



KHULNA SHIPYARD LIMITED

BANGLADESH NAVY, KHULNA

BABE (F) - 632/2023-2024

30 May 2024

INTERNATIONAL TENDER NOTICE

01	Procuring Entity Name	Khulna Shipyard Limited, Bangladesh Navy, Khulna
02	Invitation For	Material for Slipways Operating and Loading Carriages and various type of Material for Piping System
03	Invitation Reference No.	(a) BABE (F) – M.Slipway Carriage/23-24 DATE: 30May 2024 (b) BABE (F) – 632/WTSIR/2023-2024 DATE: 30May 2024 (c) BABE (F) – 632/ETRU/2023-2024 DATE: 30May 2024 (d) BABE (F) – 632/ VFPG/2023-2024 DATE: 30May 2024
04	Procuring Method	Open Tender
05	Budget & Source of Funds	Own Finance
06	Tender Last Selling Date	For SL.(a) : 07 July 2024 For SL.(b, c, d):12 June 2024
07	Tender Closing Date & Time	For SL.(a) Date: 08 July 2024 Time:1115am For SL.(b, c, d) Date: 13 June 2024 Time:1115am
08	Tender Opening Date & Time	For SL.(a) Date: 08 July 2024 Time:1130am For SL.(b, c, d) Date: 13 June 2024 Time:1130am
09	Name & Address of the Office for Selling of Tender Documents:-	
	(1) Cash Section, Khulna Shipyard Ltd. Bangladesh Navy, Khulna. (2) Naval Store Sub Depot, Khilkhat Nama Para, Khilkhat, Dhaka.	
	Receiving & Opening Tender	Khulna Shipyard Ltd, Bangladesh Navy, Khulna
	(Tenderer's and their Authorized Representatives are allowed to attend)	
10	Price of Tender Document	Each Invitation Reference (SL. a, b, c, d) Tender set Tk.2,000.00 (Tk. Two Thousand) Non-refundable
11	Contact Details of Official	Mob: +8801674950715, Fax : 880-41-720404, Email: contact@khulnashipyard.com , piccomf.ksy@gmail.com
12	Special Instructions	The Procuring Entity reserves the right to reject all or any Tenders prior to acceptance without showing any reason.

Manager Admin



KHULNA SHIPYARD LIMITED

BANGLADESH NAVY, KHULNA

PHONE NO: PABX 02-47772003, FAX. NO: 880-41-720404

E-mail: contact@khulnashipyard.com, Web: www.khulnashipyard.com

IMPORTANT POINT

1. **TENDER NO: BABE (F) - 632/WTSIR/2023-2024 DATE: 30 May 2024.**
2. **DUE FOR OPENING ON: 13 JUNE 2024.**
3. **PRICE OF TENDER DOCUMENTS: Tk. 2,000.00** per set (Non-refundable).
4. EARNEST MONEY: **1%** (one) of the total quoted CFR value either in Bangladesh currency or equivalent US\$ / EURO / GBP etc. favoring Khulna Shipyard Ltd. (KSY). Khulna, in the form of Bank Draft / Pay Order / Bank Guarantee.
5. **NAME OF THE COMMODITY:** Various Items of Washer, Thermometer, Strainer, Indicator & Reducer as per (Annex- B,C,D & E).
6. **SOURCE OF FINANCE:** **Cash.**
7. **TERMS OF SUPPLY:** CFR Mongla / Chattogram Sea Port.
8. **PRICE:**
 - i) FOB and Ocean freight should be shown separately.
 - ii) Freight should be shown/endorsed on Bill of Lading.
 - iii) Freight will be paid at actual against Bill of Lading but not exceeding the amount shown in quotation/offer.
9. **DELIVERY/SHIPMENT:** 02 Months from the date of L/C.
10. **TENDER SHOULD REMAIN VALID:** 60 Days from the date of Tender opening date.
11. **THE TENDER DOCUMENTS MUST BE REQUIRED WITH SEAL AND SIGN THEREOF ON EACH PAGE:**

The Khulna Shipyard Ltd., Khulna invites quotation in duplicate (marked as "Original" and "Duplicate") from Manufacturers / Principal Suppliers for supply of the item(s) described in the attached sheet schedule (Annex-A) on firm CFR Mongla / Chattogram. Quotations will be received by this office up to **11-15 A.M.** and will be opened **11-30 A.M.** in public on the date specified above.
12. **AMENDMENTS TO TENDER DOCUMENTS:**
 - a. At any time prior to deadline for submission of bids the purchaser may, for any reason, whether of its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by the amendment(s).
 - b. The amendment(s) will be notified in writing by letter / email / KSY website or by cable to all prospective bidders who have purchased tender documents and the same will be binding on them.
 - c. In order to allow the prospective bidders reasonable time to take the amendment into account in preparing their bids, the purchaser may at its sole discretion extend the deadline for submission of bids.

PREPARATION AND SUBMISSION OF QUOTATION

13. **GENERAL:**

- a. Offers are to be dropped in the tender box provided for the purpose at the office of Khulna Shipyard Ltd., Khulna.
- b. Tender number and opening date as above should be written on the envelope. The envelope containing quotation should be sealed and addressed as follows:-

i. CONSIGNEE : **COMMANDING OFFICER
NAVAL STORES DEPOT,
NEW MOORING, CHATTOGRAM, BANGLADESH.
OR
COMMANDING OFFICER
NAVAL STORES DEPOT,
KALISPUR, KHULNA, BANGLADESH**

ii. NOTIFYING PARTY : **THE MANAGING DIRECTOR
KHULNA SHIPYARD LIMITED
BANGLADESH NAVY
KHULNA – 9201, BANGLADESH**

Tender number and opening date as above should be written on the envelope.

- c. Tender may be put into the Tender Box kept for this purpose at the above address, but care must be taken to ensure that it reaches this office on the date and time fixed. Late tenders will not be considered. Suppliers may also post the tenders to the **MANAGING DIRECTOR, KHULNA SHIPYARD LIMITED, BANGLADESH NAVY, KHULNA-9201, BANGLADESH**, so, as to reach him on due date and time. No responsibility will be accepted by buyer for late receipt.

- d. The Manufacturers / Principal Suppliers may quote in their own letter head, but it is essential that the tender schedule is also completed and returned, along with original money receipt to the buyer. If the schedule is not accordingly returned the quotation may not be considered.

- e. Tenderers may quote price Bangladesh Taka/ US Dollar/ in any International trading currency.

- f. Tenderers should be confirmed their credit report issued from tenderers banks and this credit report should be enclosed in the original offer / quotation otherwise L/C opening bank should be arranged to collect this credit report and necessary cost in this respect will be realized from the supplier's bill/ L/C value.**

- g. Tenders should enclose with the quotation the Original Proforma Invoice of their Principal and the Proforma should be based on FIRM C & F PRICE.

- h. Quotation should be strictly in accordance with the following:

- (1) Accounting unit prescribed in the tender enquiry.
- (2) Terms of delivery and place of delivery as specified in the tender enquiry.

- i. The name of the manufacturers, principal suppliers and country/countries of origin with port of shipment proposed should invariably be indicated.

- j. Tenderers must submit with the quotation the Original Proforma Invoice of their Principals and the Proforma Invoice shall clearly indicate detail technical specification, the percentage of commission, if any, included in FOB price for the local agent. Commission payable to the local agent by the foreign supplier will be deducted and paid to local agent in equivalent Local currency at the exchange rate at which the bill of exchange is negotiated. **Buyers will not pay any extra commission or otherwise to the Local Agent.**

- k. No claims on the ground of typographical errors in calculating prices would be entertained later and the tendering firms would be asked under points of penalty and disciplinary action to supply at price they have originally quoted.

l. Local Agent/ supplier should also submit along with the tender valid Indenting agent registration certificate issued by the Bangladesh Indenting Agent Association (BIAA), Trade license, and TIN certificate. In absence of original certificate attested Photostat copy by first class officer may serve.

m. Tenderers should quote the price as per schedule given in Annex A to this document.

n. **Supplier must quote per goods for each line item (as per Annex B, C, D, E & F). KSY reserve the right to purchase partially or full quantity of the quoted goods.**

14. **CONTRACT.** The terms and conditions of the tender document shall form an integral part of the contract/purchase order document. The tenderer is requested to check this set of tender documents in order to ensure proper compliance and the "Form of Acknowledgement" along with the "Certificate as to **Corporate Principal**", where applicable,' duly filled in be returned along with the **tender**.

15. **BID LANGUAGE.** The bid's, all correspondences and documents relating thereto exchanged between the bidders and the purchaser shall be written in English Language.

16. **TERMS OF PAYMENT:**

i. L/C for full purchase amount will be opened by Khulna Shipyard Limited in favour of the principal supplier under the following payment terms where the L/C commission including VAT & marine insurance will be borne by foreign principal/ local agent (supplier) at L/C opening.

a. 80% of total CFR value will be paid on delivery of the items described under the scope of supply and on production of following shipping documents:

- (1) Complete set of original 'Clean on Board' Bill of Lading / mentioning the amount of freight on Bill of Lading.
- (2) Supplier's invoice and packing list signed in ink,
- (3) Buyer's authorized inspection agent's certificate,
- (4) Fax/E-mail/Swift advice for insurance cover,
- (5) Certificate of origin,
- (6) Certificate showing that the material has been shipped in a non-Israel vessel,
- (7) Undertaking regarding supply/ re-placement of short supplied and defective materials on free of cost demanded by the buyer.

b. Remaining 20% of L/C amount will be paid on producing "Acceptance certificate after satisfactory mustering jointly carried out by the buyer's and supplier's representative at Khulna Shipyard Ltd.

ii. Bank charges in Bangladesh for opening of L/C shall be borne by the supplier. Any Bank charges for revalidation or amendment of the L/C on the request of the supplier shall be exclusively borne by the beneficiaries and not by the Khulna Shipyard Ltd. Confirmation of letter of credit by foreign bank will not be entertained.

iii. Bank charges for withdrawal against L/C established by buyer will be borne by the beneficiary.

iv. The beneficiary will have to borne the following foreign bank charges: -

- (1) Negotiation commission.
- (2) Payment commission.
- (3) Postage & Cable charges.
- (4) L/C confirmation charges / additional (ADD) confirmation charges.
- (5) L/C amendment commission/ L/C extension commission.

(6) L/C cancellation charges.

17. **PACKING AND MARKING:**

a. The seller shall be responsible for proper packing and marking the goods for shipment by rail, road and sea. Goods shall be assembled to the maximum extent practical prior to shipment. Goods shall be packed so as to withstand usually rough handling and ensure delivery without loss or damage.

b. Each packet/ Bundle must have the following information printed in BOLD LETTERS on the outside

- (1) Name of the consignee and Destination,
- (2) Letter of credit number,
- (3) Gross and net weight,
- (4) Serial number of Bundle and,
- (5) Name and address of the seller,

18. **QUANTITY:**

a. Check of quality, quantity and condition of goods at the discharging port/ place i.e. Mongla / Chittagong will be carried out by the buyer at their cost.

b. The quotation must be based on firm prices for individual items. Average prices should not be quoted.

c. The approximate weight of each Packet/ Bundle should be shown separately on quotation.

d. The Khulna Shipyard Ltd., reserves the right of awarding contracts for individual technically acceptable items on the lowest acceptable prices. Firms quoting on an average basis for joint items do so at their own risk. The Khulna Shipyard Ltd., will not make any allowances for this action of the tendering firms when awarding contracts for individual items which if and when refused by tendering firms may lead to disciplinary action.

SPECIAL CLAUSES

19. **PRE SHIPMENT INSPECTION (PSI).** On the basis of KSY requirement, comprehensive inspection of the stores regarding quality, specifications, quantity and supervision of the ship/loading port will be carried out prior to shipment by our nominated inspection company or their accredited agent who will issue an inspection certificate in token of their having carried out the inspection. Suppliers/manufacturers name and full address with the name and address of the supplier, if any should be intimated to the inspection agent. Supplier will be liable to pay the expenses for rejected stores and also for such inspection, which will become payable to the inspection due to multiple intervention/visits and/ or fruitless visits the call of and to suit the convenience of the supplier. The inspector should be provided with all facilities to carry out their job smoothly and without interface. The provisions laid down above do not restrain the buyer from a detailed inspection of quality and quantity of the cargo on arrival of the same at the port of discharge. Charge to be borne by the buyer.

20. **LATE SHIPMENT/DELIVERY AND LIQUIDATED DAMAGES:** Late shipment/ delivery will not be accepted. However with reasonable cause, if KSY agrees for late Shipment/ Delivery, in that case followings will be imposed:

a. On genuine reasons / grounds beyond the control of the suppliers / contractor, extension of delivery period may, however, be granted by the Purchase Approving Authority (KSY) without realization of any liquidated damage provided validity of their performance guarantee covers such extension.

- b. Liquidity damage equivalent to half percent per week or part thereof on the value of the undelivered goods will be realized from the supplier/contractor.
- c. In specific cases, where delay in shipment is likely to cause dislocation of work or financial loss, or related to the delivery of ships/ handed over of construction work, a higher rate of liquidity damage from 5% to 10% (as decided by KSY) per week or part thereof on the value of the undelivered goods will be charged.
- d. In case of delay in shipment beyond approved timeframe as stated in Clause no. 9, this schedule will be treated as cancelled and the full Performance Guarantee shall also be forfeited as a consequential effect.
- e. In the event of any delay in dispatch of the shipping documents or their incorrect preparation, the supplier shall be responsible for any demurrage, extra handling charges or any other expense arising there from.
- f. Minimum 14 days free time for container shipment at destination port must allow for each shipment.

21. **TERMINATION OF CONTRACT:**

- a. At any time during the period of this contract, the Purchaser shall have the right to cancel contract under following reasons:
 - (1) If the supplier fails to supply the contracted item as per specification given in the purchase order/contract of the contracted item being rejected by the competent technical authority.
 - (2) If the supplier fails to deliver the contracted item within the date specified in the purchase order/contract or any extensions thereof.
 - (3) In the event of breach of any contractual obligations given in the terms and conditions of the purchase order/contract.
- b. Moreover, in case of termination of contract as under this clause the Purchaser shall have the right to decide taking appropriate punitive action against the supplier as deemed suitable by the KSY authority.
- c. Decisions under this clause SHALL not be subject to arbitration.

22. **INSURANCE.** Insurance of the consignment will be arranged by buyer after shipment to the destination up to Khulna Shipyard Ltd (up to buyers' premises) but all charge including VAT will be paid by foreign principal/local agent (supplier) at L/C opening. Quotation should, therefore, be included with the insurance charges.

23. **EARNEST MONEY.** All bidders must submit earnest money for an amount equivalent to 1% (one) of the actual quoted CFR value of the stores either by Bangladesh currency or equivalent to any International Trading currencies favouring the Khulna Shipyard Ltd., in bank draft/pay order / bank guarantee /which will be issued by any scheduled bank of Bangladesh. In case bank guarantee is submitted, the same should remain valid for 90 days from the date of opening of the tender. Neither any inland cheque for a cheque /guarantee issue by Bank of foreign countries will be entertained. Earnest money is liable to forfeiture if the bidder for any reason whatsoever withdraws or modifies its offer; or violates the terms after opening of the tender and before expiry of the validity of the offer; or fails to furnish the required performance bond within the stipulated time after issuance of letter of intent. Bid bond/earnest money of unsuccessful tenderer would be returned once a decision of the tender is made. A tender not

accompanied by earnest money/bid bond would be rejected as non-responsive. Bid bond of the successful bidder shall be returned after furnishing performance bond. A specimen copy of bid bond is enclosed herewith as annex-F

24. **PERFORMANCE BOND.** The successful tenderer will be required to furnish performance bond to the extent 10% of the total CFR value either in the form of pay order / bank draft or bank guarantee for the satisfactory execution of the order. The performance bond should be given by any Bangladesh Commercial Bank under their (Bank) full risk and liabilities. If the same is submitted by bank guarantee it must remain valid 12 (Twelve) months beyond the day of shipment. Performance bond must be furnished within 10 (Ten) day's from the date of letter of intent. It will be liable for forfeiture if the supplier fails to supply the goods within the specified time or commits any breach of contract. A specimen copy of performance bond is enclosed herewith as Annex-G

25. **INDEMNITY.** The supplier have to indemnify the buyer against all claims which may be made in respect of the stores for infringement of any right protected by patent, registration of design etc. and shall take all risk of accidents or damage which may cause or failure of the supply from whatever cause arising and take entire responsibility for the sufficiency of the means used by the supplier for the fulfillment of the contract.

26. **INCREASE OR DECREASE IN QUANTITY OF CONTRACT:**

The buyer reserves the right at the time of award of contract, with no adjustment in unit price (bid), to increase or decrease the quantity tendered. The buyer also reserves the right to accept or reject any or all the tenders or to waive any informality, minor deviation or omission.

Award would be made to the bidder whose responsive bid determined to be the lowest evaluated bid and who meets the specification and other terms and conditions of the tender document.

27. Should the suppliers be adjudged insolvent, the buyer shall have the power to terminate the contract.

28. **DISQUALIFICATION OF OFFER:**

a. Any addition or alternator to the specification or rate quoted by a firm in the tender after not only be ignored but should also render the firms liable to disqualification.

b. Any tender received late and not strictly confirming to the terms and conditions prescribed in this tender documents not accompanied with the requisite earnest money and the money receipt of tender price and registration certificate may be liable for rejection.

29. **TAXES AND OTHER CHARGES:**

a) All Customs duties, taxes and other charges levied on the goods by authorities in buyer's country shall be borne by the buyer and shall not be included in the bid price.

b) Charges of such nature in seller's country or in any country other than the buyer's country shall be borne by the sellers.

c) In the event of any delay in dispatch of the shipping documents or their incorrect preparation, the supplier shall be responsible for any demurrage, extra handling charges or any other expense arising there from.

30. **BREACH OF CONTRACT.** On any breach of contract by the seller, the buyer may recover the actual loss suffered and the amount may be realized by encashing the performance guarantee.

31. **APPLICABLE LAW.** The purchase order shall be interpreted in accordance with the law of the buyer's country.

32. **FORCE MAJEURE.** Should any circumstance arise preventing either contracting party from wholly or partly carrying its obligations under the present contract, namely Natural Calamity, Strike, Riots, firm acts and elements of War, Military Operation of any, Nature, Block ads and any unforeseen event which is beyond human control the period stipulated for the performance of this contract shall be extended or as long as the circumstances prevail. Provided that in the event of these circumstances continuing for more than thirty days, either party shall have to refuse to fulfill its obligations under this contract and in such case neither party shall be entitled to indemnification of any losses it may sustain.

The party unable to carry out its obligation under this contract shall immediately advise the other party of the commencement and the termination of circumstances preventing the performance of the contract. A certificate issued by the Chamber of Commerce of the sellers of the buyers' country shall be sufficient proof of the existence and duration of such circumstances.

33. **ARBITRATION.** In the event of any dispute or difference arising out of the terms and conditions as specified above, the same shall be referred to the award of a sole. Arbitrator appointed by the parties on mutual agreement, failing which it shall be referred to the award of the two Arbitrators, from each side (buyer and seller), or in the case of disagreement between the two arbitrators to the award of an umpire to be appointed by the two arbitrator in writing before proceeded on the reference of the decision of the sole arbitrator or of the two arbitrator in the writing before proceeded on the reference of the decision of the sole arbitrator or of the two Arbitrators or the umpire as the case may be shall be final, conclusive and binding upon the parties. The provisions of the arbitration Act 2001 and rules there under and any statutory modification there of shall deem to apply to the said arbitration. The place of arbitration shall be Dhaka, Bangladesh any statutory modification enactment thereof for the time being in force in Bangladesh shall apply to the arbitration proceeding.

The above terms and conditions are not absolute, the Khulna Shipyard Ltd., Bangladesh Navy, reserves the right to incorporate additional terms and conditions, if necessary. The Khulna Shipyard Ltd., BN also is not bound to accept the lowest tender and reserves the right to reject any or all tenders without assigning any reason whatsoever.

SK. SHAH MOSHIUR RAHMAN
Manager Admin
For Managing Director

Enclosure:

- | | | |
|----|---|------------|
| A. | Format of Price Schedule (Annex - A) | - 01 Page |
| B. | Technical Specification (Annex - B, C, D, E & F) | - 22 Pages |
| C. | Format of Bank Guarantee in Lieu of Earnest Money (Annex-G) | - 01 Page |
| D. | Format of Performance Bank Guarantee (Annex-H) | - 01 Page. |



KHULNA SHIPYARD LTD.
BANGLADESH NAVY, KHULNA

PHONE NO: PABX 02-477720003, FAX. NO: 880-41-720404
E-mail: contact@khulnashipyard.com , oiccomf.ksy@gmail.com

ANNEX-A

SCHEDULE TO TENDER ENQUIRY NO: BABE (F)-632/WTSIR/2023-2024 DATED: 30 MAY 2024
TENDER OPENING DATE: 13 JUNE 2024 AT 1130 AM HOURS

The Complete Raw Materials/Items of Piping System:

DESCRIPTION OF GOODS (As per Annex- B to F)		Quantity	FOB Price Per Unit	Freight Per Unit	Item wise Total CFR Price
1.	Washer (Annex-B)	Itemise			
2.	Thermometer & Pyrometer Set (Annex-C)	Itemise			
3.	Strainer (Annex-D)	Itemise			
4.	Indicator Set (Annex-E)	Itemise			
5.	Reducer (Annex-F)	Itemise			
Total Price=					

N.B. Supplier must follow commercial & Financial Terms that are integrated at schedule.

