-513)
4	INNER DISH	2.0 mm	IS-2062 (E250-A)
5	INLET & OUTLET FLANGE	10.0 mm	IS-2062 (E250-A)
6	INLET & OUTLET PIPE	2.0 mm	IS-2062 (E250-A)
7	DRAIN PLUG & SOCKET	Ø40.0 mm	IS-2062 (E250-A)

NOTE:-

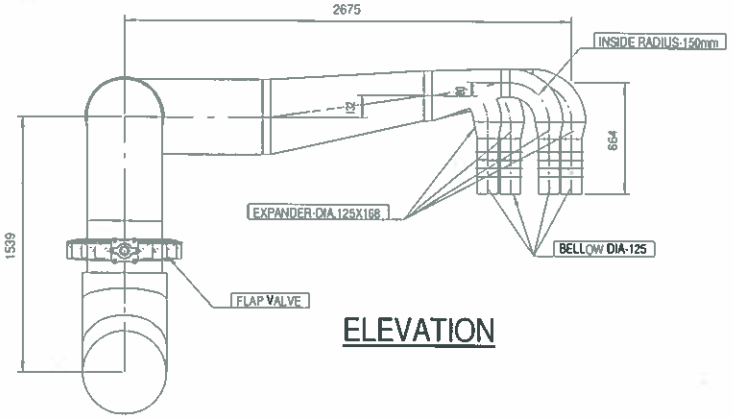
1. **MATERIAL :-** IS-2062 (250-A)
2. **SURFACE TREATMENT:-** TO BE PAINTED WITH HR ALLUMINIUM SILVER PAINT 600°C
3. **IDENTIFICATION NAME TAG REQUIRED ON INLET SIDE**
4. **INDENTS & SLOTS ARE TO BE EQUALLY SPACED.**
5. **BODY SEAM,TUBE JOINT,DRAIN HOLE,SLOT & INDENTS MAY BE AT RANDOM ANGULAR ROTATION.**
6. **PACKAGING:-** PART WILL BE WRAPPED IN POLYTHENE BAG & WILL BE SUPPLIED IN WOODEN CRATE.
7. **PART WILL BE LEAK TESTED AT 0.5 Bar.**
8. **MATING FLANGES SCOPE:-** MATING FLANGES TO BE SUPPLIED BY SUPPLIER WITH SILENCER.

Annexure 6

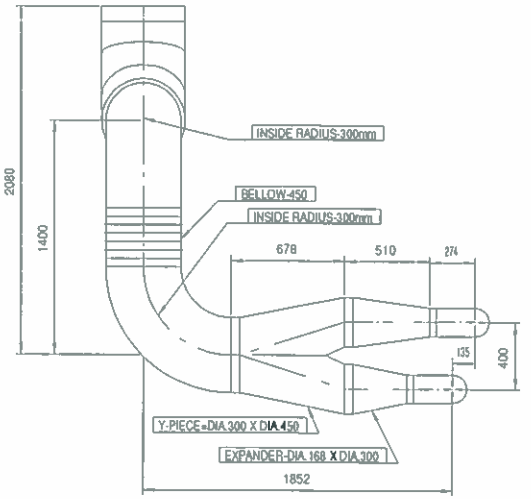


PLAN

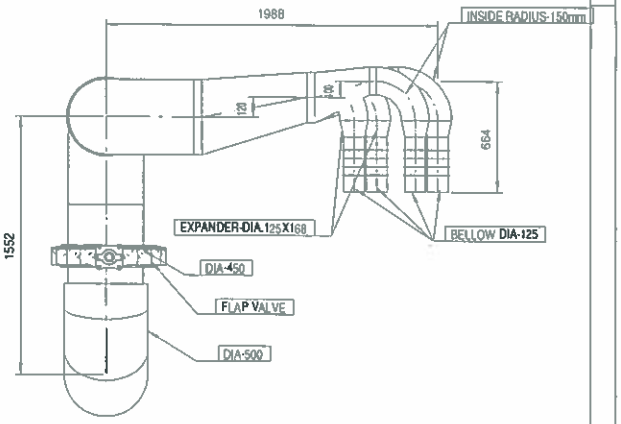
TENTATIVE EXHAUST OF MAIN ENGINE IN AFT ENGINE ROOM