Yours quotation No.

Signature, Name and address of the tenderer:

Date :

Terms of delivery:

Telephone No :

**TECHNICAL SPECIFICATION OF CARBON STEEL AND STAINLESS STEEL NUT- BOLT
WITH SPRING WASHER**

1. Name of Equipment : Nut- bolt with spring washer
2. Purpose : Nut- bolt with spring washer will be used to fasten the parts together in a vessel.
3. Quantity : As per serial 10
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned. For each type of nut- bolt with spring washer
7. Type : Marine grade.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The nut- bolt with spring washer should have the following technical requirements:

a. Carbon Steel Nut- Bolt with Spring Washer

Ser	Carbon Steel Nut- Bolt with Spring Washer Specification	Certificate	Piece (For 01 vessel)	Piece (For 03 vessel)
1.	Size: M10 X 45 mm Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 531-01 (FW generation & Domestic FW system diagram)	Manufacturer Certificate	300 Pcs	900 Pcs
2.	Size: M10 X 50 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel. Dwg: 551-01 (Compressed and control air system for services).	Manufacturer Certificate	400 Pcs	1200 Pcs
3.	Size: M10 X 65 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 261-01 (Fuel oil service system) Dwg: 593-01 (Oily water system)	Manufacturer Certificate	800 Pcs	2400 Pcs
4.	Size: M12 X 50 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be	Manufacturer Certificate	400 Pcs	1200 Pcs

Ser	Carbon Steel Nut- Bolt with Spring Washer Specification	Certificate	Piece (For 01 vessel)	Piece (For 03 vessel)
	carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 531-01(FW generation & Domestic FW system diagram) Dwg: 555-03 (CO2 System)			
5.	Size: M12 X 60 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 551-01 (Compressed and control air system for services). Dwg: 528-01 (Black and grey water system).	Manufacturer Certificate	2113 Pcs	6339 Pcs
6.	Size: M12 X 65 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 522-01(Magazine Spraying system) Dwg: 261-01 (Fuel oil service system) Dwg: 514-05 (Chilled water diagram for air conditioning) Dwg: 541-01 (FO Fill & Transfer system) Dwg: 543-01 (Lube oil system) Dwg: 593-01 (Oily water system)	Manufacturer Certificate	1362 Pcs	4086 Pcs
7.	Size: M12 X 100 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 541-01 (FO Fill & Transfer system)	Manufacturer Certificate	100 Pcs	300 Pcs
8.	Size: M14 X 55 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 531-01(FW generation & Domestic FW system diagram)	Manufacturer Certificate	200 Pcs	600 Pcs
9.	Size: M14 X 60 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 551-01(Compressed and control air system for services).	Manufacturer Certificate	820 Pcs	2460 Pcs

Ser	Carbon Steel Nut- Bolt with Spring Washer Specification	Certificate	Piece (For 01 vessel)	Piece (For 03 vessel)
	Dwg: 528-01(Black and grey water system)			
10.	Size: M14 X 65 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 521-01(Fireman and wash- down system diagram) Dwg: 522-02 (Vehicle Deck Sprinkler system) Dwg: 526-01 (Deck scuppers and Internal Drains system) Dwg: 529-01(Bilge system) Dwg: 253-01(ME & AE SW Cooling system)	Manufacturer Certificate	4996 Pcs	14988 Pcs
11.	Size: M14 X 70 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 514-05 (Chilled water diagram for air conditioning)	Manufacturer Certificate	550 Pcs	1650 Pcs
12.	Size: M14 X 120 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 521-01(Fire main and wash down system diagram) Dwg: 522-02(Vehicle Deck Sprinkler system) Dwg: 529-01(Bilge system) Dwg: 253-01 (ME & AE SW Cooling system).	Manufacturer Certificate	546 Pcs	1638 Pcs
13.	Size: M16 X 65 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 521-01(Fire main and wash down system diagram) Dwg: 522-02(Vehicle Deck Sprinkler system) Dwg: 506-01 (Vents and sounding system) Dwg: 506-02 (Fuel Oil Overflow) Dwg: 529-02 (Ballast system)	Manufacturer Certificate	9360 Pcs	28080 Pcs

Ser	Carbon Steel Nut- Bolt with Spring Washer Specification	Certificate	Piece (For 01 vessel)	Piece (For 03 vessel)
	Dwg: 531-01 (FW generation & Domestic FW system diagram). Dwg: 541-01 (FO Fill & Transfer system) Dwg:528-01(Black and grey water system) Dwg: 529-01(Bilge system) Dwg: 253-01 (ME & AE SW Cooling system)			
14.	Size: M16 X 120 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg: 521-01 (Fire main and wash down system diagram) Dwg:522-02(Vehicle Deck Sprinkler system) Dwg: 529-02(Ballast system) Dwg: 541-01 (FO Fill & Transfer system) Dwg: 529-01 (Bilge system) Dwg: 253-01 (ME & AE SW cooling system)	Manufacturer Certificate	576 Pcs	1728 Pcs
15.	Size: M18 X 65 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg:521-01(Fire main and wash down system diagram) Dwg: 522-02(Vehicle Deck Sprinkler system)	Manufacturer Certificate	348 Pcs	1044 Pcs
16.	Size: M18 X 120 Material: Galvanized Carbon Steel Standard: Bolts shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts shall be carbon steel A563 GR A. ASME B18.2.2. and Spring washer shall be carbon steel Dwg:521-01(Fire main and wash down system diagram) Dwg: 522-02(Vehicle Deck Sprinkler system)	Manufacturer Certificate	84 Pcs	252 Pcs

b. Stainless Steel Nut- Bolt with Spring Washer

Ser	Stainless Steel Nut- Bolt with Spring Washer Specification	Certificate	Piece (For 01 vessel)	Piece (For 03 vessel)
1.	Size: M14 X 60 Material: Stainless Steel Standard: Bolt shall be 316 SST ASTM	Manufacturer Certificate	30 Pcs	90 Pcs

Ser	Stainless Steel Nut- Bolt with Spring Washer Specification	Certificate	Piece (For 01 vessel)	Piece (For 03 vessel)
	F593, ASME B18.2.1, Nuts shall be 316 SST ASTM F594, Condition CW, ASME B18.2.2. and Spring Washer shall be Stainless Steel Dwg: 259-01 (Exhaust gas system)			
2.	Size: M20 X 90 Material: Stainless Steel Standard: Bolt shall be 316 SST ASTM F593, ASME B18.2.1, Nuts shall be 316 SST ASTM F594, Condition CW, ASME B18.2.2. and Spring Washer shall be Stainless Steel Dwg: 259-01 (Exhaust gas system)	Manufacturer Certificate	150 Pcs	450 Pcs
3.	Size: M26 X 120 Material: Stainless Steel Standard: Bolt shall be 316 SST ASTM F593, ASME B18.2.1, Nuts shall be 316 SST ASTM F594, Condition CW, ASME B18.2.2. and Spring Washer shall be Stainless Steel Dwg: 259-01 (Exhaust gas system)	Manufacturer Certificate	400 Pcs	1200 Pcs

11. Standard necessary : N/A
accessories

12. Documents : N/A

13. Certificate : Required manufacturer certificate or statement declaration confirming Nut- bolt with spring washer have been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.

14. Installation Supervision : N/A.

15. Test-Trial and : N/A.
commissioning

16. Training : N/A.

TECHNICAL SPECIFICATION OF THERMOMETER/ PYROMETER

1. Name of Equipment : Thermometer/ Pyrometer
2. Purpose : Thermometer/ Pyrometer are used to monitor the local fluid teperature within the connected pipes in different direction, to track changes in fluid temperature and also measure the temperature of machineries components.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Thermometer/ Pyrometer
7. Type : Marine Uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The Thermometer/ Pyrometer should have the following technical requirements:

Ser	Name of the System	Name & Type	Range	Qty for 01 Vssel	Qty for 03 Vssel
1.	All System except Exhaust System	Name: Complete Thermometer Set Type: Local Reading/ Direct Reading Standard: MIL-SDBK-298 or Equivalent Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	0~150 ⁰ C	17 Pcs	51 Pcs
2.	Exhaust System	Name: Complete Pyrometer Set Type: Local Reading/ Direct Reading Standard: MIL-SDBK-298 or Equivalent Drawing No: 534-259-01 (Exhaust Gas System)	0~700 ⁰ C	06 Pcs	18 Pcs

11. Standard necessary accessories : All Thermometer and Pyrometer will be ready use/ plug & play system.
12. Documents : N/A
13. Certificate : N/A
14. Installation Supervision : N/A.
15. Test-Trial and commissioning : N/A.
16. Training : N/A.

TECHNICAL SPECIFICATION OF VARIOUS TYPE OF PRESSURE INDICATOR

1. Name of Equipment : Various type of Pressure Indicator
2. Purpose : Pressure Indicators also known as pressure gauge. They are inform the pressure of fluids and gases within a closed system.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Pressure Indicator
7. Type : Marine Uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The Pressure Indicator should have the following technical requirements:
 - a. **Compound Pressure Indicator:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Firemain and Wash Down	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-521-01 (Firemain and Washdown)	0~17	02 Pcs	06 Pcs
2.	Vehicle Deck Sprinkler System	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-522-02 (Vehicle Deck Sprinkler System)	0~17	01 Pcs	03 Pcs
3.	Black & Grey water System Diagram	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-528-01 (Black & Grey water System Diagram)	0~5	02 Pcs	06 Pcs
4.	Ballast System	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-529-02 (Ballast System)	0~6	02 Pcs	06 Pcs
5.	FW Generation & Domestic FW System Diagram	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	0~11	04 Pcs	12 Pcs
6.	Lub-oil system	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-543-01 (Lub-oil system)	0~7	04 Pcs	12 Pcs
7.	ME & AE Sea Water Cooling System	Name: Complete Compound Pressure Indicator set Type: Dial Type-Elastic Element Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	0~5	04 Pcs	12 Pcs

b. **Pressure Indicator:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Firemain and Washdown System	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-521-01 (Firemain and Washdown System)	0~17	04 Pcs	12 Pcs
2.	Magazine Spraying Arrangement	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-522-01 (Magazine Spraying Arrangement)	0~17	02 Pcs	06 Pcs
3.	Vehicle Deck Sprinkler System	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-522-02 (Vehicle Deck Sprinkler System)	0~17	05 Pcs	15 Pcs
4.	Black & Grey water System Diagram	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-528-01 (Black & Grey water System Diagram)	0~5	04 Pcs	12 Pcs
5.	Ballast System	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-529-02 (Ballast System)	0~6	02 Pcs	06 Pcs
6.	FW Generation & Domestic FW System Diagram	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	0~11	06 Pcs	18 Pcs
7.	Lub-oil system	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-543-01 (Lub-oil system)	0~7	04 Pcs	12 Pcs
8.	Oily Water System	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-593-01 (Oily Water System)	0~19	03 Pcs	09 Pcs
9.	ME & AE Sea Water Cooling System	Name: Complete Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	0~5	06 Pcs	18 Pcs

c. **Differential Pressure Indicator:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Firemain and Washdown System	Name: Complete Differential Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-521-01 (Firemain and Washdown System)	0~17	04 Pcs	12 Pcs
2.	Fuel Oil Service System	Name: Complete Differential Pressure Indicator Set	0~9	13 Pcs	39 Pcs

		Type: Dial Type-Elastic Element Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
3.	Chilled Water Diagram for Air-Condition	Name: Complete Differential Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-514-05 (Chilled Water Diagram for Air-Condition)	0~7	02 Pcs	06 Pcs
4.	ME & AE Sea Water Cooling System	Name: Complete Differential Pressure Indicator Set Type: Dial Type-Elastic Element Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	0~5	16 Pcs	48 Pcs

d. **Pressure Reducing Station:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Compressed & Control Air System	Name: Complete Pressure Reducing Station Set Size: DN: 50 Type: Dial Type-Elastic Element Drawing No: 534-551-01(Rev-1) (Compressed & Control Air System)	40 to 10	01 Sets	03 Sets
		Name: Complete Pressure Reducing Station Set Size: 40 x 32 Type: Dial Type-Elastic Element Drawing No: 534-551-01(Rev-1) (Compressed & Control Air System)	40 to 08	01 Sets	03 Sets

e. **Pressure Gauge Local Reading:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Compressed & Control Air System	Name: Complete Pressure Gauge Local Reading Set Size: As per Standard Type: Dial Type-Elastic Element Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	0 ~ 66	02 Pcs	06 Pcs
		Name: Complete Pressure Gauge Local Reading Set Size: As per Standard Type: Dial Type-Elastic Element High Pressure: (WP-44 bar, TP: 66 bar) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	0 ~ 66	04 Pcs	12 Pcs

2.	Chilled Water Diagram for Air-Condition	Name: Complete Pressure Gauge Local Reading Set Size: As per Standard Type: Dial Type-Elastic Element Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	0~7	03 Pcs	09 Pcs
3.	FO Fill & Transfer System	Name: Complete Pressure Gauge Local Reading Set Size: As per Standard Type: Dial Type-Elastic Element Drawing No: 534-541-01 (FO Fill & Transfer System)	0~5	04 Pcs	12 Pcs

f. **Vacuum and Pressure Gauge Local Reading:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Chilled Water Diagram for Air-Condition	Name: : Complete Vacuum and Pressure Gauge Local Reading Set Type: Dial Type-Elastic Element Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	0 ~ 7	02 Pcs	06 Pcs
2.	Black & Grey water System Diagram	Name: Complete Vacuum and Pressure Gauge Local Reading Set Type: Dial Type-Elastic Element Drawing No: 534-528-01 (Black & Grey water System Diagram)	0~5	02 Pcs	06 Pcs
3.	FO Fill & Transfer System	Name: Complete Vacuum and Pressure Gauge Local Reading Set Type: Dial Type-Elastic Element Drawing No: 534-541-01 (FO Fill & Transfer System)	0~5	02 Pcs	06 Pcs
4.	Oily Water System	Name: Complete Vacuum and Pressure Gauge Local Reading Set Type: Dial Type-Elastic Element Drawing No: 534-593-01 (Oily Water System)	0~18	03 Pcs	09 Pcs

g. **Torsion Meter:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Shafting Arrangement	Name: Complete Torsion Meter Set Type: Electric Drawing No: 534-243-01 (Shafting Arrangement)	Range to be mentioned	02 Sets	06 Sets

h. **Flow Meter:**

Ser	Name of the System	Name & Type	Range in Bar (Minimum)	Qty for 01 Vssel	Qty for 03 Vssel
1.	Fuel Oil Service System	Name: Complete Flow Meter Set Size: DN:20 Type: Dial Type-Elastic Element Drawing No: 534-261-01 (Fuel Oil Service System)	Range to be mentioned	02 Sets	06 Sets
		Name: Complete Flow Meter Set Size: DN:25 Type: Dial Type-Elastic Element Drawing No: 534-261-01 (Fuel Oil Service System)	Range to be mentioned	02 Sets	06 Sets
2.	FO Fill & Transfer System	Name: Complete Flow Meter Set Size: DN:65 Type: Dial Type-Elastic Element Drawing No: 534-541-01 (FO Fill & Transfer System)	Range to be mentioned	01 Sets	03 Sets

11. Standard necessary accessories : All gauge will be ready use/ plug & play system.
12. Documents : N/A
13. Certificate : N/A
14. Installation Supervision : N/A.
15. Test-Trial and commissioning : N/A.
16. Training : N/A.

**TECHNICAL SPECIFICATION OF Y-TYPE BASKET, SIMPLEX BASKET TYPE,
SIMPLEX, SEA CHEST, STAINLESS STEEL PLATE, DECK SCUPPER
STAINLESS STEEL PLATE AND BILGE ROSE BOX STRAINER**

1. Name of Equipment : Y-Type Basket, Simplex Basket Type, Simplex, Sea Chest, Stainless Steel Plate, Deck Scupper Stainless Steel Plate and Bilge Rose Box Strainer
2. Purpose : Strainer is used in between both side tightly connect pipes, valves, equipment and other components. They are easily and shortage way closed/ opened for transfer fluid, smooth flow and easy maintenance.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Strainer.
7. Type : Marine uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship

10. The Strainer should have the following technical requirements:

a. Strainer Y-Type Basket:

Ser	Strainer Y-Type Basket Specification	Certificate	Qty (For 01 Vessel)	Qty (For 03 Vessel)
1.	Size: DN: 20 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-514-05 (Chilled Water Diagram for Air-Condition)	N/A	01 Pcs	03 Pcs
2.	Size: DN: 50 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-514-05 (Chilled Water Diagram for Air-Condition)	N/A	02 Pcs	06 Pcs
3.	Size: DN: 65 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	N/A	02 Pcs	06 Pcs

b. **Strainer Simplex Basket Type:**

Ser	Strainer Simplex Basket Type Specification	Certificate	Qty (For 01 Vessel)	Qty (For 03 Vessel)
4.	Size: DN: 32 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	N/A	02 Pcs	06 Pcs
5.	Size: DN: 40 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	N/A	01 Pcs	03 Pcs
6.	Size: DN: 65 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-514-05 (Chilled Water Diagram for Air-Condition)	N/A	02 Pcs	06 Pcs
7.	Size: DN: 80 Type: Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-2953 or Equivalent Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	N/A	02 Pcs	06 Pcs

c. **Simplex Strainer:**

Ser	Simplex Strainer Specification	Certificate	Qty (For 01 Vessel)	Qty (For 03 Vessel)
8.	Size: DN: 150 Type: Strainer can be cleaned without interruption to the cooling water supply. Flanged Connections ANSI B16.5, class 150. Material: Bronze Standard: MIL-S-2953 or Equivalent Capacity: 236 m ³ /hr, Sea Water Flow Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	02 pcs	06 pcs

d. **Sea chest Strainer- ME and AE:**

Ser	Sea chest Strainer- ME and AE Specification	Certificate	Qty (For 01 Vessel)	Qty (For 03 Vessel)
9.	Name: Sea chest Strainer- ME Size: DN: 125 Type: Duplex Basket 1.6 mm Mesh size. Flanged Connection Type II, Class 2. Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-17849 or Equivalent Capacity: 85 m ³ /hr Drawing no: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	LR (Material) Certificate	04 Pcs	12 Pcs
10.	Name: Sea chest Strainer- AE Size: DN: 65 Type: Duplex Basket 1.6 mm Mesh size. Flanged Connection Type II, Class 2. Strainer can be cleaned without interruption to the cooling water supply. Material: Bronze Standard: MIL-S-17849 or Equivalent Capacity: 10.9 m ³ /hr Drawing no: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	LR (Material) Certificate	04 Pcs	12 Pcs

e. **Stainless steel strainer plate of Deck:**

Ser	Stainless steel strainer plate of Deck Specification	Certificate	Qty (For 01 Vessel)	Qty (For 03 Vessel)
11.	Size: DN: 40 Type: Perforated (10 mm Mesh Size) Material: Stainless Steel Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	N/A	14 Pcs	42 Pcs
12.	Size: DN: 50 Type: Perforated (10 mm Mesh Size) Material: Stainless Steel Drawing no: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	N/A	16 Pcs	48 Pcs
13.	Size: DN: 65 Type: Perforated (10 mm Mesh Size) Material: Stainless Steel Drawing no: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	N/A	12 Pcs	36 Pcs

f. **Bilge Rose Box Strainer:**

Ser	Bilge Rose Box Strainer Specification	Certificate	Qty (For 01 Vessel)	Qty (For 03 Vessel)
14.	Size: DN: 32 Type: Bilge rose with box hot dipped galvanized. Material: Steel Standard: MIL-S-16293 or Equivalent Drawing No: 534-593-01 (Oily Water System)	N/A	07 Pcs	21 Pcs
15.	Size: DN: 40 Type: Bilge rose with box hot dipped galvanized. Material: Steel Standard: MIL-S-16293 or Equivalent Drawing No: 534-593-01 (Oily Water System)	N/A	04 Pcs	12 Pcs
16.	Size: DN: 65 Type: Bilge rose with box hot dipped galvanized. Material: Steel Standard: MIL-S-16293 or Equivalent Drawing No: 534-529-01 (Bilge System)	N/A	16 Pcs	48 Pcs
17.	Size: DN: 80 Type: Bilge rose with box hot dipped galvanized. Material: Steel Standard: MIL-S-16293 or Equivalent Drawing No: 534-529-01 (Bilge System)	N/A	02 Pcs	06 Pcs

11. Standard necessary : N/A
accessories

12. Documents : N/A

13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10.

(b) Required manufacturer certificate or statement declaration confirming stainer has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10.

14. Installation Supervision : N/A.

15. Test-Trial and : N/A.
commissioning

16. Training : N/A.

TECHNICAL SPECIFICATION OF Cu-Ni, CARBON STEEL AND STAINLESS STEEL REDUCER

1. Name of Equipment : Cu-Ni, Carbon Steel and Stainless Steel Reducer
2. Purpose : Reducer is used in between both side tightly connect pipes, valves, equipment and other components. They are easily and shortage way closed/ opened for transfer fluid, smooth flow and easy maintenance.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Reducer.
7. Type : Marine uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship

10. **The Reducer should have the following technical requirements:**

a. **Copper Nickel Reducer:**

Ser	Copper Nickel Reducer Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: 20 X 15 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	05 Pcs	15 Pcs
2.	Size: 32 X 25 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	02 Pcs	06 Pcs
3.	Size: DN: 40 X 25 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-522-01 (Magazine Spraying Arrangement)	Manufacturer Certificate	02 Pcs	06 Pcs
4.	Size: 48 X 42 Material: Cu-Ni 90-10	Manufacturer Certificate	05 Pcs	15 Pcs

	Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)			
5.	Size: 60 X 42 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	06 Pcs	18 Pcs
6.	Size: 60 X 48 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	05 Pcs	15 Pcs
7.	Size: DN: 65 X 20 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing no: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	04 Pcs	12 Pcs
8.	Size: DN: 65 X 25 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing no: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	04 Pcs	12 Pcs
9.	Size: Size: DN: 65 X 50 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-514-05 (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	05 Pcs	15 Pcs
10.	Size: DN: 80 X 65 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-522-01 (Magazine Spraying Arrangement)	Manufacturer Certificate	05 Pcs	15 Pcs

	Drawing no: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
11.	Size: DN: 80X125 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	01 Pcs	03 Pcs
12.	Size: DN: 100X65 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	05 Pcs	15 Pcs
13.	Size: DN: 100X80 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-522-01 (Magazine Spraying Arrangement)	Manufacturer Certificate	02 Pcs	06 Pcs
14.	Size: DN: 100X125 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	01 Pcs	03 Pcs

b. **Carbon Steel Reducer:**

Ser	Carbon Steel Reducer Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 20 X 15 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: II Drawing no: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	04 Pcs	12 Pcs
2.	Size: DN: 25 X 20 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-551-01, (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	04 Pcs	12 Pcs

3.	Size: DN: 32 X 20 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	10 Pcs	30 Pcs
4.	Size: DN: 32 X 25 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: II Drawing no: 534-551-01 (Rev-1) (Compressed & Control Air System) Remarks: CLASS 150 is not sufficient for high pressure line	LR (Material) Certificate	10 Pcs	30 Pcs
5.	Size: DN: 40 X 32 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	04 Pcs	12 Pcs
6.	Size: DN: 50 X 32 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	04 Pcs	12 Pcs
7.	Size: DN: 50 X 40 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	08 Pcs	24 Pcs
8.	Size: DN 65 X 50 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	4 Pcs	12 Pcs
9.	Size: DN 80 X 65 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	6 Pcs	18 Pcs
10.	Size: DN:100 X 50 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III	Manufacturer Certificate	4 Pcs	12 Pcs

	Drawing No: 534-528-01 (Black & Grey water System Diagram)			
11.	Size: DN 100 X 80 Type: Socket Weld Material: Carbon Steel (Hot Dip Galvanized) Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	3 Pcs	9 Pcs
12.	Size: 15 X 25 Type: Butt Weld Materials: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	04 Pcs	12 Pcs
13.	Size: DN: 32 X 25 Type: Butt Weld Materials: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	01 Pcs	03 Pcs
14.	Size: DN: 40 X 32 Type: Butt Weld Materials: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	01 Pcs	03 Pcs
15.	Size: DN: 40 X 50 Type: Butt Weld Material: Carbon Steel Standard: ASTM A234, SCH40 ASME B16.9 Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	10 Pcs	30 Pcs
16.	Size: DN: 40 X 65 Type: Butt Weld Material: Carbon Steel Standard: ASTM A234, SCH40 ASME B16.9 SEAMLESS, ASME B36.10 Class: III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	05 Pcs	15 Pcs
17.	Size: DN: 50 X 40 Thickness: SCH.40 Type: Butt weld Material: Carbon Steel Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing no: 534-543-01 (Lub-oil system)	Manufacturer Certificate	01 Pcs	03 Pcs
18.	Size: DN: 50 X 40 Type: Butt Weld Materials: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	01 Pcs	03 Pcs
19.	Size: DN: 50 X 65 Type: Butt Weld Material: Carbon Steel	Manufacturer Certificate	10 Pcs	30 Pcs

	Standard: ASTM A234, SCH40 ASME B16.9 SEAMLESS, ASME B36.10 Class: III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)			
20.	Size: DN: 65 X 15 Type: Butt Weld Materials: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	01 Pcs	03 Pcs
21.	Size: DN: 65 X 50 Type: Butt Weld Materials: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	01 Pcs	03 Pcs
22.	Size: DN: 65 X 80 Type: Butt Weld Material: Carbon Steel Standard: ASTM A234, SCH40 ASME B16.9 SEAMLESS, ASME B36.10 Class: III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	04 Pcs	12 Pcs
23.	Size: DN: 80 X 65 Thickness: SCH.40 Type: Butt Weld Material: Carbon Steel Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	04 Pcs	12 Pcs

c. **Stainless Steel Reducer:**

Ser	Stainless Steel Reducer Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 150 X 125 Thickness: SCH. STD Type: LR Butt Weld Material: Stainless Steel Standard: ASTM A234 TYPE 316L, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	01 Pcs	03 Pcs
2.	Size: DN: 200 X 150 Thickness: SCH. 10S Type: LR Butt Weld Material: Stainless Steel Standard: ASTM A234 TYPE 321, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	02 Pcs	06 Pcs
3.	Size: DN: 500 X 300 Thickness: SCH. 10S Type: LR Butt Weld Material: Stainless Steel	Manufacturer Certificate	02 Pcs	06 Pcs

	Standard: ASTM A234 TYPE 321, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)			
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11. Standard accessories necessary : N/A
12. Documents : N/A
13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
- (b) Required manufacturer certificate or statement declaration confirming reducer has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
14. Installation Supervision : N/A.
15. Test-Trial commissioning and : N/A.
16. Training : N/A.

BANK GUARANTEE IN LIEU OF EARNEST MONEY

No.....

.....

Guarantee

Dated:

For (mention amount).

Dear Sirs,

Whereas (Name of tender floating organisation) under tender No. dated inviting tenders for supplies of (described supplies) has agreed to waive the requirement of Cash deposit / Call deposit of US\$ / £ / Tk..... being 1% (One percent) of the value of supplies as earnest money by the tenderer for making the supplies in accordance with the terms and conditions of the tenderer and the tenderer shall provide a bank guarantee for payment for the said amount.

And whereas the tenderer M/S.ofhas requested us (name of bank) of to issue as guarantee for payment of the amount of US\$/£/Tk when called upon.

In consideration of the aforesaid, we (name of bank) of hereby undertake and guarantee due performance of the tender by the tenderer M/S..... of and unconditionally and absolutely bind ourselves:

1. To make payment without any question whatsoever of US\$/£/Tk to.....(Name of organisation) or as directed by the organisation immediately on receipt of demand from the said, organisation in writing, in the event the tenderer fail to perform the tender. It is expressly understood that the organisation shall be the sole judge for-deciding whether the tenderer has performed the tender and fulfilled the terms and conditions of the tender.

2. It is specially stipulated and understood by the bank that any grant of time or indulgence to the tenderer without reference to the bank shall not in any manner tent to absolve the bank from its liability to make the payment stipulated above under this guarantee.

3. The Bank's commitment under this guarantee is limited to an amount of US\$/£/Taka(.....) only.

4. The guarantee will remain valid upto

Yours faithfully

..... Bank

(Seal of the Bank)

PERFORMANCE BANK GUARANTEE

Managing Director
 Khulna Shipyard Limited
 Bangladesh Navy
 Khulna, Bangladesh

Bank Guarantee No
 Dated:
 For (Mention amount)

Dear Sirs,

Whereas Khulna Shipyard Ltd., Bangladesh Navy, Khulna hereinafter referred to as the buyers proposed to enter into a contract through a Letter of Intent No dated hereinafter called the contract with (name of the sellers) of hereinafter referred to as the sellers for the supply of (described supplies) in accordance with the terms and conditions of the contract. And whereas the sellers have requested us (name of bank) to issue a guarantee for an amount of US\$ / £ / EURO / TK..... being 10% of the CFR value of the supplies.

In consideration aforesaid (name of bank) hereby undertake and guarantee due observance and performance of the terms and conditions of the contract by the sellers and we unconditionally and absolutely bind ourselves.

To make payment on demand, without demur and without reference to the sellers, of US\$ / £ / EURO / TK to the buyers or as directed by the buyers in writing, if the sellers shall fail to perform the contract or fulfill the terms and conditions thereof.

To keep guarantee valid and in force for 12 (Twelve) months from the start of warranty period but extendable if so required by the buyers.

The guarantee is unconditional and it is expressly understood that the buyers shall be sole judge for deciding whether the sellers have performed the contract and fulfilled the terms and conditions thereof.

It is specifically stipulated and understood by us (name of bank) that any grant of time or indulgence to the sellers without reference to us shall not in any manner tend to absolve us from our liability to make payment as stipulated above under this guarantee.

Our commitment under this guarantee is limited to an amount of US\$ / £ / EURO / TK..... only.

Yours faithfully

..... Bank

(Seal of the Bank)



KHULNA SHIPYARD LIMITED

BANGLADESH NAVY, KHULNA

PHONE NO: PABX 02-47772003, FAX. NO: 880-41-720404

E-mail: contact@khulnashipyard.com, Web: www.khulnashipyard.com

IMPORTANT POINT

1. **TENDER NO: BABE (F) - 632/ETRU/2023-2024 DATE: 30 MAY 2024.**
2. **DUE FOR OPENING ON: 13 JUNE 2024.**
3. **PRICE OF TENDER DOCUMENTS: Tk. 2,000.00** per set (Non-refundable).
4. EARNEST MONEY: **1%** (one) of the total quoted CFR value either in Bangladesh currency or equivalent US\$ / EURO / GBP etc favoring Khulna Shipyard Ltd.(KSY). Khulna, in the form of Bank Draft / Pay Order / Bank Guarantee.
5. **NAME OF THE COMMODITY:** Various Items of Elbow, Tee, Reducing Tee & 'U' Clamp as per (Annex-B,C,D & E).
6. **SOURCE OF FINANCE:** **Cash.**
7. **TERMS OF SUPPLY:** CFR Mongla / Chattogram Sea Port.
8. **PRICE:**
 - i) FOB and Ocean freight should be shown separately.
 - ii) Freight should be shown/endorsed on Bill of Lading.
 - iii) Freight will be paid at actual against Bill of Lading but not exceeding the amount shown in quotation/offer.
9. **DELIVERY/SHIPMENT:** 02 Months from the date of L/C.
10. **TENDER SHOULD REMAIN VALID:** 60 Days from the date of Tender opening date.
11. **THE TENDER DOCUMENTS MUST BE REQUIRED WITH SEAL AND SIGN THEREOF ON EACH PAGE:**

The Khulna Shipyard Ltd., Khulna invites quotation in duplicate (marked as "Original" and "Duplicate") from Manufacturers / Principal Suppliers for supply of the item(s) described in the attached sheet schedule (Annex-A) on firm CFR Mongla / Chattogram. Quotations will be received by this office up to **11-15 A.M.** and will be opened **11-30 A.M.** in public on the date specified above.
12. **AMENDMENTS TO TENDER DOCUMENTS:**
 - a. At any time prior to deadline for submission of bids the purchaser may, for any reason, whether of its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by the amendment(s).
 - b. The amendment(s) will be notified in writing by letter / email / ksy website or by cable to all prospective bidders who have purchased tender documents and the same will be binding on them.
 - c. In order to allow the prospective bidders reasonable time to take the amendment into account in preparing their bids, the purchaser may at its sole discretion extend the deadline for submission of bids.

PREPARATION AND SUBMISSION OF QUOTATION

13. GENERAL:

- a. Offers are to be dropped in the tender box provided for the purpose at the office of Khulna Shipyard Ltd., Khulna.

b. Tender number and opening date as above should be written on the envelope. The envelope containing quotation should be sealed and addressed as follows:-

- i. CONSIGNEE : **COMMANDING OFFICER
NAVAL STORES DEPOT,
NEW MOORING, CHATTOGRAM, BANGLADESH.
OR
COMMANDING OFFICER
NAVAL STORES DEPOT,
KALISPUR, KHULNA, BANGLADESH**
- ii. NOTIFYING PARTY : **THE MANAGING DIRECTOR
KHULNA SHIPYARD LIMITED
BANGLADESH NAVY
KHULNA – 9201, BANGLADESH**

Tender number and opening date as above should be written on the envelope.

c. Tender may be put into the Tender Box kept for this purpose at the above address, but care must be taken to ensure that it reaches this office on the date and time fixed. Late tenders will not be considered. Suppliers may also post the tenders to the **MANAGING DIRECTOR, KHULNA SHIPYARD LIMITED, BANGLADESH NAVY, KHULNA-9201, BANGLADESH**, so, as to reach him on due date and time. No responsibility will be accepted by buyer for late receipt.

d. The Manufacturers / Principal Suppliers may quote in their own letter head, but it is essential that the tender schedule is also completed and returned, along with original money receipt to the buyer. If the schedule is not accordingly returned the quotation may not be considered.

e. Tenderers may quote price Bangladesh Taka/US Dollar / in any International trading currency.

f. Tenderers should be confirmed their credit report issued from tenderers banks and this credit report should be enclosed in the original offer / quotation otherwise L/C opening bank should be arranged to collect this credit report and necessary cost in this respect will be realized from the supplier's bill/ L/C value.

g. Tenders should enclose with the quotation the Original Proforma Invoice of their Principal and the Proforma should be based on FIRM C & F PRICE.

h. Quotation should be strictly in accordance with the following:

- (1) Accounting unit prescribed in the tender enquiry.
- (2) Terms of delivery and place of delivery as specified in the tender enquiry.

i. The name of the manufacturers, principal suppliers and country/countries of origin with port of shipment proposed should invariably be indicated.

j. Tenderers must submit with the quotation the Original Proforma Invoice of their Principals and the Proforma Invoice shall clearly indicate detail technical specification, the percentage of commission, if any, included in FOB price for the local agent. Commission payable to the local agent by the foreign supplier will be deducted and paid to local agent in equivalent Local currency at the exchange rate at which the bill of exchange is negotiated. **Buyers will not pay any extra commission or otherwise to the Local Agent.**

k. No claims on the ground of typographical errors in calculating prices would be entertained later and the tendering firms would be asked under points of penalty and disciplinary action to supply at price they have originally quoted.

l. Local Agent/ supplier should also submit along with the tender valid Indenting agent registration certificate issued by the Bangladesh Indenting Agent

Association (BIAA), Trade license, and TIN certificate. In absence of original certificate attested Photostat copy by first class officer may serve.

m. Tenderers should quote the price as per schedule given in Annex A to this document.

n. **Supplier must quote per goods for each line item (as per Annex B, C, D & E). KSY reserve the right to purchase partially or full quantity of the quoted goods.**

14. **CONTRACT.** The terms and conditions of the tender document shall form an integral part of the contract/purchase order document. The tenderer is requested to check this set of tender documents in order to ensure proper compliance and the "Form of Acknowledgement" along with the "Certificate as to **Corporate Principal**", where applicable, duly filled in be returned along with the **tender**.

15. **BID LANGUAGE.** The bid's, all correspondences and documents relating thereto exchanged between the bidders and the purchaser shall be written in English Language.

16. **TERMS OF PAYMENT:**

i. L/C for full purchase amount will be opened by Khulna Shipyard Limited in favour of the principal supplier under the following payment terms where the L/C commission including VAT & marine insurance will be borne by foreign principal/ local agent (supplier) at L/C opening.

a. 80% of total CFR value will be paid on delivery of the items described under the scope of supply and on production of following shipping documents:

- (1) Complete set of original 'Clean on Board' Bill of Lading / mentioning the amount of freight on Bill of Lading.
- (2) Supplier's invoice and packing list signed in ink,
- (3) Buyer's authorized inspection agent's certificate,
- (4) Fax/E-mail/Swift advice for insurance cover,
- (5) Certificate of origin,
- (6) Certificate showing that the material has been shipped in a non-Israel vessel,
- (7) Undertaking regarding supply/ re-placement of short supplied and defective materials on free of cost demanded by the buyer.

b. Remaining 20% of L/C amount will be paid on producing "Acceptance certificate after satisfactory mustering jointly carried out by the buyer's and supplier's representative at Khulna Shipyard Ltd.

ii. Bank charges in Bangladesh for opening of L/C shall be borne by the supplier. Any Bank charges for revalidation or amendment of the L/C on the request of the supplier shall be exclusively borne by the beneficiaries and not by the Khulna Shipyard Ltd. Confirmation of letter of credit by foreign bank will not be entertained

iii. Bank charges for withdrawal against L/C established by buyer will be borne by the beneficiary.

iv. The beneficiary will have to borne the following foreign bank charges: -

- (1) Negotiation commission.
- (2) Payment commission.
- (3) Postage & Cable charges.
- (4) L/C confirmation charges / additional (ADD) confirmation charges.
- (5) L/C amendment commission/ L/C extension commission.
- (6) L/C cancellation charges.

17. **PACKING AND MARKING:**

- a. The seller shall be responsible for proper packing and marking the goods for shipment by rail, road and sea. Goods shall be assembled to the maximum extent practical prior to shipment. Goods shall be packed so as to withstand usually rough handling and ensure delivery without loss or damage.
- b. Each packet/ Bundle must have the following information printed in BOLD LETTERS on the outside
 - (1) Name of the consignee and Destination,
 - (2) Letter of credit number,
 - (3) Gross and net weight,
 - (4) Serial number of Bundle and,
 - (5) Name and address of the seller,

18. **QUANTITY:**

- a. Check of quality, quantity and condition of goods at the discharging port/ place i.e. Mongla / Chittagong will be carried out by the buyer at their cost.
- b. The quotation must be based on firm prices for individual items. Average prices should not be quoted.
- c. The approximate weight of each Packet/ Bundle should be shown separately on quotation.
- d. The Khulna Shipyard Ltd., reserves the right of awarding contracts for individual technically acceptable items on the lowest acceptable prices. Firms quoting on an average basis for joint items do so at their own risk. The Khulna Shipyard Ltd., will not make any allowances for this action of the tendering firms when awarding contracts for individual items which if and when refused by tendering firms any lead to disciplinary action.

SPECIAL CLAUSES

19. **PRE SHIPMENT INSPECTION (PSI).** On the basis of KSY requirement, comprehensive inspection of the stores regarding quality, specifications, quantity and supervision of the ship/loading port will be carried out prior to shipment by our nominated inspection company or their accredited agent who will issue an inspection certificate in token of their having carried out the inspection. Suppliers/manufacturers name and full address with the name and address of the supplier, if any should be intimated to the inspection agent. Supplier will be liable to pay the expenses for rejected stores and also for such inspection, which will become payable to the inspection due to multiple intervention/visits and/ or fruitless visits the call of and to suit the convenience of the supplier. The inspector should be provided with all facilities to carry out their job smoothly and without interface. The provisions laid down above do not restrain the buyer from a detailed inspection of quality and quantity of the cargo on arrival of the same at the port of discharge. Charge to be borne by the buyer.

20. **LATE SHIPMENT/DELIVERY AND LIQUIDATED DAMAGES:** Late shipment/ delivery will not be accepted. However with reasonable cause, if KSY agrees for late Shipment/ Delivery, in that case followings will be imposed:

- a. On genuine reasons / grounds beyond the control of the suppliers / contractor, extension of delivery period may, however, be granted by the Purchase Approving Authority (KSY) without realization of any liquidated damage provided validity of their performance guarantee covers such extension.