ELEVATION



PLAN



ELEVATION

TENTATIVE EXHAUST OF MAIN ENGINE(P&S) IN FWD ENGINE ROOM

NOTE:

1) DIMENSIONS ARE GIVEN WITHOUT INSULATION

2) INSULATION THICKNESS-100mm

3) ROCK WOOL IS USED FOR INSULATION & COVERED BY COMMERCIAL FIBER GLASS CLOTH & G.I.SHEET.

4) PIPE MATERIAL-SS to AISI 304/MS to ERW IS1239

043-PROPOSED-ENGINE-EXHAUST

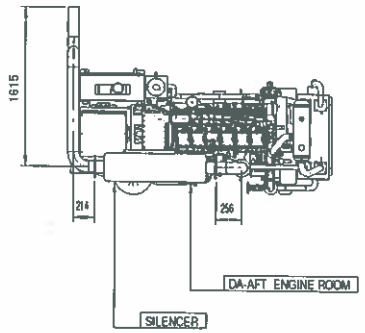
Mazagon Dock Shipbuilders Limited, Dockyard Road, Mumbai-400 010	Client ICG / Ship FPV	Unit no.	Title: TENTATIVE EXHAUST OF MAIN ENGINE IN FWD & AFT ENGINE ROOM	Scale		Modelled	Drawn	Checked	Section Head	Yard no. 16501	Drawing no.	Rev.
					Name					Date 18-06-2025	Sheet 01 of 01	A3
					Desgn							
					Sign.							