- b. Liquidity damage equivalent to half percent per week or part thereof on the value of the undelivered goods will be realized from the supplier/contractor.
- c. In specific cases, where delay in shipment is likely to cause dislocation of work or financial loss, or related to the delivery of ships/ handed over of construction work, a higher rate of liquidity damage from 5% to 10% (as decided by KSY) per week or part thereof on the value of the undelivered goods will be charged.
- d. In case of delay in shipment beyond approved timeframe as stated in Clause no. 9, this schedule will be treated as cancelled and the full Performance Guarantee shall also be forfeited as a consequential effect.
- e. In the event of any delay in dispatch of the shipping documents or their incorrect preparation, the supplier shall be responsible for any demurrage, extra handling charges or any other expense arising there from.
- f. Minimum 14 days free time for container shipment at destination port must allow for each shipment.

21. **TERMINATION OF CONTRACT:**

- a. At any time during the period of this contract, the Purchaser shall have the right to cancel contract under following reasons:
 - (1) If the supplier fails to supply the contracted item as per specification given in the purchase order/contract of the contracted item being rejected by the competent technical authority.
 - (2) If the supplier fails to deliver the contracted item within the date specified in the purchase order/contract or any extensions thereof.
 - (3) In the event of breach of any contractual obligations given in the terms and conditions of the purchase order/contract.
- b. Moreover, in case of termination of contract as under this clause the Purchaser shall have the right to decide taking appropriate punitive action against the supplier as deemed suitable by the KSY authority.
- c. Decisions under this clause SHALL not be subject to arbitration.

22. **INSURANCE.** Insurance of the consignment will be arranged by buyer after shipment to the destination up to Khulna Shipyard Ltd (up to buyers' premises) but all charge including VAT will be paid by foreign principal/local agent (supplier) at L/C opening. Quotation should, therefore, be included with the insurance charges.

23. **EARNEST MONEY.** All bidders must submit earnest money for an amount equivalent to 1% (one) of the actual quoted CFR value of the stores either by Bangladesh currency or equivalent to any International Trading currencies favouring the Khulna Shipyard Ltd., in bank draft/pay order / bank guarantee /which will be issued by any scheduled bank of Bangladesh. In case bank guarantee is submitted, the same should remain valid for 90 days from the date of opening of the tender. Neither any inland cheque for a cheque /guarantee issue by Bank of foreign countries will be entertained. Earnest money is liable to forfeiture if the bidder for any reason whatsoever withdraws or modifies its offer; or violates the terms after opening of the tender and before expiry of the validity of the offer; or fails to furnish the required performance bond within the stipulated time after issuance of letter of intent. Bid bond/earnest money of unsuccessful tenderer would be returned once a decision of the tender is made. A tender not accompanied by earnest money/bid bond would be rejected as non-responsive. Bid bond of the successful bidder shall be returned after furnishing performance bond. A specimen copy of bid bond is enclosed herewith as annex-F

24. **PERFORMANCE BOND.** The successful tenderer will be required to furnish performance bond to the extent 10% of the total CFR value either in the form of pay order / bank draft or bank guarantee for the satisfactory execution of the order. The performance bond should be given by any Bangladesh Commercial Bank under their (Bank) full risk and liabilities. If the same is submitted by bank guarantee it must remain valid 12 (Twelve) months beyond the day of shipment. Performance bond must be furnished within 10 (Ten) day's from the date of letter of intent. It will be liable for forfeiture if the supplier fails to supply the goods within the specified time or commits any breach of contract. A specimen copy of performance bond is enclosed herewith as Annex-G

25. **INDEMNITY.** The supplier have to indemnify the buyer against all claims which may be made in respect of the stores for infringement of any right protected by patent, registration of design etc. and shall take all risk of accidents or damage which may cause or failure of the supply from whatever cause arising and take entire responsibility for the sufficiency of the means used by the supplier for the fulfillment of the contract

26. **INCREASE OR DECREASE IN QUANTITY OF CONTRACT:**

The buyer reserves the right at the time of award of contract, with no adjustment in unit price (bid), to increase or decrease the quantity tendered. The buyer also reserves the right to accept or reject any or all the tenders or to waive any informality, minor deviation or omission.

Award would be made to the bidder whose responsive bid determined to be the lowest evaluated bid and who meets the specification and other terms and conditions of the tender document.

27. Should the suppliers be adjudged insolvent, the buyer shall have the power to terminate the contract

28. **DISQUALIFICATION OF OFFER:**

a. Any addition or alternator to the specification or rate quoted by a firm in the tender after not only be ignored but should also render the firms liable to disqualification.

b. Any tender received late and not strictly confirming to the terms and conditions prescribed in this tender documents not accompanied with the requisite earnest money and the money receipt of tender price and registration certificate may be liable for rejection.

29. **TAXES AND OTHER CHARGES:**

a) All Customs duties, taxes and other charges levied on the goods by authorities in buyer's country shall be borne by the buyer and shall not be included in the bid price.

b) Charges of such nature in seller's country or in any country other than the buyer's country shall be borne by the sellers.

c) In the event of any delay in dispatch of the shipping documents or their incorrect preparation, the supplier shall be responsible for any demurrage, extra handling charges or any other expense arising there from.

30. **BREACH OF CONTRACT.** On any breach of contract by the seller, the buyer may recover the actual loss suffered and the amount may be realized by encasing the performance guarantee.

31. **APPLICABLE LAW.** The purchase order shall be interpreted in accordance with the law of the buyer's country.

32. **FORCE MAJEURE.** Should any circumstance arise preventing either contracting party from wholly or partly carrying its obligations under the present contract, namely Natural Calamity, Strike, Riots, firm acts and elements of War, Military Operation of any, Nature, Block ads and any unforeseen event which is beyond human control the period stipulated for the performance of this contract shall be extended or as long as the circumstances prevail. Provided that in the event of these circumstances continuing for more than thirty days, either party shall have to refuse to fulfill its obligations under this contract and in such case neither party shall be entitled to indemnification of any losses it may sustain.

The party unable to carry out its obligation under this contract shall immediately advise the other party of the commencement and the termination of circumstances preventing the performance of the contract. A certificate issued by the Chamber of Commerce of the sellers of the buyers' country shall be sufficient proof of the existence and duration of such circumstances.

33. **ARBITRATION.** In the event of any dispute or difference arising out of the terms and conditions as specified above, the same shall be referred to the award of a sole. Arbitrator appointed by the parties on mutual agreement, failing which it shall be referred to the award of the two Arbitrators, from each side (buyer and seller), or in the case of disagreement between the two arbitrators to the award of an umpire to be appointed by the two arbitrator in writing before proceeded on the reference of the decision of the sole arbitrator or of the two arbitrator in the writing before proceeded on the reference of the decision of the sole arbitrator or of the two Arbitrators or the umpire as the case may be shall be final, conclusive and binding upon the parties. The provisions of the arbitration Act 2001 and rules there under and any statutory modification there of shall deem to apply to the said arbitration. The place of arbitration shall be Dhaka, Bangladesh any statutory modification enactment thereof for the time being in force in Bangladesh shall apply to the arbitration proceeding.

The above terms and conditions are not absolute, the Khulna Shipyard Ltd., Bangladesh Navy, reserves the right to incorporate additional terms and conditions, if necessary. The Khulna Shipyard Ltd., BN also is not bound to accept the lowest tender and reserves the right to reject any or all tenders without assigning any reason whatsoever.

SK. SHAH MOSHIUR RAHMAN
Manager Admin
For Managing Director

Enclosure:

- | | | |
|----|---|------------|
| A. | Format of Price Schedule (Annex - A) | - 01 Page |
| B. | Technical Specification (Annex - B, C, D & E) | - 25 Pages |
| C. | Format of Bank Guarantee in Lieu of Earnest Money (Annex - F) | - 01 Page |
| D. | Format of Performance Bank Guarantee (Annex - G) | - 01 Page. |



KHULNA SHIPYARD LTD.
BANGLADESH NAVY, KHULNA

PHONE NO: PABX 02-477720003, FAX. NO: 880-41-720404
E-mail: contact@khulnashipyard.com , oiccomf.ksy@gmail.com

ANNEX-A

SCHEDULE TO TENDER ENQUIRY NO: BABE (F)-632/ETRU/2023-2024 DATED:30 MAY 2024
TENDER OPENING DATE: 13 JUNE 2024 AT 1130 AM HOURS

The Complete Raw Materials/Items of Piping System:

DESCRIPTION OF GOODS (As per Annex- B to E)		Quantity	FOB Price Per Unit	Freight Per Unit	Item wise Total CFR Price
1.	Elbow (Annex-B)	Itemise			
2.	Tee (Annex-C)	Itemise			
3.	Reducing Tee (Annex-D)	Itemise			
4.	'U' Clamp (Annex-E)	Itemise			
Total Price=					

N.B. Supplier must follow commercial & Financial Terms that are integrated at schedule.

Yours quotation No.

Signature, Name and address of the tenderer:

Date:

Terms of delivery:

Telephone No:

TECHNICAL SPECIFICATION OF Cu-Ni, CARBON STEEL AND STAINLESS STEEL ELBOW

1. Name of Equipment : Various Type Of Elbow
2. Purpose : Elbows are essential component, act as a connector of both or more connection and also change the direction of fittings of the piping system for control the flow of fluids and gases.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Elbow.
7. Type : Marine Grade
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The elbow should have the following technical requirements:
 - a. **Elbow for Copper Nickel:**

Ser	Elbow for Copper Nickel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 15 Type: LR Butt Weld Thickness: CLASS 200 Material: Cu-Ni-90-10 Standard: UNS C70600 NAVSEA 810-13858889, Class 200 or BELLED END, Cu-Ni Class 200 MIL-T-164 20, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	126 Pcs	378 Pcs
2.	Size: DN 20 Type: LR Butt Weld Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200 OR BELLED END. Cu-Ni, CLASS-200, MIL-T-16420 MSS SP 119 Class: III Drawing No: 534-531-01 ((FW Generation & Domestic FW System Diagram) Drawing No: 534-514-05 (Rev-1) (Chiiled Water Diagram for Air-Condition)	Manufacturer Certificate	127 Pcs	381 Pcs
3.	Size: DN 25 Type: LR Buttweld Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-531-01 ((FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	32 Pcs	96 Pcs

	Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
4.	Size: DN 32 Type: LR Butt Weld Thickness: CLASS 200 Material: Cu-Ni-90-10 Standard: UNS C70600 NAVSEA 810-13858889, Class 200 or BELLED END, Cu-Ni Class 200 MIL-T-164 20, MSS SP 119 Class: III Drawing No: 534-531-01 (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	35 Pcs	105 Pcs
5.	Size: DN 40 Type: LR Butt Weld Material: Cu-Ni 90-10 Standard: UNS C70600, ,NAVSEA 810-1385880, CLASS 200, OR BELLED END,Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No:534-522-01 (Magazine Spraying Arrangement) Drawing No:534-531-01 (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	32 Pcs	96 Pcs
6.	Size: DN 50 Type: LR Butt Weld Thickness: Class 200 Material: Cu-Ni 90-10 Standard: UNS C70600 NAVSEA 810-1385880, CLASS 200, OR BELLED END,Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No:534-522-01 (Magazine Spraying Arrangement) Drawing No:534-514-05 (Chilled Water Diagram for Air-Condition) Drawing No: 534-531-01 ((FW Generation & Domestic FW System Diagram) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	77 Pcs	231 Pcs
7.	Size: DN 65 Type: LR Butt Weld Thickness: CLASS 200 Material: Cu-Ni 90-10 Standard: UNS C70600 NAVSEA 810-1385880, CLASS 200, OR BELLED END,Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain and Washdown System) Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-529-01 (Bilge System) Drawing No: 534-531-01 ((FW Generation & Domestic FW System Diagram) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	402 Pcs	1206 Pcs
8.	Size: DN 80 Type: LR Butt Weld Thickness: CLASS 200 Material: Cu-Ni 90-10 Standard: UNS C70600 NAVSEA 810-1385880, CLASS 200, OR BELLED END,Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain and Washdown System) Drawing No: 534-522-01 (Magazine Spraying Arrangement)	Manufacturer Certificate	114 Pcs	342 Pcs

	Drawing No: 534-529-01 (Bilge System) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
9.	Size: DN 100 Type: LR Butt Weld Thickness: CLASS 200 Material: Cu-Ni 90-10 Standard: UNS C70600 NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain and Washdown System) Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-506-01 (Vents & Sounding System Diagram) Drawing No: 534-529-01 (Bilge System) Drawing No: 534-529-02 (Ballast System)	Manufacturer Certificate	136 Pcs	408 Pcs
10.	Size: DN 125 Type: LR Butt Weld Thickness: CLASS 200 Material: Cu-Ni 90-10 Standard: UNS C70600 NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain and Washdown System) Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	32 Pcs	96 Pcs
11.	Size: DN 40 Type: LR (3R/5R) Material: Copper Alloy Standard: C26000 Drawing No: 534-435-01 (Voice pipe)	-	60 Pcs	180 Pcs

b. Elbow for Galvanized Carbon Steel

Ser	Galvanized Carbon Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 08 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	20 Pcs	60 Pcs
2.	Size: DN15 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	40 Pcs	120 Pcs
3.	Size: DN 25 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	40 Pcs	120 Pcs
4.	Size: DN 32 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11	Manufacturer Certificate	60 Pcs	180 Pcs

	Class: III Drawing No: 534-593-01 (Oily Water System)			
5.	Size: DN 40 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	15 Pcs	45 Pcs
6.	Size: DN 50 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	06 Pcs	18 Pcs
7.	Size: DN 65 Type: Butt Weld Materials: Galvanized, Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	06 Pcs	18 Pcs

c. **Elbow for Carbon Steel**

Ser	Carbon Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 15 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	200 Pcs	600 Pcs
2.	Size: DN 20 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	200 Pcs	600 Pcs
3.	Size: DN 25 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System) Remarks: High Pressure (WP-44 bar, TP:66 bar) class 150 is not sufficient for high pressure line - 30 pcs only.	LR (Material) Certificate	100 Pcs	300 Pcs
4.	Size: DN 32 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	90 Pcs	270 Pcs

5.	Size: DN 40 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-551-01 (Compressed & Control Air System) Remarks: High Pressure (WP:44 bar, TP:66 bar) class 150 is not sufficient for high pressure line - 24 pcs only.	Manufacturer Certificate	64 Pcs	192 Pcs
6.	Size: DN 50 Type: Socket Weld Material: Carbon Steel Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System) Remarks: High Pressure (WP:44 bar, TP:66 bar) class 150 is not sufficient for high pressure line - 150 pcs only.	Manufacturer Certificate	160 Pcs	480 Pcs
7.	Size: DN: 20 Type: Butt Weld, LR Thickness: SCH40 Material: Carbon Steel Standard: ASTM A234, ASME B16.9 Class: III Drawing No: 534-261-01 (Fuel Oil Service System)	Manufacturer Certificate	65 Pcs	195 Pcs
8.	Size: DN 25 Type: Butt Weld, LR, Thickness: SCH40 Material: Carbon Steel Standard: ASTM A234, ASME B16.9 Class: III Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	96 Pcs	288 Pcs
9.	Size: DN 40 Thickness: SCH 40 Type: Butt Weld, LR Material: Carbon Steel Standard: ASTM, A 234, ASME B16.9 Class: III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram) Drawing No: 534-543-01 (Lub-oil system)	Manufacturer Certificate	125 Pcs	375 Pcs
10.	Size: DN 50 Thickness: SCH40 Type: Butt Weld, LR Material: Carbon Steel Standard: ASTM A234, ASME B16.9 Class: III Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram) Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-543-01 (Lub-oil system)	Manufacturer Certificate	190 Pcs	570 Pcs
11.	Size: DN 65 Type: Butt Weld Material: Carbon Steel	Manufacturer Certificate	153 Pcs	459 Pcs

	Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-506-01 (Vents & Sounding System Diagram)			
12.	Size: DN 65 Type: LR Butt Weld Thickness: SCH 40 Material: Carbon Steel Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-506-02 (Fuel Oil Overflow) Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram) Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	91 Pcs	273 Pcs
13.	Size: DN 80 Type: Butt Weld Material: Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-506-01 (Vents & Sounding System Diagram)	Manufacturer Certificate	37 Pcs	111 Pcs
14.	Size: DN 100 Type: LR Butt Weld Thickness: SCH 40 Material: Carbon Steel Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-506-02 (Fuel Oil Overflow)	Manufacturer Certificate	45 Pcs	135 Pcs
15.	Size: DN 125 Type: Butt Weld Material: Carbon Steel Standard: ASTM A105 3000#, ASME B16.11 Class: III Drawing No: 534-506-01 (Vents & Sounding System Diagram)	Manufacturer Certificate	21 Pcs	63 Pcs

d. **Elbow for Carbon Steel (Hot Dip Galvanized)**

Ser	Carbon Steel (Hot Dip Galvanized) Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 32 Type: Butt Weld, LR Thickness: SCH 40 Material: Carbon Steel. (Hot Dip Galvanized) Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	100 Pcs	300 Pcs
2.	Size: DN 40 Type: Butt Weld, LR Thickness: SCH 40 Material: Carbon Steel. (Hot Dip Galvanized) Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	120 Pcs	360 Pcs
3.	Size: DN 65 Type: Butt Weld, LR Thickness: SCH 40	Manufacturer Certificate	18 Pcs	54 Pcs

	Material: Carbon Steel. (Hot Dip Galvanized) Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)			
4.	Size: DN 80 Type: Butt Weld, LR Thickness: SCH 40 Material: Carbon Steel. (Hot Dip Galvanized) Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	132 Pcs	396 Pcs
5.	Size: DN 100 Thickness: SCH 40 Type: Butt Weld, LR Material: Carbon Steel. (Hot Dip Galvanized) Standard: ASTM A 234, ASME B16.9 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	12 Pcs	36 Pcs

e. **Elbow for Stainless Steel**

Ser	Elbow for Stainless Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 15 Type: Inner Threaded, Material: Stainless Steel Grade: 304L Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	340 Pcs	1020 Pcs
2.	Size: DN 50 Type: LR Butt Weld Thickness: SCH. STD Material: Stainless Steel Standard: ASTM A234 type 316L, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	32 Pcs	96 Pcs
3.	Size: DN 65 Type: LR Butt Weld Thickness: SCH 40 Material: Stainers Steel Standard: ASTM A403 Type 304L, ASME B16.9 Class: III Drawing No: 534-506-01 (Vents & Sounding System Diagram)	Manufacturer Certificate	24 Pcs	72 Pcs
4.	Size: DN 100 Type: LR Butt Weld Thickness: SCH. STD Material: Stainless Steel Standard: ASTM A234 type 316L, ASME B16.9	Manufacturer Certificate	02 Pcs	06 Pcs

	Class: III Drawing No: 534-259-01 (Exhaust Gas System)			
5.	Size: DN 150 Type: LR Butt Weld Thickness: SCH. STD Material: Stainless Steel Standard: ASTM A234 type 316L, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	03 Pcs	09 Pcs
6.	Size: DN 200 Type: LR Butt Weld Thickness: SCH. 10S Material: Stainless Steel Standard: ASTM A234 type 316L, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	08 Pcs	24 Pcs
7.	Size: DN 250 Type: LR Butt Weld Thickness: SCH. 10S Material: Stainless Steel Standard: ASTM A234 type 321, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	02 Pcs	06 Pcs
8.	Size: DN 500 Type: LR Butt Weld Thickness: SCH. 10S Material: Stainless Steel Standard: ASTM A234 type 321, ASME B16.9 Class: III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	08 Pcs	24 Pcs

11. Standard necessary accessories : N/A
12. Documents : N/A
13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
- (b) Required manufacturer certificate or statement declaration confirming elbow has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
14. Installation Supervision : N/A.
15. Test-Trial and commissioning : N/A.
16. Training : N/A.

TECHNICAL SPECIFICATION OF TEE & EQUAL TEE ADAPTOR

1. Name of Equipment : Tee & Equal Tee Adaptor
2. Purpose : Tee is a fundamental building block in plumbing systems and diverting the flow of liquids/ gases in several ways in the pipe line system.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Tee.
7. Type : Marine Uses
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The Tee should have the following technical requirements.
 - a. **Tee for Copper Nickel:**

Ser	Tee for Copper Nickel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 15 Material: Cu-Ni 90-10, Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL- T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	40 Pcs	120 Pcs
2.	Size: DN: 20 Material: Cu-Ni 90-10, Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL- T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	30 Pcs	90 Pcs
3.	Size: DN: 25 Material: Cu-Ni 90-10, Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL- T-16420, MSS SP 119 Class: III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	02 Pcs	06 Pcs
4.	Size: DN: 32 Material: Cu-Ni 90-10,	Manufacturer Certificate	12 Pcs	36 Pcs

	Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)			
5.	Size: DN: 40 Material: Cu-Ni 90-10, Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	10 Pcs	30 Pcs
6.	Size: DN: 50 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	10 Pcs	30 Pcs
7.	Size: DN: 65 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	20 Pcs	60 Pcs
8.	Size: DN: 80 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	07 Pcs	21 Pcs
9.	Size: DN:125X125X100 Material: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class: III Drawing No: 534-521-01 (Firemain and Washdown System)	Manufacturer Certificate	05 Pcs	15 Pcs

b. Tee for Carbon Steel:

Ser	Tee for Carbon Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 20 Type: BUTT WELD Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-261-01 (Fuel Oil Service System)	Manufacturer Certificate	28 Pcs	84 Pcs
2.	Size: DN: 25 Type: BUTT WELD Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	27 Pcs	81 Pcs
3.	Size: DN: 40 Type: Butt weld Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-543-01 (Lub-oil system)	Manufacturer Certificate	06 Pcs	18 Pcs
4.	Size: DN: 50 Type: Butt weld Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-543-01 (Lub-oil system)	Manufacturer Certificate	03 Pcs	09 Pcs
5.	Size: DN: 65 Type: BUTTWELD Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	11 Pcs	33 Pcs
6.	Size: DN: 80 Type: BUTTWELD Thickness: SCH.40 Material: CARBON STEEL	Manufacturer Certificate	11 Pcs	33 Pcs

	Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-541-01 (FO Fill & Transfer System)			
7.	Size: DN: 100 Thickness: SCH.40 Material: CARBON STEEL Type: BUTTWELD Standard: ASTM A105 3000# ASME B16.11 Class: III Drawing No: 534-506-02 (Fuel Oil Overflow)	Manufacturer Certificate	03 Pcs	09 Pcs
8.	Size: DN: 25 Material: GALVANIZED, CARBON STEEL Type: BUTT WELD Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	09 Pcs	27 Pcs
9.	Size: DN: 32 Material: GALVANIZED, CARBON STEEL Type: BUTT WELD Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	11 Pcs	33 Pcs
10.	Size: DN: 40 Material: GALVANIZED, CARBON STEEL Type: BUTT WELD Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	03 Pcs	09 Pcs
11.	Size: DN: 100 Type: SOCKET WELD Material: CARBON STEEL (HOT DIP GALVANIZED) Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	4 Pcs	12 Pcs
12.	Size: DN 100 X 65 Type: SOCKET WELD Material: CARBON STEEL (HOT DIP GALVANIZED) Standard: ASTM A105, 3000# ASME B16.11 Class: III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	5 Pcs	15 Pcs

b. **Equal Tee & Straight adaptor for MS/ SS (As Pipe Material):**

Ser	Equal Tee & Straight adaptor for MS/ SS Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Name: Equal Tee adaptor Size : Out dia 22 mm Material: CARBON STEEL Class: I Dwg: Sch- A-W15349 (For Steering Gear System)	LR (material) Certificate	10 Pcs	30 Pcs
2.	Name: Straight adaptor Tee Size : Out dia 22 mm Material: CARBON STEEL Class: I Dwg: Sch- A-W15349 (For Steering Gear System)	LR (material) Certificate	30 Pcs	90 Pcs

11. Standard necessary accessories : N/A

12. Documents : N/A

13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10.

(b) Required manufacturer certificate or statement declaration confirming tee has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.

14. Installation Supervision : N/A.

15. Test-Trial and commissioning : N/A.

16. Training : N/A.

TECHNICAL SPECIFICATION OF REDUCING TEE

1. Name of Equipment : Reducing Tee
2. Purpose : Reducing Tees join the ranks of necessary piping components alongside their straight tee counterparts for their unique function.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Reducing Tee
7. Type : Marine Uses
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The Reducing Tee should have the following technical requirements:
 - a. **Reducing Tee for Carbon Steel:**

Ser	Reducing Tee for Carbon Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 20X15X20 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	40 Pcs	120 Pcs
2.	Size: DN: 25X20X25 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	04 Pcs	12 Pcs
3.	Size: DN: 32X25X32 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	06 Pcs	18 Pcs
4.	Size: DN: 32X32X32 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	06 Pcs	18 Pcs
5.	Size: DN: 40X15X40 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II	LR (Material) Certificate	28 Pcs	84 Pcs

	Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)			
6.	Size: DN: 40X40X40 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	04 Pcs	12 Pcs
7.	Size: DN: 50X32X50 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	04 Pcs	12 Pcs
8.	Size: DN: 50X50X50 Type: SOCKET WELD Material: CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	06 Pcs	18 Pcs
9.	Size: DN: 50X25X50 Type: BUTT WELD Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class:III Drawing No: 534-261-01 (Fuel Oil Service System)	Manufacturer Certificate	08 Pcs	24 Pcs
10.	Size: DN: 65X25X65 Type: BUTTWELD Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class:III Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	01 Pc	03 Pcs
11.	Size: DN: 80X25X80 Type: BUTTWELD Thickness: SCH.40 Material: CARBON STEEL Standard: ASTM A105 3000# ASME B16.11 Class:III Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	02 Pcs	06 Pcs

b. Reducing Tee for Galvanized Carbon Steel:

Ser	Reducing Tee for Carbon Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 15 X 25 Type: BUTT WELD Materials: GALVANIZED, CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III	Manufacturer Certificate	01 Pc	03 Pcs

	Drawing no: 534-593-01 (Oily Water System)			
2.	Size: DN: 32 X 15 Type: BUTT WELD Materials: GALVANIZED, CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	04 Pcs	12 Pcs
3.	Size: DN: 40X15 Type: BUTT WELD Materials: GALVANIZED, CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	05 Pcs	15 Pcs
4.	Size: DN: 50 X 15 Type: BUTT WELD Materials: GALVANIZED, CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	06 Pcs	18 Pcs
5.	Size: DN: 65 X 15 Type: BUTT WELD Materials: GALVANIZED, CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	06 Pcs	18 Pcs
6.	Size: DN: 65 X 50 Type: BUTT WELD Materials: GALVANIZED, CARBON STEEL Standard: ASTM A105, 3000# ASME B16.11 Class:III Drawing no: 534-593-01 (Oily Water System)	Manufacturer Certificate	04 Pcs	12 Pcs

c. Reducing Tee for Cupper Nickel:

Ser	Reducing Tee for Carbon Steel Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 65X20X65 Materials: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class:III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	04 Pcs	12 Pcs
2.	Size: DN: 65X50X65 Materials: Cu-Ni 90-10 Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class:III Drawing No: 534-514-05 (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	02 Pcs	06 Pcs
3.	Size: DN: 80X65X80 Materials: Cu-Ni 90-10	Manufacturer Certificate	02 Pcs	06 Pcs

	Standard: UNS C70600, NAVSEA 810-1385880, CLASS 200, OR BELLED END, Cu-Ni CLASS 200 MIL-T-16420, MSS SP 119 Class:III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
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11. Standard necessary accessories : N/A
12. Documents : N/A
13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
- (b) Required manufacturer certificate or statement declaration confirming Reducing Tee has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
14. Installation Supervision : N/A.
15. Test-Trial and commissioning : N/A.
16. Training : N/A.

TECHNICAL SPECIFICATION OF 'U' CLAMP WITH SPRING WASHER & NUT

1. Name of Equipment : 'Various Type of U' Clamp With Spring Washer & Nut
2. Purpose : 'U' Clamp Versatile Tools in the World of Plumbing, Construction, Providing Strength And Rigidity. Also it is Used for Two Ends Tighten and Securing Properly.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of U' Clamp.
7. Type : Marine uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The 'U' Clamp should have the following technical requirements:

a. **'U' Clamp With spring Washer & Nut:**

Ser	'U' Clamp With spring Washer & Nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 08 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	12 Pcs	36 Pcs
2.	Size: DN: 15 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-593-01 (Oily Water System) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	320 Pcs	960 Pcs
3.	Size: DN: 20 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	376 Pcs	1128 Pcs

4.	Size: DN: 25 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System) Drawing No: 534-593-01 (Oily Water System) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	272 Pcs	816 Pcs
5.	Size: DN 32 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-593-01 (Oily Water System) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	262 Pcs	786 Pcs
6.	Size: DN: 40 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-543-01 (Lub-oil system) Drawing No: 534-593-01 (Oily Water System) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	264 Pcs	792 Pcs
7.	Size: DN 50 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System) Drawing No: 534-543-01 (Lub-oil system) Drawing No: 534-593-01 (Oily Water System) Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	Manufacturer Certificate	293 Pcs	879 Pcs

8.	Size: DN: 65 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-506-01 (Vents & Sounding System Diagram) Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	64 Pcs	192 Pcs
9.	Size: DN: 80 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-506-01 (Vents & Sounding System Diagram) Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	56 Pcs	168 Pcs
10.	Size: DN: 100 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-506-02 (Fuel oil overflow) Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	74 Pcs	222 Pcs
11.	Size: DN: 125 Material: Galvanized Carbon Steel Standard: 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-506-01 (Vents & Sounding System Diagram)	Manufacturer Certificate	06 Pcs	18 Pcs

b. **'U' Clamp With spring Washer & Nut:**

Ser	'U' Clamp With spring Washer & Nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 50 Material: STAINLESS STEEL Standard: 'U' Clamp shall be 316 SST ASTM F593, ASME B18.2.1, Nuts shall be 316 SST ASTM F594, CONDITION CW, ASME B18.2.2. and Spring washer shall be stainless steel. Drawing No: 534-259-01 (Exhaust Gas System)		14 Pcs	42 Pcs

c. 'U' Pipe size clamp with spring washer & nut:

Ser	'U' Pipe size clamp with spring washer & nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 40 Material: GALVANIZED CARBON STEEL Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	50 Pcs	150 Pcs
2.	Size: DN: 50 Material: GALVANIZED CARBON STEEL Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	40 Pcs	120 Pcs
3.	Size: DN: 65 Material: GALVANIZED CARBON STEEL Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	16 Pcs	48 Pcs

d. PTFE Coated 'U' clamp with spring washer & Nut:

Ser	PTFE Coated 'U' clamp with spring washer & Nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 65 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	58 Pcs	174 Pcs
2.	Size: DN: 80 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	46 Pcs	138 Pcs
3.	Size: DN: 100 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-521-01 (Firemain And Washdown System)	Manufacturer Certificate	66 Pcs	198 Pcs
4.	Size: DN: 125 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be	Manufacturer Certificate	20 Pcs	60 Pcs

	Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-521-01 (Firemain And Washdown System)			
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e. **PTFE Coated 'U' clamp with washer & nut:**

Ser	PTFE Coated 'U' clamp with washer & nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 25 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement)	Manufacturer Certificate	05 Pcs	15 Pcs
2.	Size: DN: 40 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement)	Manufacturer Certificate	30 Pcs	90 Pcs

f. **PTFE Coated 'U' clamp with spring washer & nut:**

Ser	PTFE Coated 'U' clamp with spring washer & nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 15 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-253-01 (ME & AE SW cooling system- Rev-1)	Manufacturer Certificate	10 Pcs	30 Pcs
2.	Size: DN: 20 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	32 Pcs	96 Pcs
3.	Size: DN: 25 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel.	Manufacturer Certificate	08 Pcs	24 Pcs

	Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
4.	Size: DN: 40 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-435-01 (Voice pipe)	Manufacturer Certificate	60 Pcs	180 Pcs
5.	Size: DN 50 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition) Drawing No: 534-253-01 (Rev-1)	Manufacturer Certificate	104 Pcs	312 Pcs
6.	Size: DN: 65 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition) Drawing No: 534-253-01 (Rev-1) Drawing No: 534-529-01 (Bilge System)	Manufacturer Certificate	338Pcs	1014 Pcs
7.	Size: DN: 80 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition) Drawing No: 534-529-01 (Bilge System)	Manufacturer Certificate	69 Pcs	207 Pcs
8.	Size: DN: 100 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-529-02 (Ballast System) Drawing No: 534-529-01 (Bilge System)	Manufacturer Certificate	312 Pcs	936 Pcs

9.	Size: DN 125 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Spring Washer shall be carbon steel. Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-253-01 (ME& AE, Rev-1)	Manufacturer Certificate	33 Pcs	99 Pcs
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g. **PTFE Coated 'U' clamp with washer & nut:**

Ser	PTFE Coated 'U' clamp with washer & nut Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 40 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Washer shall be carbon steel. Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	25 Pcs	75 Pcs
2.	Size: DN: 50 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Washer shall be carbon steel. Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	25 Pcs	75 Pcs
3.	Size: DN: 65 Material: Galvanized Carbon Steel Standard: PTFE Coated 'U' Clamp shall be carbon steel, A307 GR A. ASME B18.2.1, Nuts Shall be Carbon Steel A563 GR A. ASME B18.2.2 and Washer shall be carbon steel. Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	10 Pcs	30 Pcs

h. **Single tube hydraulic clamp:**

Ser	Single tube hydraulic clamp Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
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1.	Size : out dia 22 mm Material: Polypropylene body with zinc plated Dwg: Sch- A-W 15349 (For Steering Gear System)	Manufacturer Certificate	35 Pcs	105 Pcs
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11. Standard accessories necessary : N/A

12. Documents : N/A

13. Certificate : Required manufacturer certificate or statement declaration confirming 'U' Clamp With Spring Washer & Nut has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.

14. Installation Supervision : N/A.

15. Test-Trial and commissioning : N/A.

16. Training : N/A.

BANK GUARANTEE IN LIEU OF EARNEST MONEY

No.....

.....

Guarantee

Dated:

For (mention amount).

Dear Sirs,

Whereas (Name of tender floating organisation) under tender No.
 dated inviting tenders for supplies of (described
 supplies) has agreed to waive the requirement of Cash deposit / Call deposit of US\$ / £ /
 Tk..... being 1% (One percent) of the value of supplies as earnest
 money by the tenderer for making the supplies in accordance with the terms and
 conditions of the tenderer and the tenderer shall provide a bank guarantee for payment for
 the said amount.

And whereas the tenderer M/S.ofhas requested us
 (name of bank) of to issue as guarantee for payment of the amount of
 US\$/£/Tk when called upon.

In consideration of the aforesaid, we (name of bank) of hereby
 undertake and guarantee due performance of the tender by the tenderer M/S.
 of and unconditionally and absolutely
 bind ourselves:

1. To make payment without any question whatsoever of US\$/£/Tk
 to.....(Name of organisation) or as directed by the
 organisation immediately on receipt of demand from the said, organisation in writing, in
 the event the tenderer fail to perform the tender. It is expressly understood that the
 organisation shall be the sole judge for-deciding whether the tenderer has performed the
 tender and fulfilled the terms and conditions of the tender.

2. It is specially stipulated and understood by the bank that any grant of time or
 indulgence to the tenderer without reference to the bank shall not in any manner tend to
 absolve the bank from its liability to make the payment stipulated above under this
 guarantee.

3. The Bank's commitment under this guarantee is limited to an amount of
 US\$/£/Taka(.....) only.

4. The guarantee will remain valid upto

Yours faithfully

..... Bank

(Seal of the Bank)

PERFORMANCE BANK GUARANTEE

Managing Director
 Khulna Shipyard Limited
 Bangladesh Navy
 Khulna, Bangladesh

Bank Guarantee No
 Dated:
 For (Mention amount)

Dear Sirs,

Whereas Khulna Shipyard Ltd., Bangladesh Navy, Khulna hereinafter referred to as the buyers proposed to enter into a contract through a Letter of Intent No dated hereinafter called the contract with (name of the sellers) of hereinafter referred to as the sellers for the supply of (described supplies) in accordance with the terms and conditions of the contract. And whereas the sellers have requested us (name of bank) to issue a guarantee for an amount of US\$ / £ / EURO / TK..... being 10% of the CFR value of the supplies.

In consideration aforesaid (name of bank) hereby undertake and guarantee due observance and performance of the terms and conditions of the contract by the sellers and we unconditionally and absolutely bind ourselves.

To make payment on demand, without demur and without reference to the sellers, of US\$ / £ / EURO / TK to the buyers or as directed by the buyers in writing, if the sellers shall fail to perform the contract or fulfill the terms and conditions thereof.

To keep guarantee valid and in force for 12 (Twelve) months from the start of warranty period but extendable if so required by the buyers.

The guarantee is unconditional and it is expressly understood that the buyers shall be sole judge for deciding whether the sellers have performed the contract and fulfilled the terms and conditions thereof.

It is specifically stipulated and understood by us (name of bank) that any grant of time or indulgence to the sellers without reference to us shall not in any manner tend to absolve us from our liability to make payment as stipulated above under this guarantee.

Our commitment under this guarantee is limited to an amount of US\$ / £ / EURO / TK..... only.

Yours faithfully

..... Bank

(Seal of the Bank)



KHULNA SHIPYARD LIMITED

BANGLADESH NAVY, KHULNA

PHONE NO: PABX 02-47772003, FAX. NO: 880-41-720404

E-mail: contact@khulnashipyard.com, Web: www.khulnashipyard.com

IMPORTANT POINT

1. **TENDER NO: BABE (F) - 632/VFPG/2023-2024 DATE: 30 MAY 2024.**
2. **DUE FOR OPENING ON: 13 JUNE 2024.**
3. **PRICE OF TENDER DOCUMENTS: Tk. 2,000.00** per set (Non-refundable).
4. EARNEST MONEY: **1%** (one) of the total quoted CFR value either in Bangladesh currency or equivalent US\$ / EURO / GBP etc favoring Khulna Shipyard Ltd.(KSY). Khulna, in the form of Bank Draft / Pay Order / Bank Guarantee.
5. **NAME OF THE COMMODITY:** Various Item of Valve, Flange, Pipe & Gaskets as per (Annex-A).
6. **SOURCE OF FINANCE:** **Cash.**
7. **TERMS OF SUPPLY:** CFR Mongla/Chattogram Sea Port.
8. **PRICE:**
 - i) FOB and Ocean freight should be shown separately.
 - ii) Freight should be shown/endorsed on Bill of Lading.
 - iii) Freight will be paid at actual against Bill of Lading but not exceeding the amount shown in quotation/offer.
9. **DELIVERY/SHIPMENT:** 02 Months from the date of L/C.
10. **TENDER SHOULD REMAIN VALID:** 60 Days from the date of Tender opening date.
11. **THE TENDER DOCUMENTS MUST BE REQUIRED WITH SEAL AND SIGN THEREOF ON EACH PAGE:**

The Khulna Shipyard Ltd., Khulna invites quotation in duplicate (marked as "Original" and "Duplicate") from Manufacturers / Principal Suppliers for supply of the item(s) described in the attached sheet schedule (Annex-A) on firm CFR Mongla / Chattogram. Quotations will be received by this office up to **11-15 A.M.** and will be opened **11-30 A.M.** in public on the date specified above.
12. **AMENDMENTS TO TENDER DOCUMENTS:**
 - a. At any time prior to deadline for submission of bids the purchaser may, for any reason, whether of its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by the amendment(s).
 - b. The amendment(s) will be notified in writing by letter / email / KSY website or by cable to all prospective bidders who have purchased tender documents and the same will be binding on them.
 - c. In order to allow the prospective bidders reasonable time to take the amendment into account in preparing their bids, the purchaser may at its sole discretion extend the deadline for submission of bids.

PREPARATION AND SUBMISSION OF QUOTATION

13. **GENERAL:**
 - a. Offers are to be dropped in the tender box provided for the purpose at the office of Khulna Shipyard Ltd., Khulna.

b. Tender number and opening date as above should be written on the envelope. The envelope containing quotation should be sealed and addressed as follows:-

- i. CONSIGNEE : **COMMANDING OFFICER
NAVAL STORES DEPOT,
NEW MOORING, CHATTOGRAM, BANGLADESH.
OR
COMMANDING OFFICER
NAVAL STORES DEPOT,
KALISPUR, KHULNA, BANGLADESH**
- ii. NOTIFYING PARTY : **THE MANAGING DIRECTOR
KHULNA SHIPYARD LIMITED
BANGLADESH NAVY
KHULNA – 9201, BANGLADESH**

Tender number and opening date as above should be written on the envelope.

c. Tender may be put into the Tender Box kept for this purpose at the above address, but care must be taken to ensure that it reaches this office on the date and time fixed. Late tenders will not be considered. Suppliers may also post the tenders to the **MANAGING DIRECTOR, KHULNA SHIPYARD LIMITED, BANGLADESH NAVY, KHULNA-9201, BANGLADESH**, so, as to reach him on due date and time. No responsibility will be accepted by buyer for late receipt.

d. The Manufacturers / Principal Suppliers may quote in their own letter head, but it is essential that the tender schedule is also completed and returned, alongwith original money receipt to the buyer. If the schedule is not accordingly returned the quotation may not be considered.

e. Tenderers may quote price Bangladesh Taka/US Dollar / in any International trading currency.

f. Tenderers should be confirmed their credit report issued from tenderers banks and this credit report should be enclosed in the original offer / quotation otherwise L/C opening bank should be arranged to collect this credit report and necessary cost in this respect will be realized from the supplier's bill/ L/C value.

g. Tenders should enclose with the quotation the Original Proforma Invoice of their Principal and the Proforma should be based on FIRM C & F PRICE.

h. Quotation should be strictly in accordance with the following:

- (1) Accounting unit prescribed in the tender enquiry.
- (2) Terms of delivery and place of delivery as specified in the tender enquiry.

i. The name of the manufacturers, principal suppliers and country/countries of origin with port of shipment proposed should invariably be indicated.

j. Tenderers must submit with the quotation the Original Proforma Invoice of their Principals and the Proforma Invoice shall clearly indicate detail technical specification, the percentage of commission, if any, included in FOB price for the local agent. Commission payable to the local agent by the foreign supplier will be deducted and paid to local agent in equivalent Local currency at the exchange rate at which the bill of exchange is negotiated. **Buyers will not pay any extra commission or otherwise to the Local Agent.**

k. No claims on the ground of typographical errors in calculating prices would be entertained later and the tendering firms would be asked under points of penalty and disciplinary action to supply at price they have originally quoted.

l. Local Agent/ supplier should also submit along with the tender valid Indenting agent registration certificate issued by the Bangladesh Indenting Agent

Association (BIAA), Trade license, and TIN certificate. In absence of original certificate attested Photostat copy by first class officer may serve.

m. Tenderers should quote the price as per schedule given in Annex A to this document.

n. **Supplier must quote per goods for each line item (as per Annex B, C, D & E). KSY reserve the right to purchase partially or full quantity of the quoted goods.**

14. **CONTRACT.** The terms and conditions of the tender document shall form an integral part of the contract/purchase order document. The tenderer is requested to check this set of tender documents in order to ensure proper compliance and the "Form of Acknowledgement" along with the "Certificate as to **Corporate Principal**", where applicable, duly filled in be returned along with the **tender**.