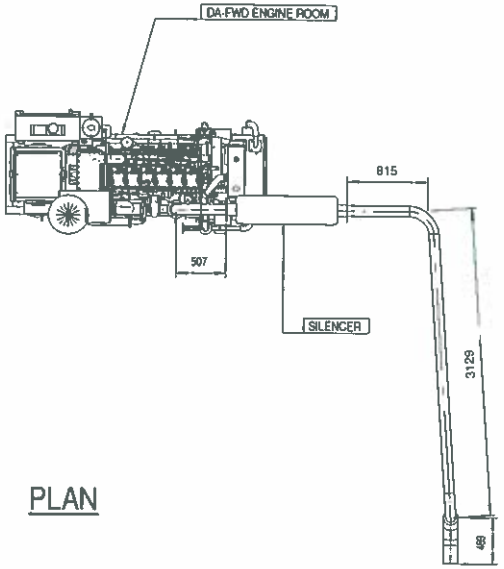
A3_MDL_Unit

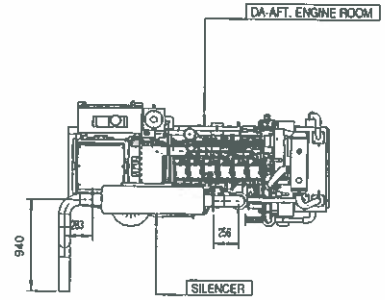
420 x 297

Annexure 7

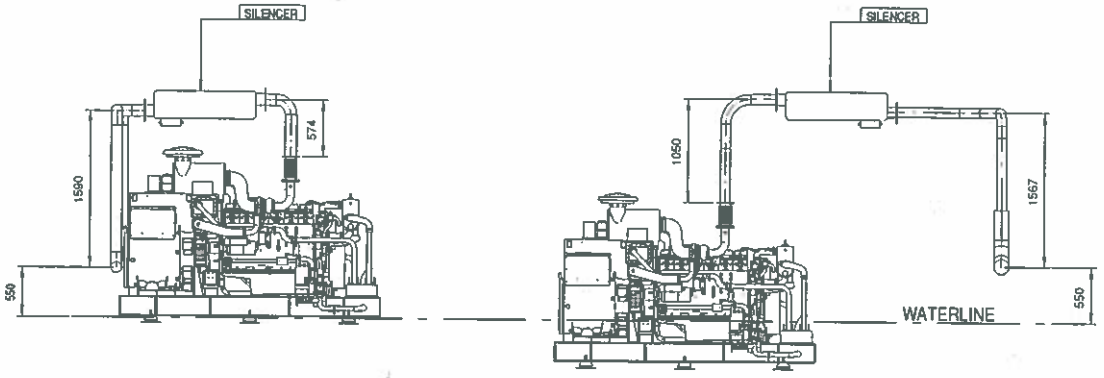
FPV







PLAN



ELAVATION

Exhaust gas emissions

Annexure 8

Operating data - Marine Plants - Mechanical propulsion CPP

Project 1

Engine - 16V MAN 175D B2, MM, 185 kW/Cyl. @ 1900 rpm, E2-/E3-cycle, Mechanical Propulsion on n=const., Tier II
Charge air/cooling water temperature control: 2-string-thermostat

Reference conditions

Air temperature	°C	25
Relative humidity	%	30
Absolute humidity	g/kg	6.0
Air pressure	mbar	1000
Glycol concentration HT string	Vol%	35
Glycol concentration LT string	Vol%	35
Exhaust gas back pressure at T/C outlet (100 % engine output)	mbar	50
Oxygen reference value	%	15.0

Fuel type: MGO (DMA, DFA)

Sulfur content S	wt%	0.10
Nitrogen content N	wt%	0.10
Oxygen content O_2	wt%	0.00
Carbon content C	wt%	86.02
Hydrogen content	wt%	13.76
Ash content	wt%	0.01
Water content H_2O	wt%	0.02
Density (15 °C)	kg/m³	850
Net calorific value	kJ/kg	42800

Exhaust gas emissions

Engine load	%	100.0	85.0	75.0	50.0	25.0
Engine output	kW	2960	2516	2220	1480	740
Speed	1/min	1,900	1,900	1,900	1,900	1,900
Charge air pressure (abs.)	bar	3.75	3.75	3.67	2.83	1.97
CW temperature before CAC (LT stage)	°C	28.8	28.9	29.3	33.7	36.6
Temperature of charge air at charge air cooler outlet	°C	37.1	37.1	37.1	37.2	37.7
Absolute humidity of combustion air	g/kg	6.0	6.0	6.0	6.0	6.0
Air flow rate	kg/kWh	5.1	6.0	6.7	8.1	11.3
Fuel oil consumption [4] (NCV = 42,800 kJ/kg)	g/kWh	197.2	198.5	201.8	205.3	241.0
Exhaust gas temperature at turbine outlet [6]	°C	471	388	349	305	295
Exhaust gas volume flow [5]	m³/h	33397	29545	27476	20398	13936
Exhaust gas standard volume flow [5]	Nm³/h	12072	12018	11874	9493	6595
Exhaust gas mass flow [5]	kg/h	15624	15554	15368	12287	8536
O_2	g/kWh	461	664	822	1124	1733
	Vol%, dry	8.63	10.49	11.52	13.00	14.31
CO_2	g/kWh	654.2	658.8	670.0	682.1	800.2
	Vol%, dry @ act. O_2	8.85	7.52	6.79	5.71	4.78
H_2O	g/kWh	284.74	291.73	300.40	313.11	378.02
	Vol% @ act.% O_2	8.10	7.08	6.51	5.65	4.91
NO_x [1]	g/kWh	8.16	7.56	7.14	11.12	11.20
	mg/Nm³, dry @ 15% O_2	1060*	970*	910*	1380	1180
	ppm, wet @ act.% O_2	975	775	650	845	610
	ppm, dry @ act.% O_2	1065	830	695	895	645
CO	g/kWh	0.36	0.36	0.39	0.48	1.14
	mg/Nm³, dry @ 15% O_2	50*	50*	50*	60	120
	ppm, dry @ act.% O_2	75	65	60	65	110
HC [8]	g/kWh	0.16	0.16	0.14	0.17	0.44
	mg/Nm³, dry @ 15% O_2	20*	20*	20*	20	50
	ppm, wet @ act.% O_2	60	55	45	40	80
	ppm, dry @ act.% O_2	65	55	45	45	85
SO_2 [2]	g/kWh	0.41	0.42	0.42	0.43	0.51
	mg/Nm³, dry @ 15% O_2	50*	50*	50*	50	50
	ppm, dry @ act.% O_2	40	30	30	25	20
TSP [3] [7]	g/kWh	0.386	0.389	0.395	-	-
	mg/Nm³, dry @ 15% O_2	50*	50*	50*	-	-