15. **BID LANGUAGE.** The bid's, all correspondences and documents relating thereto exchanged between the bidders and the purchaser shall be written in English Language.

16. **TERMS OF PAYMENT:**

i. L/C for full purchase amount will be opened by Khulna Shipyard Limited in favour of the principal supplier under the following payment terms where the L/C commission including VAT & marine insurance will be borne by foreign principal/ local agent (supplier) at L/C opening.

a. 80% of total CFR value will be paid on delivery of the items described under the scope of supply and on production of following shipping documents:

(1) Complete set of original 'Clean on Board' Bill of Lading / mentioning the amount of freight on Bill of Lading.

(2) Supplier's invoice and packing list signed in ink,

(3) Buyer's authorized inspection agent's certificate,

(4) Fax/E-mail/Swift advice for insurance cover,

(5) Certificate of origin,

(6) Certificate showing that the material has been shipped in a non-Israel vessel,

(7) Undertaking regarding supply/ re-placement of short supplied and defective materials on free of cost demanded by the buyer.

b. Remaining 20% of L/C amount will be paid on producing "Acceptance certificate after satisfactory mustering jointly carried out by the buyer's and supplier's representative at Khulna Shipyard Ltd.

ii. Bank charges in Bangladesh for opening of L/C shall be borne by **the supplier**. Any Bank charges for revalidation or amendment of the L/C on the request of the supplier shall be exclusively borne by the beneficiaries and not by the Khulna Shipyard Ltd. Confirmation of letter of credit by foreign bank will not be entertained.

iii. Bank charges for withdrawal against L/C established by buyer will be borne by the beneficiary.

iv. The beneficiary will have to borne the following foreign bank charges: -

(1) Negotiation commission.

(2) Payment commission.

(3) Postage & Cable charges.

(4) L/C confirmation charges / additional (ADD) confirmation charges.

(5) L/C amendment commission/ L/C extension commission.

(6) L/C cancellation charges.

17. **PACKING AND MARKING:**

a. The seller shall be responsible for proper packing and marking the goods for shipment by rail, road and sea. Goods shall be assembled to the maximum

extent practical prior to shipment. Goods shall be packed so as to withstand usually rough handling and ensure delivery without loss or damage.

b. Each packet/ Bundle must have the following information printed in BOLD LETTERS on the outside

- (1) Name of the consignee and Destination,
- (2) Letter of credit number,
- (3) Gross and net weight,
- (4) Serial number of Bundle and,
- (5) Name and address of the seller,

18. **QUANTITY:**

a. Check of quality, quantity and condition of goods at the discharging port/ place i.e. Mongla / Chittagong will be carried out by the buyer at their cost.

b. The quotation must be based on firm prices for individual items. Average prices should not be quoted.

c. The approximate weight of each Packet/ Bundle should be shown separately on quotation.

d. The Khulna Shipyard Ltd., reserves the right of awarding contracts for individual technically acceptable items on the lowest acceptable prices. Firms quoting on an average basis for joint items do so at their own risk. The Khulna Shipyard Ltd., will not make any allowances for this action of the tendering firms when awarding contracts for individual items which if and when refused by tendering firms any lead to disciplinary action.

SPECIAL CLAUSES

19. **PRE SHIPMENT INSPECTION (PSI).** On the basis of KSY requirement, comprehensive inspection of the stores regarding quality, specifications, quantity and supervision of the ship/loading port will be carried out prior to shipment by our nominated inspection company or their accredited agent who will issue an inspection certificate in token of their having carried out the inspection. Suppliers/manufacturers name and full address with the name and address of the supplier, if any should be intimated to the inspection agent. Supplier will be liable to pay the expenses for rejected stores and also for such inspection, which will become payable to the inspection due to multiple intervention/visits and/ or fruitless visits the call of and to suit the convenience of the supplier. The inspector should be provided with all facilities to carry out their job smoothly and without interface. The provisions laid down above do not restrain the buyer from a detailed inspection of quality and quantity of the cargo on arrival of the same at the port of discharge. Charge to be borne by the buyer.

20. **LATE SHIPMENT/DELIVERY AND LIQUIDATED DAMAGES:** Late shipment/ delivery will not be accepted. However with reasonable cause, if KSY agrees for late Shipment/ Delivery, in that case followings will be imposed:

a. On genuine reasons / grounds beyond the control of the suppliers / contractor, extension of delivery period may, however, be granted by the Purchase Approving Authority (KSY) without realization of any liquidated damage provided validity of their performance guarantee covers such extension.

b. Liquidity damage equivalent to half percent per week or part thereof on the value of the undelivered goods will be realized from the supplier/contractor.

c. In specific cases, where delay in shipment is likely to cause dislocation of work or financial loss, or related to the delivery of ships/ handed over of construction work, a higher rate of liquidity damage from 5% to 10% (as decided

by KSY) per week or part thereof on the value of the undelivered goods will be charged.

d. In case of delay in shipment beyond approved timeframe as stated in Clause no. 9, this schedule will be treated as cancelled and the full Performance Guarantee shall also be forfeited as a consequential effect.

e. In the event of any delay in dispatch of the shipping documents or their incorrect preparation, the supplier shall be responsible for any demurrage, extra handling charges or any other expense arising there from.

f. Minimum 14 days free time for container shipment at destination port must allow for each shipment.

21. **TERMINATION OF CONTRACT:**

a. At any time during the period of this contract, the Purchaser shall have the right to cancel contract under following reasons:

(1) If the supplier fails to supply the contracted item as per specification given in the purchase order/contract of the contracted item being rejected by the competent technical authority.

(2) If the supplier fails to deliver the contracted item within the date specified in the purchase order/contract or any extensions thereof.

(3) In the event of breach of any contractual obligations given in the terms and conditions of the purchase order/contract.

b. Moreover, in case of termination of contract as under this clause the Purchaser shall have the right to decide taking appropriate punitive action against the supplier as deemed suitable by the KSY authority.

c. Decisions under this clause SHALL not be subject to arbitration.

22. **INSURANCE.** Insurance of the consignment will be arranged by buyer after shipment to the destination up to Khulna Shipyard Ltd (up to buyers' premises) but all charge including VAT will be paid by foreign principal/local agent (supplier) at L/C opening. Quotation should, therefore, be included with the insurance charges.

23. **EARNEST MONEY.** All bidders must submit earnest money for an amount equivalent to 1% (one) of the actual quoted CFR value of the stores either by Bangladesh currency or equivalent to any International Trading currencies favouring the Khulna Shipyard Ltd., in bank draft/pay order / bank guarantee /which will be issued by any scheduled bank of Bangladesh. In case bank guarantee is submitted, the same should remain valid for 90 days from the date of opening of the tender. Neither any inland cheque for a cheque /guarantee issue by Bank of foreign countries will be entertained. Earnest money is liable to forfeiture if the bidder for any reason whatsoever withdraws or modifies its offer; or violates the terms after opening of the tender and before expiry of the validity of the offer; or fails to furnish the required performance bond within the stipulated time after issuance of letter of intent. Bid bond/earnest money of unsuccessful tenderer would be returned once a decision of the tender is made. A tender not accompanied by earnest money/bid bond would be rejected as non-responsive. Bid bond of the successful bidder shall be returned after furnishing performance bond. A specimen copy of bid bond is enclosed herewith as annex-F

24. **PERFORMANCE BOND.** The successful tenderer will be required to furnish performance bond to the extent 10% of the total CFR value either in the form of pay order / bank draft or bank guarantee for the satisfactory execution of the order. The performance bond should be given by any Bangladesh Commercial Bank under their (Bank) full risk and liabilities. If the same is submitted by bank guarantee it must remain valid 12 (Twelve) months beyond the day of shipment. Performance bond must be

furnished within 10 (Ten) day's from the date of letter of intent. It will be liable for forfeiture if the supplier fails to supply the goods within the specified time or commits any breach of contract. A specimen copy of performance bond is enclosed herewith as Annex-G

25. **INDEMNITY.** The supplier have to indemnify the buyer against all claims which may be made in respect of the stores for infringement of any right protected by patent, registration of design etc and shall take all risk of accidents or damage which may cause or failure of the supply from whatever cause arising and take entire responsibility for the sufficiency of the means used by the supplier for the fulfillment of the contract.

26. **INCREASE OR DECREASE IN QUANTITY OF CONTRACT:**

The buyer reserves the right at the time of award of contract, with no adjustment in unit price (bid), to increase or decrease the quantity tendered. The buyer also reserves the right to accept or reject any or all the tenders or to waive any informality, minor deviation or omission.

Award would be made to the bidder whose responsive bid determined to be the lowest evaluated bid and who meets the specification and other terms and conditions of the tender document.

27. Should the suppliers be adjudged insolvent, the buyer shall have the power to terminate the contract.

28. **DISQUALIFICATION OF OFFER:**

a. Any addition or alternator to the specification or rate quoted by a firm in the tender after not only be ignored but should also render the firms liable to disqualification.

b. Any tender received late and not strictly confirming to the terms and conditions prescribed in this tender documents not accompanied with the requisite earnest money and the money receipt of tender price and registration certificate may be liable for rejection.

29. **TAXES AND OTHER CHARGES:**

a) All Customs duties, taxes and other charges levied on the goods by authorities in buyer's country shall be borne by the buyer and shall not be included in the bid price.

b) Charges of such nature in seller's country or in any country other than the buyer's country shall be borne by the sellers.

c) In the event of any delay in dispatch of the shipping documents or their incorrect preparation, the supplier shall be responsible for any demurrage, extra handling charges or any other expense arising there from.

30. **BREACH OF CONTRACT.** On any breach of contract by the seller, the buyer may recover the actual loss suffered and the amount may be realized by encashing the performance guarantee.

31. **APPLICABLE LAW.** The purchase order shall be interpreted in accordance with the law of the buyer's country.

32. **FORCE MAJEURE.** Should any circumstance arise preventing either contracting party from wholly or partly carrying its obligations under the present contract, namely Natural Calamity, Strike, Riots, firm acts and elements of War, Military Operation of any, Nature, Block ads and any unforeseen event which is beyond human control the period stipulated for the performance of this contract shall be extended or as long as the

circumstances prevail. Provided that in the event of these circumstances continuing for more than thirty days, either party shall have to refuse to fulfill its obligations under this contract and in such case neither party shall be entitled to indemnification of any losses it may sustain.

The party unable to carry out its obligation under this contract shall immediately advise the other party of the commencement and the termination of circumstances preventing the performance of the contract. A certificate issued by the Chamber of Commerce of the sellers of the buyers' country shall be sufficient proof of the existence and duration of such circumstances.

33. **ARBITRATION.** In the event of any dispute or difference arising out of the terms and conditions as specified above, the same shall be referred to the award of a sole Arbitrator appointed by the parties on mutual agreement, failing which it shall be referred to the award of the two Arbitrators, from each side (buyer and seller), or in the case of disagreement between the two arbitrators to the award of an umpire to be appointed by the two arbitrator in writing before proceeded on the reference of the decision of the sole arbitrator or of the two arbitrator in the writing before proceeded on the reference of the decision of the sole arbitrator or of the two Arbitrators or the umpire as the case may be shall be final, conclusive and binding upon the parties. The provisions of the arbitration Act 2001 and rules there under and any statutory modification there of shall deem to apply to the said arbitration. The place of arbitration shall be Dhaka, Bangladesh any statutory modification enactment thereof for the time being in force in Bangladesh shall apply to the arbitration proceeding.

The above terms and conditions are not absolute, the Khulna Shipyard Ltd., Bangladesh Navy, reserves the right to incorporate additional terms and conditions, if necessary. The Khulna Shipyard Ltd., BN also is not bound to accept the lowest tender and reserves the right to reject any or all tenders without assigning any reason whatsoever.

SK. SHAH MOSHIUR RAHMAN
Manager Admin
For Managing Director

Enclosure:

- | | | |
|----|---|------------|
| A. | Format of Price Schedule (Annex - A) | - 01 Page |
| B. | Technical Specification (Annex - B, C, D & E) | - 47 Pages |
| C. | Format of Bank Guarantee in Lieu of Earnest Money (Annex-F) | - 01 Page |
| D. | Format of Performance Bank Guarantee (Annex-G) | - 01 Page. |



KHULNA SHIPYARD LTD.
BANGLADESH NAVY, KHULNA

PHONE NO: PABX 02-477720003, FAX. NO: 880-41-720404
E-mail: contact@khulnashipyard.com , oiccomf.ksy@gmail.com

ANNEX-A

SCHEDULE TO TENDER ENQUIRY NO: BABE (F)-632/VFPG/2023-2024 DATED: 30 MAY 2024
TENDER OPENING DATE: 13 JUNE 2024 AT 1130 AM HOURS

The Complete Raw Materials/Items of Piping System:

DESCRIPTION OF GOODS (As per Annex- B to E)		Quantity	FOB Price Per Unit	Freight Per Unit	Item wise Total CFR Price
1.	Valve (Annex-B)	Itemise			
2.	Flange (Annex-C)	Itemise			
3.	Pipe (Annex-D)	Itemise			
4.	Gaskets (Annex-E)	Itemise			
Total Price=					

N.B. Supplier must follow commercial & Financial Terms that are integrated at schedule.

Yours quotation No.

Signature, Name and address of the tenderer:

Date:

Terms of delivery:

Telephone No:

TECHNICAL SPECIFICATION OF VALVE - 3 X LCT PROJECT

1. Name of Equipment : Various types of Valve
2. Purpose : It will be used in various system of a ship.
3. Quantity : As per serial 10
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned.
7. Type : Marine Grade.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The valve should have the following technical requirements.

Ser	Valve Specification	Required Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Name: Ball Valve Size: DN 15 Standard: Socket Weld or Threaded, Bronze ASTM B61/62 or ASTM B584 C84400, Cu-Ni ENDCAPS for Socket Weld, Full Port for in-Line Service Trim: Bronze Drawing No: 534-521-01 (Fireman and wash down system- Rev-0) Drawing No: 534-522-01(Magazine spraying system Arrangement- Rev- 0) Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1) Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0) Drawing No: 534-253-01 (ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	147 Pcs	441 Pcs
2.	Name: Ball Valve Size: DN 15 Standard: Socket Weld or Threaded, Steel ASTM A105, A216, ASME B16.34 or MSS SP-110, Class 300 Min., Full Port For in-Line Service. Trim: Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	17 Pcs	51 Pcs
3.	Name: Ball Valve Size: DN 15 Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34 or MSS SP-110, Class 150 Min., Full Port For In-Line Service.	Manufacturer test Cert.	06 Pcs	18 Pcs

	Trim: Stainless Steel Drawing No: 534-551-01(Compressed & control air system- Rev-1)			
4.	Name: Globe Valve Size: DN 15 Standard: Flanged or Threaded Bronze ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-253-01(ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
5.	Name: Globe Valve Stop Check Size: DN 15 Standard: Flanged, Socket Weld Steel ASTM A105, CLASS 300 MIN., ASME B16.34, Full Port for in-Line Service; or Flanged/Threaded DI ASTM A395 CLASS 300 Trim: Bronze or Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	11 Pcs	33 Pcs
6.	Name: Globe Valve Stop Check (Overboard valve) DN: 15 Standard: Flanged OR Threaded Bronze ASTM B62, B505- 83600, B150-64200, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-253-01 (ME & AE SW cooling system- Rev-1)	LR Cert.	02 Pcs	06 Pcs
7.	Name: Valve With Hose Connection Size: DN 15 Standard: ASME F1508, Trim: Bronze Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	31 Pcs	93 Pcs
8.	Name: Back flow preventer with check valve Size: DN 15 Standard: ASME F1508, Trim: Bronze Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	2 Pcs	6 Pcs
9.	Name: Moving Pillar cock DN:15 Type: Marine Trim: Chrome coated brass Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	05 Pcs	15 Pcs

10.	Name: Bib Cock DN:15 Type: Marine Trim: Chrome coated brass Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	25 Pcs	75 Pcs
11.	Name: Shower Mixture (Hot & Cold) DN:15 Type: Marine Trim: Chrome coated brass Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	08 Pcs	24 Pcs
12.	Name: Pillar Cock DN: 15 Type: marine Trim: Chrome coated brass Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	23 Pcs	69 Pcs
13.	Name: Angle Stop Cock DN: 15 Type: marine Trim: Chrome coated brass Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	150 Pcs	450 Pcs
14.	Name: Ball Valve Size: DN 20 Standard: Socket Weld or Threaded, Bronze ASTM B61/62 OR ASTM B584 C84400, Cu-Ni ENDCAPS for Socket Weld, Full Port for in-Line Service Trim: Bronze Drawing No: 534-522-01(Magazine spraying system Arrangement- Rev- 0) Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	02 Pcs	06 Pcs
15.	Name: Ball Valve Size: DN 20 Standard: Socket Weld or Threaded, Steel ASTM A105, A216, ASME B16.34 or MSS SP-110, Class 300 Min., Full Port for in-Line Service. Trim: Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	12 Pcs	36 Pcs
16.	Name: Ball Valve Size: DN 20 Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34	Manufacturer test Cert.	32 Pcs	96 Pcs

	OR MSS SP-110, Class 150 Min., Full Port for in- Line Service. Trim: Stainless Steel Drawing No: 534-261-01 (Fuel oil service system-Rev- 1)			
17.	Name: Globe Valve Stop Check Size: DN 20 Standard: Flanged, Socket Weld Steel ASTM A105, CLASS 300 MIN., ASME B16.34, Full Port for in-Line Service; or Flanged/ Threaded DI ASTM A395 CLASS 300 Trim: Bronze or Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
18.	Name: Check Valve Swing Size: DN 20 Standard: Flanged, Socket Weld Steel ASTM A105, Class 150 Min., ASME B16.34, FULL Port For in-Line Service; or Flanged DI ASTM A395 Class 150 Trim: Stainless Steel Drawing No: 534-261-01 (Fuel oil service system-Rev- 1)	Manufacturer test Cert.	03 Pcs	09 Pcs
19.	Name: Check Valve Swing Size: DN 20 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	03 Pcs	09 Pcs
20.	Name: Valve quick closing remote Size: DN 20 Pressure Rating - Class 150 Body - DI ASTM A395 Type - Straight / Angle Stem - AISI304 Disc - AISI304 Seat - AISI304 Drawing No: 534-261-01 (Fuel oil service system-Rev- 1)	Manufacturer test Cert.	01 Pcs	03 Pcs
21.	Name: Pressure relief valve angled self-actuated Size: DN 20 (Set point: 1.65 bar) Standard: ASME F1508, Trim: Bronze Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	01 Pcs	03 Pcs