Notes

All values only for guidance, not guaranteed, except values with addition *

The stated values do not include emissions from crankcase.

Measuring instrument tolerance not chargeable upon MAN Energy Solutions SE

Standard reference conditions (standard cubic meter Nm³): 1013 mbar; 0 °C
O_2, NO_x, CO, HC measurement acc. to ISO-8178;

act. O_2 = actual O_2 concentration as stated above; dry = concentration calculated without water content in exhaust gas.

Footnotes

1) Calculated as NO_2

2) The SO_2 content in the exhaust gas is valid for fuel with an sulphur content as specified and lube oil with a sulphur content of max. 0.7 wt%.

3) Total suspended particulates (TSP) = soot + ash, without condensed or adsorbed water, hydrocarbons and sulfates; measurement acc. ISO 12141-1, in stack equivalent to PM, US EPA method 17. The TSP content in the exhaust gas is valid for fuel with an ash content as specified above

4) Tolerances (fuel consumption):
+5%; Fuel: MGO (DMA, DFA);
NCV = 42,800kJ/kg (measured NCV of fuel analysis);
Attached pumps: lube oil: 1 resp. 2; HT-water: 1; LT-water: 1;
seawater: 1; fuel: 1

5) Tolerances: ±4 % for quantity

6) ±15 °C for temperature at turbine outlet

7) Only valid for loadpoints without influence of exhaust gas temp. control

8) Defined as total hydro-carbons, calculated as $CH_{1,96}$ ($\rho CH_{1,96}$ = 0.6239 kg/m³)

Performance variant: {'11000240136'}

Last change of engine base data (ID: 175D_MM_185kW_1900rpm_TIER2_E2): 2024-12-10

2025-05-06 11:51:23Z - Projedat v4.0.25078.2 - \Project 1\ - Amanda Cullhaj

8 – OPERATIONAL DATA FOR ENGINE

The data given below concerns an engine operating at **M**aximum **C**ontinuous **R**ating under the ISO 3046/1 ambient conditions.

8.1 Fuel oil

- Max. suction head	1	meter

8.2 Exhaust gas

- Exhaust gas flow	27.22	m^3/min
- Exhaust gas temperature at turbocharger outlet	550	°C
- Max. allowable exhaust back pressure	50	mm of Hg
- Heat lost to exhaust	102	kW

8.3 Combustion air

- Combustion air flow	12	m^3/min
- Max. air intake restriction	250	mm of H_2O

8.4 Coolant

- Heat lost to coolant	102	kW

8.5 Sea water

- Max. total flow rate	10.5	m^3/hr
- Max. pressure	2	bar

8.6 Convection and radiation

- Heat dissipation (excluding alternator)	23	kW

Tolerances : ± 5 % for heat dissipation and flows

± 25 °C for exhaust gas temperature

Note : The exhaust ducting and the accessories across ducting shall be sized such that exhaust back pressure is within the acceptable limits of turbocharger stated above.