22.	Name: Three-way valve two position electric motor operated Size: DN 20 Standard: ASME F1508, Trim: Bronze Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	01 Pcs	03 Pcs
23.	Name: Air vent valve Size: DN 20 Standard: ASME F1508, Trim: Bronze Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	01 Pcs	03 Pcs
24.	Name: Automatic air vent valve Size: DN 20 Standard: ASME F1508, Trim: Bronze Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	01 Pcs	03 Pcs
25.	Name: Ball Valve Size: DN 25 Standard: Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, Class 150 Min., Full Port For in- Line Service. Trim: Stainless Steel Drawing No: 534-261-01 (Fuel oil service system-Rev- 1) Drawing No: 534-541-01 (FO fill & transfer system-Rev- 0)	Manufacturer test Cert.	49 Pcs	147
26.	Name: Ball Valve Size: DN 25 Standard: Socket Weld or Threaded, Bronze ASTM B61/62 OR ASTM B584 C84400, Cu-Ni ENDCAPS For Socket Weld, Full Port for in-Line Service Trim: Bronze Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1) Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs
27.	Name: Globe Valve Size: DN 25 Standard: BUTT WELD, STEEL ASTM A105, A216, ASME B16.34 or MSS SP-110, CLASS 150 MIN., Full Port for in-Line Service. Trim: Bronze Or Stainless Steel Drawing No: 534-593-01 (oily water	Manufacturer test Cert.	02 Pcs	06 Pcs

	system- Rev-0)			
28.	Name: Globe Valve Stop Check Size: DN 25 Standard: Flanged, Socket Weld Steel ASTM A105, Class 150 Min., ASME B16.34, Full Port for in-Line Service; Or Flanged/Threaded DI ASTM A395 CLASS 150 Trim: Bronze or Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
29.	Name: Globe Valve stop check (Overboard valve) DN: 25 Standard: Flanged, BUTT WELD STEEL ASTM A105, Class 150 Min., ASME B16.34, Full Port For in-line Service; or Flanged/Threaded DI ASTM A395 Class 150 Trim: Bronze or Stainless Steel Drawing No: 534-593-01 (Oily water system- 0)	LR Cert.	01 Pcs	03 Pcs
30.	Name: Check Valve Swing Size: DN 25 Standard: Flanged, Socket Weld Steel ASTM A105, Class 150 Min., ASME B16.34, Full Port For in-Line Service; or Flanged DI ASTM A395 CLASS 150 Trim: Stainless Steel Drawing No: 534-261-01 (Fuel oil service system-Rev- 1)	Manufacturer test Cert.	02 Pcs	06 Pcs
31.	Name: Check Valve Swing Size: DN 25 Standard: Flanged, Butt Weld Steel ASTM A105, Class 150 Min., ASME B16.34, Full Port For in-Line Service; or Flanged/Threaded DI ASTM A395 CLASS 150 Trim: Bronze or Stainless Steel Drawing no: 534-593-01 (Oily water system- Rev-0)	Manufacturer test Cert.	05 Pcs	15 Pcs
32.	Name: Gate valve Size: DN 25 Standard: Butt Weld, Steel ASTM A105, A216, ASME B16.34 or MSS SP-110, CLASS 150 MIN., Full Port for in-Line Service. Trim: Bronze or Stainless Steel Drawing No: 534-593-01 (Oily water system- Rev-0)	Manufacturer test Cert.	14 Pcs	42 Pcs

33.	Name: Solenoid operated valve Size: DN 25 Pressure Rating - Class 150 Body - DI ASTM A395 Type - Straight / Angle Stem - AISI304 Disc - AISI304 Seat - AISI304 Drawing No: 534-261-01 (Fuel oil service system-Rev- 1)	Manufacturer test Cert.	02 Pcs	06 Pcs
34.	Name: Self-closing valve Size: DN 25 Standard: ASME F1508, Trim: Bronze Drawing No: 534-541-01(FO fill & transfer system- Rev-0) Drawing No: 534-593-01 (Oily water system- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs
35.	Name: Pressure relief valve self-actuated globe Size: DN: 25 (Set Point 3.3 BAR) Standard: ASME F1508, Trim: Bronze Drawing No: 534-593-01 (Oily water system- Rev- 0)	Manufacturer test Cert.	03 Pcs	09 Pcs
36.	Name: Ball Valve Size: DN 32 Standard: Socket Weld or Threaded, Steel ASTM A105, A216, ASME B16.34 or MSS SP-110, CLASS 300 MIN., Full Port for in-Line Service. Trim: Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	05 Pcs	15 Pcs
37.	Name: Ball Valve Size: DN 32 Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34 or MSS SP-110, CLASS 150 MIN., Full Port for in- Line Service. Trim: Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
38.	Name: Globe Valve Size: DN 32 Standard: Flanged, Socket Weld Steel ASTM A105, Class 150 Min., ASME B16.34, Full Port For In-Line Service; or Flanged/ Threaded DI ASTM A395 Class 150 Drawing No: 534-593-01 (Oily water system- Rev- 0)	Manufacturer test Cert.	07 Pcs	21 Pcs

39.	Name: Globe Valve Stop Check Size: DN 32 Standard: Flanged, Socket Weld Steel ASTM A105, Class 300 Min., ASME B16.34, Full Port for in-Line Service; Or Flanged/ Threaded DI ASTM A395 CLASS 300 Trim: Bronze or Stainless Steel Drawing No: 534-551-01(Compressed & control air system- Rev-1)	Manufacturer test Cert.	01 Pcs	03 Pcs
40.	Name: Globe Valve Stop Check Size: DN 32 Standard: Flanged, Socket Weld Steel ASTM A105, Class 150 Min., ASME B16.34, Full Port for in-Line Service; Or Flanged/Threaded DI ASTM A395 CLASS 150 Trim: Bronze or Stainless Steel Drawing No: 534-551-01(Compressed & control air system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
41.	Name: Check Valve Swing Size: DN 32 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	03 Pcs	09 Pcs
42.	Name: Check valve swing Size: DN 32 Standard: Flanged, BUTT WELD STEEL ASTM A105, CLASS 150 MIN., ASME B16.34, Full Port for in-Line Service; Or Flanged/Threaded DI ASTM A395 Class 150 Min Trim: Bronze or Stainless Steel Drawing no: 534-593-01 (Oily water system- Rev-0)	Manufacturer test Cert.	09 pcs	27 pcs
43.	Name: Gate valve Size: DN 32 Standard: Butt Weld, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, Class 150 Min., Full Port for in-Line Service. Trim: Bronze or Stainless Steel Drawing No: 534-593-01 (oily water system- Rev-0)	Manufacturer test Cert.	14 Pcs	42 Pcs
44.	Balancing valve static DN: 32 Standard: ASME F1508,	Manufacturer test Cert.	01 Pcs	03 Pcs

	Trim: Bronze Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)			
45.	Name: Ball Valve Size: DN 40 Standard: Socket Weld or Threaded, Bronze ASTM B61/62 or ASTM B584 C84400, Cu-Ni ENDCAPS for Socket Weld, Full Port for in-Line Service Trim: Bronze Drawing No: 534-522-01 (Magazine spraying system Arrangement- Rev- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs
46.	Name: Ball Valve Size: DN 40 Standard: Socket Weld or Threaded, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, CLASS 300 MIN., Full Port for in-Line Service. Trim: Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
47.	Name: Ball Valve Size: DN 40 Standard: Flanged, Threaded or Socket Weld Steel ASTM A105, CLASS 150 MIN. , ASME B16.34, Full Port for in-Line Service Trim: Bronze or Steel Drawing No: 534-528-01 (Black & grey water system diagram- Rev- 0) Drawing No: 534-543-01 (Lube oil system-Rev- 1)	Manufacturer test Cert.	08 Pcs	24 Pcs
48.	Name: Ball Valve DN: 40 Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, CLASS 150 MIN., Full Port for in-Line Service. Trim: Stainless Steel Drawing No: 534-543-01(Lube oil system-Rev- 1)	Manufacturer test Cert.	13 Pcs	39 Pcs
49.	Name: Check Valve Swing Size: DN 40 Standard: Flanged, Threaded or Socket Weld Steel ASTM A105, Class 150 Min. , ASME B16.34, Full Port for in-Line Service Trim: Bronze or Steel Drawing no: 534-528-01 (Black & grey	Manufacturer test Cert.	02 Pcs	06 Pcs

	water system diagram- Rev- 0)			
50.	Name: Check Valve Swing Size: DN 40 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150 Trim: Bronze Drawing no: 534-531-01 FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	06 Pcs	18 Pcs
51.	Name: Check Valve Swing Size: DN 40 Standard: Flanged, Socket Weld Steel ASTM A105, CLASS 150 MIN., ASME B16.34, Full Port For in-Line Service; or Flanged DI ASTM A395 Class 150 Trim: Stainless Steel Drawing no: 534-543-01 (Lube oil system-Rev- 1)	Manufacturer test Cert.	04 Pcs	12 Pcs
52.	Name: Gate valve Size: DN 40 Standard: Butt Weld, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, CLASS 150 MIN., Full Port for in-Line Service. Trim: Bronze or Stainless Steel Drawing No: 534-593-01 (oily water system- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs
53.	Name: Short sounding with self-closing valve, test Fitting, cap, and chain Size: DN 40 Type: Threaded, Material: Bronze Standard: ASTM SB61/62, MSS-SP-80 Trim: Bronze Drawing No: 534-506-01(Vents & Sounding System diagram- Rev- 0)	Manufacturer test Cert.	14 Pcs	42 Pcs
54.	Name: Globe Valve Stop Check Size: DN 40 Standard: Flanged Bronze ASTM B62, B505-83600, B150-64200, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-522-01 (Magazine spraying system Arrangement- Rev- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs
55.	Name: Globe Valve Stop Check Size: DN 40 Standard: Flanged, Socket Weld Steel ASTM A105, CLASS 150 MIN., ASME B16.34, Full Port for in-Line Service; or Flanged/ Threaded DI ASTM A395 CLASS 150 Trim: Bronze or Stainless Steel	Manufacturer test Cert.	01 Pcs	03 Pcs

	Drawing No: 534-551-01 (Compressed & control air system- Rev-1)			
56.	Name: Wafer Check Valve Size: DN 50 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-522-02(Vehicle deck sprinkler system- Rev- 0)	Manufacturer test Cert.	01 Pcs	03 Pcs
57.	Name: Ball Valve DN: 50 Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, CLASS 150 MIN., Full Port for in-Line Service. Trim: Stainless Steel Drawing No: 534-551-01 (Compressed & control air system- Rev-1)	Manufacturer test Cert.	06 Pcs	18 pcs
58.	Name: Ball Valve DN: 50 Standard: Flanged, Threaded or Socket Weld Steel ASTM A105, Class 150 Min. , ASME B16.34, Full Port for in-Line Service Trim: Bronze Or Steel Drawing No: 534-528-01 (Black & grey water system diagram- Rev- 0)	Manufacturer test Cert.	11 Pcs	33 Pcs
59.	Name: Ball Valve Size: DN 50 Standard: Socket Weld, Steel ASTM A105, A216, ASME B16.34 OR MSS SP-110, Class 150 Min., Full Port for in- Line Service. Trim: Stainless Steel Drawing No: 534-259-01(Exhaust gas system- Rev- 1) Drawing No: 534-261-01(Fuel oil service system-Rev- 1) Drawing No: 534-543-01 (Lube oil system-Rev- 1)	Manufacturer test Cert.	26 Pcs	78 Pcs
60.	Name: Globe Valve DN: 50 Standard: Flanged or Threaded Bronze ASTM B62, B505-83600, B150-64200, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-253-01(ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
61.	Name: Butterfly Valve(Overboard valve) Size: DN 50 Standard: LUG, ASTM A395, MSS-SP-	LR Cert.	03 Pcs	09 Pcs

	67, ASME B16.34, CLASS 150.sss Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-521-01(Fire main and wash down system- Rev-0) Drawing No: 534-522-02 (Vehicle deck sprinkler system- Rev- 0)			
62.	Name: Check Valve Swing Size: DN 50 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing no: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	03 Pcs	09 Pcs
63.	Name: Gate valve(Overboard) Size: DN 50 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-531-01(FW generation & domestic FW system diagram- Rev- 0)	LR Cert.	02 Pcs	06 Pcs
64.	Name: Gate valve (Overboard valve) Size: DN 50 Standard: Flanged or Threaded Bronze ASTM B62, B505-83600, B150- 64200, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-253-01 (ME & AE SW cooling system- Rev-1)	LR Cert.	02 Pcs	06 Pcs
65.	Name: Pressure Relief Valve DN 50 Standard: ASME F1508, Trim: Bronze Drawing No: 534-521-01(Fire main and wash down system- Rev-0)	Manufacturer test Cert.	02 Pcs	06 Pcs
66.	Name: Relief Valve DN: 50 Standard: ASME F1508, Trim: Bronze Drawing No: 534-522-02(Vehicle deck sprinkler system- Rev- 0)	Manufacturer test Cert.	01 Pcs	03 Pcs
67.	Name: Valve quick closing remote Size: DN 50 Pressure Rating - Class 150 Body - DI ASTM A395 Type - Straight / Angle Stem - AISI304 Disc - AISI304	Manufacturer test Cert.	02 Pcs	06 Pcs

	Seat - AISI304 Drawing No: 534-261-01(Fuel oil service system-Rev- 1)			
68.	Name: Balancing valve static Size: DN 50 Standard: ASME F1508, Trim: Bronze Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	01 Pcs	03 Pcs
69.	Name: Three-way valve two position electric motor operated Size: DN 50 Standard: ASME F1508, Trim: Bronze Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	02 Pcs	06 Pcs
70.	Name: Wafer Check Valve DN: 50 Standard: Flanged or threaded bronze ASTM B62, B505- 83600, B150-64200, ASME B16.34, class 150 Trim: Bronze Drawing no: 534-253-01 (ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
71.	Name: Wafer Check Valve Size: DN 65 Standard: Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-529-01 (Bilge system- Rev- 0)	Manufacturer test Cert.	20 Pcs	60 Pcs
72.	Name: Ball Valve Size: DN 65 Standard: Socket Weld or Threaded, Bronze ASTM B61/62 OR ASTM B584 C84400, Cu-Ni ENDCAPS For Socket Weld, Full Port for in-Line Service Trim: Bronze Drawing No: 534-514-05 Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	08 Pcs	24 Pcs
73.	Name: Globe Valve Size: DN 65 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-253-01 (ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
74.	Name: Globe Stop Check Valve Size: DN 65	Manufacturer test Cert.	03 Pcs	09 Pcs

	Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-521-01 (Fire main and wash down system- Rev-0)			
75.	Name: Butterfly Valve Size: DN 65 Standard: WAFER, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-521-01 (Fire main and wash down system- Rev-0)	Manufacturer test Cert.	05 Pcs	15 Pcs
76.	Name: Butterfly Valve (Sea chest) Size: DN 65 Type: LUG Trim: Bronze Standard: ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Drawing No: 534-506-01 (Vents & Sounding System diagram- Rev- 0)	LR Cert.	12 Pcs	36 Pcs
77.	Name: Butterfly Valve Size: DN 65 Standard: WAFER/LUG, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-529-01(Bilge system- Rev- 0) Drawing No: 534-531-01 (FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	26 Pcs	78 Pcs
78.	Name: Butterfly Valve Size: DN 65 Standard: Wafer/LUG, ASTM A395, MSS-SP-67, ASME B16.34, Class 150 Trim: Bronze or Stainless Steel Drawing No: 534-541-01 (FO fill & transfer system- Rev- 0)	Manufacturer test Cert.	12 Pcs	36 Pcs
79.	Name: Fire Hydrant Valve Size: DN 65 Standard: Flanged or Threaded Bronze ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Trim: Alum. Bronze NBR Seat Drawing No: 534-521-01 (Fire main and wash down system- Rev-0)	Manufacturer test Cert.	22 Pcs	66 Pcs

80.	Name: Check Valve Swing Size: DN 65 Standard: Flanged, Socket Weld Steel ASTM A105, Class 150 Min., ASME B16.34, Full Port for in-Line Service; OR Flanged DI ASTM A395 CLASS 150 Trim: Stainless Steel Drawing No: 534-541-01 (FO fill & transfer system- 0)	Manufacturer test Cert.	02 Pcs	06 Pcs
81.	Name: Non return swing check valve (Overboard valve) Size: DN 65 Type: Flanged Material: Steel Standard: ASTM A105, A216, CLASS 150, ASME B16.34 Class approved DI ASTM A395, Class 150 Trim: steel Drawing No: 534-526-01 (Deck scuppers & internal drains diagram- Rev-1)	LR Cert.	01 Pcs	03 Pcs
82.	Name: Balancing valve static Size: DN 65 Standard: ASME F1508, Trim: Bronze Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	02 Pcs	06 Pcs
83.	Name: Tank vent terminal with check feature and flame screen DN: 65 Type: Steel, Flanged, Oil systems, inverted flame screens Type approval required Trim: Stainless Steel Drawing no: 534-506-01(Vents & Sounding System diagram- Rev- 0)	LR Type Approved cert.	01 Pcs	03 Pcs
84.	Name: Tank vent terminal with check feature DN: 65 Type: Steel, Flanged, Water systems, vertical, w/insect, inverted w screens, Type approval required Trim: Stainless Steel Drawing no: 534-506-01(Vents & Sounding System diagram- Rev- 0)	LR Type Approved cert.	17 Pcs	51 Pcs
85.	Name: Butterfly Valve DN: 65 Standard: Wafer/ Lug, ASTM A395, MSS- SP-67, ASME B16.34, Class 150 Trim: Bronze or Alum. Bronze with NBR Seat. Drawing no: 534-253-01 (ME & AE SW	Manufacturer test Cert.	08 Pcs	24 Pcs

	cooling system- Rev-1)			
86.	Name: Butterfly Valve (Overboard valve) DN: 65 Type: LUG, ASTM A395, MSS- SP-67, ASME B16.34, Class 150 Trim: Bronze or Alum. Bronze with NBR Seat. Drawing no: 534-253-01 (ME & AE SW cooling system- Rev-1)	LR cert.	04 Pcs	12 Pcs
87.	Name: Check valve swing Size: DN 65 Standard: Flanged/ Wafer Steel ASTM A105, A216, ASME B16.34, CLASS 150 Trim: Bronzed or Steel Drawing no: 534-528-01 (Black & grey water system diagram- Rev- 0)	Manufacturer test Cert.	05 Pcs	15 Pcs
88.	Name: Wafer Check Valve Size: DN 80 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-529-01(Bilge system- Rev- 0) Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	08 Pcs	24 Pcs
89.	Name: Ball Valve Size: DN 80 Standard: Flanged/Wafer Steel ASTM A105, A216, ASME B16.34, CLASS 150 Trim: Bronze or Steel Drawing No: 534-528-01 Black & grey water system diagram- Rev- 0)	Manufacturer test Cert.	10 Pcs	30 Pcs
90.	Name: Globe Valve Size: DN 80 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	02 Pcs	06 Pcs
91.	Name: Globe Stop Check Valve (Overboard valve) Size: DN 80 (Overboard) Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150. Trim: Bronze Drawing No: 534-529-01(Bilge system- Rev- 0)	LR cert.	03 Pcs	09 Pcs

92.	Name: Globe Stop Check Valve With valve spindle set and necessary accessories which to be extended so that the hand wheel is not less than 460 mm above the bottom platform Size: DN 80 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150. Trim: Bronze Drawing No: 534-529-01(Bilge system- Rev- 0)	Manufacturer test Cert.	02 Pcs	06 Pcs
93.	Name: Butterfly Valve Size: DN 80 Standard: WAFER, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-521-01(Fire main and wash down system- Rev-0)	Manufacturer test Cert.	01 Pcs	03 Pcs
94.	Name: Butterfly Valve Size: DN 80 Standard: Wafer/LUG, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150 Trim: Bronze or Alum. Bronze NBR Seat. Drawing No: 534-529-01(Bilge system- Rev- 0) Drawing No: 534-514-05 (Chilled water diagram for air condition- Rev- 1)	Manufacturer test Cert.	18 Pcs	54 Pcs
95.	Name: Butterfly Valve Size: DN 80 Standard: Wafer/LUG, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150 Trim: Bronze or Stainless Steel Drawing No: 534-541-01 (FO fill & transfer system- Rev-0)	Manufacturer test Cert.	09 Pcs	27 Pcs
96.	Name: Valve quick closing remote DN: 80 Pressure Rating - Class 150 Body - DI ASTM A395 Type - Straight / Angle Stem - AISI304 Disc - AISI304 Seat - AISI304 Drawing No: 534-541-01 (FO fill & transfer system-Rev- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs
97.	Name: Tank Vent Terminal with Check Feature and Flame Screen DN: 80	LR Type Approved cert.	02 Pcs	06 Pcs