Corrigendum-1 Dtd.: -14.08.2025

SOTR clause No	Existing Description	To be read as
1.3	Allowable back pressure for main engine is 50 mbar and 75 mbar for main Diesel Generators.	Allowable back pressure for main engine is 50 mbar and **50 mm of HG** for main Diesel Generators.
3.2	Welding should be carried out by qualified welders by ABS/IRS.	Welding should be carried out by qualified welders by **any IACS.**
8.1.b	Exhaust systems are to be designed to withstand the exhaust gas temperatures corresponding with the full specified duty of the diesel engine, including overload, under all environmental conditions specified in this TSP. The surface temperature at the outer surface of the insulation should not exceed 50°C.	Exhaust systems are to be designed to withstand the exhaust gas temperatures corresponding with the full specified duty of the diesel engine, including overload, under all environmental conditions specified in this TSP. The surface temperature at the outer surface of the insulation **should not exceed 55°C.**
9.8 i)	Stainless Steel expansion joints (Bellows) –Type tested.	Stainless Steel expansion joints (Bellows) **–Type tested and unit certified by any IACS.**
15	Following would be verified and approved by MDL – i) Exhaust Temperature calculations ii) Strength, fatigue and vibration assessment of exhaust support hangars.	Following would be verified and approved by MDL – ~~i) Exhaust Temperature calculations~~ ii) Strength, fatigue and vibration assessment of exhaust support hangars. Note: Exhaust Temperature calculations are not scope in exhaust system supplier.

SOTR clause No	Existing Description	To be read as
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Integrity Pact (IP) Format

Mazagon Dock Shipbuilders Limited (MDL) hereinafter referred to as **"The Principal/Buyer"**

And.....hereinafter referred to as **"The Bidder/ Contractor"**

Preamble

	The Principal/Buyer intends to award, under laid down organizational procedures, contract/s for .....The Principal/Buyer values full compliance with all relevant laws of the land rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidder(s) and /or Contractor(s). In order to achieve these goals, the Principal/Buyer will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 - Commitments of the Principal/Buyer:

(1)	The Principal/Buyer commits itself to take all measures necessary to prevent corruption and to observe the following principles:	
	a)	No employee of the Principal/Buyer, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
	b)	The Principal/Buyer will during the tender process treat all Bidder(s) with equity and reason. The Principal/Buyer will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
	c)	The Principal/Buyer will exclude from the process all known prejudiced persons.
	d)	The Principal/Buyer undertakes to scrupulously follow the tender containing Standard Terms & Conditions (STAC) and General Terms & Conditions (GT&C) in respect of procurement contracts for goods, services and civil works.
(2)	If the Principal/Buyer obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti Corruption Laws of India, or if there be a substantive suspicion in this regard, the Principal/Buyer will inform the Chief Vigilance Officer, MDL and in addition can initiate disciplinary actions.	

Section 2 - Commitments of the Bidder(s)/Contractor(s):

(1)	The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.	
	a)	The Bidder(s)/Contractor(s) will not, directly or through any other persons or firm, offer promise or give to any of the Principal/Buyer's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage or any kind whatsoever during the tender process or during the execution of the contract.
	b)	The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
	c)	The Bidder(s)/Contractor(s) will not commit any offence under the relevant Anti-Corruption Laws of India; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to other, any information or document provided by the Principal/Buyer as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

	d)	The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. All payments made to the Indian Agent/representative have to be in Indian Rupees only. Further details as mentioned in the "Guidelines of Indian Agents of Foreign suppliers" shall be disclosed by the Bidders(s)/Contractor(s). Copy of the "Guidelines on Indian Agents of Foreign Suppliers" as annexed and marked as Annexure-A.
	e)	The Bidder(s)/Contractor(s) will when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
	f)	The Bidder (s)/Contractor(s), their agents, representatives shall not do such things so as to interfere with the procedures laid down in the Principal/Buyer's tender containing the Standard Terms and Conditions (STAC) and General Terms and Conditions (GT&C) in respect of procurement contracts for goods, services and civil works.
	g)	The Bidder commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
(2)	The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlines above or be an accessory to such offences.	
(3)	A person signing IP shall not approach to courts while representing the matters to IEMs and he/she will await their decision in the matter.	

Section 3 - Disqualification from tender process and exclusion from future contracts:

	If the Bidder(s)/Contractor(s) before contract award or during execution of Contract has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility as Bidder(s) in question, the Principal/Buyer is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or to terminate the contract, if already signed for such reason, as per the procedure mentioned in the "Guidelines on Banning of business dealings" Copy of the "Guidelines on Banning of business dealings" is annexed and marked as Annexure-B.	
	1)	If the Bidder(s)/Contractor(s) has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal/Buyer is entitled also to exclude the Bidder(s)/Contractor(s) from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder(s) and the amount of the damage. The exclusion will be imposed for a minimum of six months and maximum of five years, which may be further extended at the discretion of the Principal/Buyer.
	2)	A transgression is considered to have occurred, if the Principal/Buyer after due consideration of the available evidence, concludes that no reasonable doubt is possible.
	3)	The Bidder (s) accepts and undertakes to respect and uphold the Principal/Buyer's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining legal advice.
	4)	If the Bidder(s)/Contractor(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Buyer may revoke the exclusion prematurely.

Section 4 – Sanctions for Violation:

(1)	Any breach of the aforesaid provisions by the Bidder or any one employed by him or acting

	on his behalf (whether with or without the knowledge of the Bidder) or the commission of any offence by the Bidder or any one employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act 1988 or any other Act enacted for the prevention of corruption shall entitle the Principal/Buyer to take all or any one of the following actions, wherever required –	
	a)	To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the Bidder. However, the proceedings with the other Bidder (s) would continue.
	b)	The Earnest Money Deposit/Security Deposit/Performance Bond shall stand forfeited either fully or partially, as decided by the Principal/Buyer, and the Principal/Buyer shall not be required to assign any reason there for.
	c)	To immediately cancel the contract, if already signed, without giving any compensation to the Bidder.
	d)	To recover all sums already paid by the Principal/Buyer, in case of an Indian Bidder with interest thereon at 2% higher than the prevailing Base Rate of SBI, and in case of a Bidder from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the Bidder from the Buyer in connection with any other contract for any other Defence stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
	e)	To en-cash the advance Bank Guarantee and Performance Bond/Warranty bond, if furnished by the Bidder, in order to recover the payments, already made by the Principal/Buyer, along with interest.
	f)	To cancel all or any other contracts with the Bidder.
	g)	To debar the Bidder from entering into any bid from Principal/Buyer for a minimum period of five years, which may be further extended at the discretion of the Principal/Buyer.
	h)	To recover all sums paid in violation of this Pact by Bidder(s) to any middleman or agent or broker with a view to securing the contract.
	i)	If the Bidder or any employee of the Bidder or any person acting on behalf of the Bidder, either directly or indirectly, is closely related to any of the officers of the Buyer, or alternatively, if any close relative of an officer of the Buyer has financial interest/stake in the Bidder's firm, the same shall be disclosed by the Bidder at the time of filing of tender. Any failure to disclose the interest involved shall entitle the Buyer to rescind the contract without payment of any compensation to the Bidder.
		The term 'close relative' for this purpose would mean spouse whether residing with the Principal/Buyer's employee/employees or not, but not include a spouse separated from the Principal/Buyer's employee/employees by a decree or order of a competent court; son or daughter or step son or step daughter and wholly dependent upon Principal/Buyer's employee/employees, but does not include a child or step child who is no longer in any way dependent upon the Principal/Buyer's employee/employees or of whose custody the Principal/Buyer's employee/employees has been deprived of by or under any law; any other person related, whether by blood or marriage, to the Principal/Buyer's employee/employees or to the Principal/Buyer's employee/employees wife or husband and wholly dependent upon Principal/Buyer's employee/employees.
	j)	The Bidder shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the Principal/Buyer, and if he does so, the Principal/Buyer shall be entitled forthwith to rescind the contract and all other contracts with the Bidder. The Bidder shall be liable to pay compensation for any loss or damage to the Principal/Buyer resulting from such rescission and the Principal/Buyer shall be entitled to deduct the amount so payable from the money(s) due to the Bidder.
	k)	In cases where Irrevocable Letters of Credit have been received in respect of any contract signed by the Principal/Buyer with the Bidder, the same shall not be opened.
(2)	The decision of the Principal/Buyer to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder shall be final and binding on the Bidder, however, the same Bidder can approach the Monitor(s) appointed for the purposes of this Pact.	

Section 5 - Previous Transgression:

(1)	The Bidder declares that no previous transgressions occurred in the last three years with any other company in any country conforming to the anti-corruption approach or with any other public sector enterprise in India that could justify his exclusion from the tender process.
(2)	If the bidder makes incorrect statement on this subject, he can be disqualified from the tender process or further action can be taken.

Section 6 - Equal treatment of all Bidders/Contractor(s)/Subcontractors:

(1)	The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this integrity Pact, and to submit it to the Principal before contract signing.
2)	The Principal/Buyer will enter into agreements with identical conditions as this one with all bidders, contractors. In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact. In case of subcontracting, the principle contractor shall be solely responsible for the adherence to the provisions of IP by the subcontractor(s).
(3)	The Principal/Buyer will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violation Bidder(s)/Contractor(s)/ Subcontractor(s):

(1)	If the Principal/Buyer obtains knowledge of conduct of a Bidder, Contractor or subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor of subcontractor which constitutes corruption or if the Principal has substantive suspicion in this regard, the Principal/Buyer will inform the same to the Chief Vigilance Officer, MDL.

Section 8 - Independent External Monitor/Monitors:

(1)	The Principal/Buyer appoints competent and credible independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively whether and to what extent the parties comply with the obligations under this agreement.
(2)	The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairman & Managing Director of the Principal/Buyer.
(3)	The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Principal/Buyer including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.
(4)	The Principal/Buyer will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations, between the Principal/Buyer and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
(5)	As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal/Buyer and request the Management to discontinue or take corrective action, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the Monitor shall give an opportunity to the Bidder(s)/Contractor(s) to present its case before making its recommendation to the Principal/Buyer.
(6)	The Monitor will submit a written report to the Chairman & Managing Director of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the Principal/Buyer and, should the occasion arise, submit proposals for correcting problematic situations.
(7)	Monitor shall be entitle to compensation on the same terms as being extended to / provided to Independent Directors on the Board of Principal/Buyer.
(8)	If the Monitor has reported to the Chairman & Managing Director of the Principal, a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India and the Chairman & Managing Director of the Principal/Buyer has not, within the reasonable time

	taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
(9)	The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration:

	This pact begins when both parties have legally signed it. It expires for the Contractor **12 months** after the last payment under the contract and for all other Bidders **06** months after the contract has been awarded. If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above unless it is discharged / determined by Chairman & Managing Director of the Principal/Buyer.

Section 10 - Other provisions:

(1)	This agreement is subject to Indian Law, place of performance and jurisdiction is the Registered Office of the Principal/Buyer, i.e. Mumbai (For MDL). The Arbitration clauses provided in the main tender document/ contract shall not be applicable for any issue/dispute arising under this Integrity pact.
(2)	Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
(3)	If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
(4)	Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

Section 11 – Fall Clause: #

"The Bidder undertakes that it has not supplied/is not supplying similar products/ systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the Bidder to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance of elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the Bidder to the Principal/Buyer, if the contract has already been concluded."

For & on behalf of	For & on behalf of
Mazagon Dock Shipbuilders Limited	Bidder/Contractor
(Office Seal)	(Office Seal)
Place_____	
Date_____	
Witness 1:	Witness 2:
(Name & Address)	(Name & Address

_____

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