	Type: Steel, Flanged, Oil systems, inverted flame screens Type approval required Trim: Stainless Steel Drawing no: 534-506-01(Vents & Sounding System diagram- Rev- 0)			
98.	Name: Tank Vent Terminal with Check Feature and Flame Screen DN: 100 Type: Steel, Flanged, Oil systems, inverted flame screens Type approval required Trim: Stainless Steel Drawing no: 534-506-01(Vents & Sounding System diagram- Rev- 0) Drawing no: 534-506-02 (Fuel oil service system-Rev- 1)	LR Type Approved cert.	03 Pcs	09 Pcs
99.	Name: Wafer Check Valve Size: DN 100 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 Trim: Bronze Drawing No: 534-521-01(Fire main and wash down system- Rev-0) Drawing No: 534-522-02 (Vehicle deck sprinkler system- Rev- 0) Drawing No: 534-529-02(Ballast system- Rev- 0)	Manufacturer test Cert.	06 Pcs	18 Pcs
100.	Name: Ball Valve (Overboard valve) Size: DN 100 Standard: Flanged, Steel ASTM A105, Class 150 Min. , ASME B16.34, Full Port for in-Line Service Trim: Bronze or Steel Drawing No: 534-528-01 (Black & grey water system diagram- Rev- 0)	LR cert.	01 pcs	03 pcs
101.	Name: Globe Valve Size: DN 100 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-521-01 (Fire main and wash down system- Rev-0)	Manufacturer test Cert.	01 Pcs	03 Pcs
102.	Name: Globe Stop Check Valve Size: DN 100 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150. Trim: Bronze Drawing No: 534-529-01(Bilge system- Rev- 0)	Manufacturer test Cert.	04 Pcs	12 Pcs

	Drawing No: 534-522-02(Vehicle deck sprinkler system- Rev- 0)			
103.	Name: Butterfly Valve Size: DN 100 Standard: Wafer, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR Seat Drawing No: 534-521-01(Fire main and wash down system- Rev-0)	Manufacturer test Cert.	05 Pcs	15 Pcs
104.	Name: Butterfly Valve Size: DN 100 Standard: Wafer/LUG, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-522-02(Vehicle deck sprinkler system- Rev- 0) Drawing No: 534-529-02 (Ballast system- Rev- 0)	Manufacturer test Cert.	31 Pcs	93 Pcs
105.	Name: Butterfly Valve (Overboard valve) Size: DN 100 Type:: LUG Standard: ASTM A395, MSS-SP-67, ASME B16.34, Class 150 Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-529-01(Bilge system- Rev- 0) Drawing No: 534-529-02 (Ballast system- Rev- 0)	LR Cert.	03 Pcs	09 Pcs
106.	Name: Check valve Swing Size: DN 100 Standard: Flanged/Wafer Steel ASTM A105, A216, ASME B16.34, Class 150 Trim: Bronzed or Steel. Drawing No: 534-528-01 (Black & grey water system diagram- Rev- 0)	Manufacturer test Cert.	02 Pcs	06 Pcs
107.	Name: Gate valve Size: DN 100 Standard: Flanged Bronze ASTM B61/62, MSS SP-80, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-529-02 (Ballast system- Rev- 0)	Manufacturer test Cert.	02 Pcs	06 Pcs
108.	Name: Glove Valve stop check (Overboard valve) Size: DN 125	LR Cert.	01 Pcs	03 Pcs

	Type: LUG Trim: Bronze Standard: ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Drawing No: 534-506-01(Vents & Sounding System diagram- Rev- 0)			
109.	Name: Butterfly Valve Size: DN 125 Standard: Wafer, ASTM A395, MSS- SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-521-01(Fire main and wash down system- Rev-0)	Manufacturer test Cert.	02 Pcs	06 Pcs
110.	Name: Butterfly Valve Size: DN 125 Standard: Wafer/LUG, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-522-02 (Vehicle deck sprinkler system- Rev- 0)	Manufacturer test Cert.	01 Pcs	03 Pcs
111.	Name: Gate valve (Overboard valve) Size: DN 125 Standard: Flanged Bronze ASTM B61/ 62, MSS SP-80, ASME B16.34, Class 150 Trim: Bronze Drawing No: 534-253-01(ME & AE SW cooling system- Rev-1)	LR Cert.	02 Pcs	06 Pcs
112.	Name: Tank Vent Terminal with Check Feature DN: 125 Type: Steel, Flanged, Water systems, vertical, w/insect, inverted w screens, Type approval required Trim: Stainless Steel Drawing no: 534-506-01(Vents & Sounding System diagram- Rev- 0)	LR Type Approved cert.	10 Pcs	30 Pcs
113.	Name: Butterfly Valve DN: 125 Standard: Wafer/ Lug, ASTM A395, MSS- SP-67, ASME B16.34, Class 150 Trim: Bronze or Alum. Bronze with NBR Seat. Drawing no: 534-253-01(ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	08 Pcs	24 Pcs
114.	Name: Butterfly Valve (Overboard valve) DN: 125	LR cert.	04 Pcs	12 Pcs

	Standard:: LUG, ASTM A395, MSS-SP-67, ASME B16.34, Class 150 Trim: Bronze or Alum. Bronze with NBR Seat. Drawing no: 534-253-01(ME & AE SW cooling system- Rev-1)			
115.	Name: Wafer Check Valve DN: 125 Flanged Bronze ASTM B61/ 62, MSS SP- 80, ASME B16.34, class 150 Trim: Bronze Drawing no: 534-253-01(ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
116.	Name: Butterfly Valve (Sea Chest) Size: DN 150 Standard: LUG, ASTM A395, MSS-SP-67, ASME B16.34, Class 150.sss Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-521-01(Fire main and wash down system- Rev-0)	LR Cert.	02 Pcs	06 Pcs
117.	Name: Butterfly Valve Size: DN 150 Standard: WAFER, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, Trim: Bronze or Alum. Bronze with NBR SEAT Drawing No: 534-521-01(Fire main and wash down system- Rev-0)	Manufacturer test Cert.	02 Pcs	06 Pcs
118.	Name: Pressure relief valve Standard: ASME F1508, Trim: Bronze Drawing No: 534-543-01(Lube oil system-Rev- 1)	Manufacturer test Cert.	04 Pcs	12 Pcs
119.	Name: Pressure relief valve angled self-actuated (Set Point 8.8 BAR) Standard: ASME F1508, Trim: Bronze Drawing No: 534-551-01(Compressed & control air system- Rev-1)	Manufacturer test Cert.	02 Pcs	06 Pcs
120.	Name: Pressure relief valve angled self-actuated (Set Point 44 BAR) Standard: ASME F1508, Trim: Bronze Drawing No: 534-551-01(Compressed & control air system- Rev-1)	Manufacturer test Cert.	04 Pcs	12 Pcs
121.	Name: Pressure Relief Valve Self-Actuated Globe Standard: ASME F1508,	Manufacturer test Cert.	02 Pcs	06 Pcs

	Trim: Bronze Drawing No: 534-541-01(FO fill & transfer system-Rev- 0)			
122.	Name: Valve, cock (gage) ASME F1508, Trim: Bronze Drawing No: 534-521-01(Fireman and wash down system- Rev-0) Drawing No: 534-522-02 (Vehicle deck sprinkler system- Rev- 0) Drawing No: 534-551-01(Compressed & control air system- Rev-1) Drawing No: 534-529-02(Ballast system- Rev- 0) Drawing No: 534-261-01(Fuel oil service system-Rev- 1) Drawing No: 534-541-01(FO fill & transfer system-Rev- 0) Drawing No: 534-593-01(oily water system- 0) Drawing No: 534-531-01(FW generation & domestic FW system diagram- Rev- 0) Drawing No: 534-543-01(Lube oil system-Rev- 1) Drawing No: 534-528-01(Black & grey water system diagram- Rev- 0)	Manufacturer test Cert.	100 Pcs	300 Pcs
123.	Name: Self-closing valve ASME F1508, Trim: Bronze Drawing No: 534-531-01 FW generation & domestic FW system diagram- Rev- 0)	Manufacturer test Cert.	02 Pcs	06 Pcs
124.	Name: Motor Operated Valve ASME F1508, Trim: Bronze Drawing no: 534-555-03 (CO2 sydtem- Rev-1)	Manufacturer test Cert.	05 Pcs	15 Pcs
125.	Name: Purging cock Valve ASME F1508, Trim: Bronze Drawing no: 534-522-02(Vehicle deck sprinkler system- Rev- 0)	Manufacturer test Cert.	10 Pcs	30 Pcs
126.	Name: Purging Cock Valve For Pressure Gauge ASME F1508, Trim: Bronze Drawing no: 534-253-01 (ME & AE SW cooling system- Rev-1)	Manufacturer test Cert.	26 Pcs	78 pcs
127.	Name: High Pressure Block Type Ball Valve. Size: Ø 1 1/4 inch Dwg: Sch-A-W15349, Rev-1	LR (Mat) Cert.	02 Pcs	06 Pcs

	(For Steering Gear System)			
128.	Name: High Pressure Block Type Ball Valve Size: Ø 1/2 inch Dwg: Sch-A-W15349, Rev-1 (For Steering Gear System)	LR (Mat) Cert.	04 Pcs	12 Pcs

11. Standard necessary : N/A
accessories

12. Documents : Supplier will provide sample class approved material certificate and manufacturer certificate with the offer. LR Class approved material, type certificate and manufacturer certificate are to be provided with the valve.

13. Certificate : (a) Required LR material and type certificate are to be provided with material shipment that has been stated in scope of supply in serial -10 above.
(b) Required manufacturer certificate or statement declaration confirming valve has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.

14. Installation Supervision : N/A.

15. Test-Trial and : N/A.
commissioning



16. Training : N/A.





TECHNICAL SPECIFICATION OF CU-NI, CARBON STEEL AND STAINLESS STEEL FLANGE






1. Name of Equipment : CU-NI, CARBON STEEL AND STAINLESS STEEL FLANGE
2. Purpose : Flange is used in between both side tightly connect pipes, valves, equipment and other components. They are easily and shortage way closed/ opened for transfer fluid, smooth flow and easy maintenance.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type of Flange.
7. Type : Marine uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship

10. The flange should have the following technical requirements:




a. Copper Nickel Flange:





Ser	Copper Nickel Flange Specification	Required	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 15 Type: Composite weld neck Flange Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-531 01 (FW Generation & Domestic FW System Diagram) Drawing No: 534-253- 01 (Rev-1, ME & AE Sea Water Cooling System) Photo: 	Manufacturer Certificate	520 Pcs	1560 Pcs
2.	Size: DN 20 Type: Composite weld neck Flange Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram) Drawing No: 534-514-05 (Rev-1, Chilled Water Diagram for Air- Condition) Photo: 	Manufacturer Certificate	168 Pcs	504 Pcs
3.	Size: DN 25 Type: Composite weld neck Flange Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5	Manufacturer Certificate	62 Pcs	186 Pcs




	Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram) Drawing No: 534-514-05 (Rev-1, Chilled Water Diagram for Air- Condition) Photo: 			
4.	Size: DN 32 Type: Composite weld neck Flange Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-531 01 (FW Generation & Domestic FW System Diagram) Photo: 	Manufacturer Certificate	70 Pcs	210 Pcs
5.	Size: DN 40 Type: Composite weld neck Flange Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-522-01 (Magazine Spraying Arrangement) Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram) Photo: 	Manufacturer Certificate	164 Pcs	492 Pcs
6.	Size: DN 50 Type: Composite weld neck Flange, Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-522-02 (Vehicle Deck Sprinkler System) Drawing No: 534-514-05 (Chilled Water Diagram For Air-Condition) Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram) Drawing No: 534-253-01 (Rev-1, ME & AE Sea Water Cooling System) Photo: 	Manufacturer Certificate	174 Pcs	522 Pcs
7.	Size: DN 65 Type: Composite weld neck Flange, Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-529-01 (Bilge System) Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	870 Pcs	2610 Pcs

	Drawing No: 534-514-05 (Rev-1, Chilled Water Diagram for Air- Condition) Drawing No: 534-253-01 (Rev-1, ME & AE Sea Water Cooling System) Photo: 			
8.	Size: DN 80 Type: Composite weld neck Flange, Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-529-01 (Bilge System) Drawing No: 534-514-05 (Rev-1, Chilled Water Diagram for Air- Condition) Photo: 	Manufacturer Certificate	260 Pcs	780 Pcs
9.	Size: DN 100 Type: Composite weld neck Flange, Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-506-01 (Vents & Sounding System Diagram) Drawing No: 534-529-01 (Bilge System) Drawing No: 534-529-02 (Ballast System) Photo: 	Manufacturer Certificate	556 Pcs	1668 Pcs
10.	Size: DN 100 (Blind Flange) Type: Composite weld neck Flange Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) c. Carbon Steel (blind flange disc) Standard: CLASS 150, ASME B16.5 Drawing No: 534-529-02 (Ballast System) Photo: 	Manufacturer Certificate	04 Pcs	12 Pcs
11.	Size: DN 125 Type: Composite weld neck Flange, Material: a. Cu-Ni 90-10 (inner flange) b. Carbon Steel (outer flange) Standard: CLASS 150, ASME B16.5 Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-253-01 (Rev-1, ME & AE Sea Water Cooling System) Photo: 	Manufacturer Certificate	128 Pcs	384 Pcs



b. **Carbon Steel Flange:**






Ser	Carbon Steel Flange Specification	Required	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 08 (Connector) Type: Double Ferule Material: Carbon Steel Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	20 Pcs	60 Pcs
2.	Size: DN 15 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-551-01 (Rev-1, Compressed & Control Air System) Drawing No: 534-593-01 (Oily Water System) Remarks: High pressure (WP: 44 bar, TP: 66 bar) class 150 is not sufficient for high pressure line (only 24 pcs). Photo: 	Manufacturer Certificate	584 Pcs	1752 Pcs
3.	Size: DN 20 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-551-01 (Rev-1, Compressed & Control Air System) Photo: 	Manufacturer Certificate	580 Pcs	1740 Pcs
4.	Size: DN 25 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System) Drawing No: 534-551-01 (Rev-1, Compressed & Control Air System) Drawing No: 534-593-01 (Oily Water System) (International Shore Connection only 06 pcs) Remarks: High pressure (WP: 44 bar, TP: 66 bar) class 150 is not sufficient for high pressure line (only 30 pcs). Photo: 	Manufacturer Certificate	194 Pcs	582 Pcs
5.	Size: DN 32 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	440 Pcs	1320 Pcs

	Drawing No: 534-551-01 (Rev-1, Compressed & Control Air System) Drawing No: 534-593-01 (Oily Water System) Remarks: High pressure (WP: 44 bar, TP: 66 bar) class 150 is not sufficient for high pressure line (only 48 pcs). Photo: 			
6.	Size: DN 40 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-543-01 (Lub-oil system) Drawing No: 534-551-01 (Rev-1, Compressed & Control Air System) Drawing no: 534-593-01 (Oily Water System) Drawing no: 534-526-01 (Deck Scuppers & Internal Drains Daigram) Photo: 	Manufacturer Certificate	526 Pcs	1578 Pcs
7.	Size: DN 50 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-543-01 (Lub-oil system) Drawing No: 534-551-01 (Rev-1, Compressed & Control Air System) (Blind flange only 18 pcs) Drawing no: 534-593-01 (Oily Water System) Drawing no: 534-526-01 (Deck Scuppers & Internal Drains Daigram) Photo: 	Manufacturer Certificate	566 Pcs	1698 Pcs
8.	Size: DN 65 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-506-01 (Vents & Sounding System Diagram) Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-541-01 (FO Fill & Transfer System) Drawing no: 534-593-01 (Oily Water System) Drawing no: 534-526-01 (Deck Scuppers & Internal Drains Daigram) Photo: 	Manufacturer Certificate	494 Pcs	1482Pcs

9.	Size: DN 80 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-506-01 (Vents & Sounding System Diagram) Drawing No: 534-528-01 (Black & Grey water System Diagram) Drawing No: 534-541-01 (FO Fill & Transfer System) Photo: 	Manufacturer Certificate	266 Pcs	798 Pcs
10.	Size: DN 100 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing no: 534-506-02 (Fuel Oil Overflow) Drawing no: 534-528-01 (Black & Grey water System Diagram) Photo: 	Manufacturer Certificate	108 Pcs	324 Pcs
11.	Size: DN 125 Type: Raised Face (RF) Slip On (SO) Flange Material: Carbon Steel Standard: ASTM A105 CLASS 150, ASME B16.5 Drawing No: 534-506-01 (Vents & Sounding System Diagram) Photo: 	Manufacturer Certificate	40 Pcs	120 Pcs

c. **Stainless Steel Flange:**

Ser	Stainless Steel Flange Specification	Required	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN 50 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO) FLANGE ASTM A182 Type 316L, Class 150, ASME B16.5 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	28 Pcs	84 Pcs
2.	Size: DN 65 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: ASTM A182, F304L, CLASS 150, ASME B16.5 Drawing No: 534-506-01 (Vents & Sounding System Diagram) Photo: 	Manufacturer Certificate	60 Pcs	180 Pcs

3.	Size: DN 100 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO)FLANGE ASTM A182 Type 316L, Class 150, ASME B16.5 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	02 Pcs	06 Pcs
4.	Size: DN 150 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO)FLANGE ASTM A182 Type 316L, CLASS 150, ASME B16.5 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	12 Pcs	36 Pcs
5.	Size: DN 200 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO)FLANGE ASTM A182 Type 316L, Class 125, ASME B16.1 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	28 Pcs	84 Pcs
6.	Size: DN 250 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO)FLANGE ASTM A182 TYPE 321, CLASS 125, ASME B16.1 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	02 Pcs	06 Pcs
7.	Size: DN 300 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO)FLANGE ASTM A182 TYPE 321, CLASS 125, ASME B16.1 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	02 Pcs	06Pcs

8.	Size: DN 500 Type: Raised Face (RF) Slip On (SO) Flange Material: Stainless Steel Standard: Stainless Steel, RAISED FACE (RF) SLIP ON (SO) FLANGE ASTM A182 TYPE 321, CLASS 125, ASME B16.1 Drawing No: 534-259-01 (Exhaust Gas System) Photo: 	Manufacturer Certificate	28 Pcs	84 Pcs
9.	Name: Flange Size: DN 65 International Shore Connection. Drawing No: 534-521-01 (Firemain And Washdown System) Photo: 	Manufacturer Certificate	04 Pcs	12 Pcs
10.	Name: Flange Size: 10:1 Taper Companion Flange Drawing No: 534-243-01 (Shafting Arrangement) Photo: 	Manufacturer Certificate	02 Set	06 Set

11. Standard accessories necessary : N/A
12. Documents : N/A
13. Certificate : Required manufacturer certificate or statement declaration confirming Flange has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
14. Installation Supervision : N/A.
15. Test-Trial and commissioning : N/A.
16. Training : N/A.

**TECHNICAL SPECIFICATION OF CU-NI, CARBON STEEL STAINLESS STEEL AND
COPPER ALLOY PIPE**

1. Name of Equipment : Cu-Ni, Carbon Steel, Stainless Steel and Copper Alloy Pipe
2. Purpose : Pipe will be used to transfer fuel, lube oil, fresh water and dirty water etc in a vessel.
3. Quantity : As per serial 10
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned. For each type of pipe
7. Type : Marine uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The pipe should have the following technical requirements:

a. Copper Nickel Pipe

Ser	Copper Nickel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
1.	Size: DN 15 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 531-01 (Rev-0- FW generation & Domestic FW system diagram). Dwg: 253-01 (Rev-1- ME & AE SW Cooling system).	Manufacturer Certificate	620 meter	1860 meter (Length of each pipe is not less than 6 meter)
2.	Size: DN 20 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 531-01(Rev-0- FW generation & Domestic FW system diagram). Dwg: 514-05 (Rev-1- Chilled water diagram for air conditioning) Dwg: 522-01(Rev-0- Magazine Spraying system)	Manufacturer Certificate	138 meter	414 meter (Length of each pipe is not less than 6 meter)
3.	Size: DN 25 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III	Manufacturer Certificate	56 meter	168 meter (Length of each pipe is not less than 6 meter)

Ser	Copper Nickel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Drawing No: 531-01 (Rev-0- FW generation & Domestic FW system diagram). Drawing No: 514-05 (Rev-1- Chilled water diagram for air conditioning) Drawing No: 522-01 (Rev-0- Magazine Spraying system)			
4.	Size: DN 32 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 531-01 (Rev-0- FW generation & Domestic FW system diagram).	Manufacturer Certificate	70 meter	210 meter (Length of each pipe is not less than 6 meter)
5.	Size: DN 40 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 531-01 (Rev-0- FW generation & Domestic FW system diagram). Dwg: 522-01 (Rev-0- Magazine Spraying system)	Manufacturer Certificate	164 meter	492 meter (Length of each pipe is not less than 6 meter)
6.	Size: DN 50 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 531-01 (Rev-0- FW generation & Domestic FW system diagram). Dwg: 522-02 (Rev-0- Vehicle deck sprinkler system) Dwg: 253-01 (Rev-1- ME & AE SW Cooling system).	Manufacturer Certificate	101 meter	303 meter (Length of each pipe is not less than 6 meter)
7.	Size: DN 65 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 531-01 (Rev-0- FW generation & Domestic FW system diagram). Dwg: 514-05 (Rev-1- Chilled water diagram for air conditioning) Dwg: 522-02 (Rev-0- Vehicle deck sprinkler system) Dwg: 521-01 (Rev-0- Fire main and wash down system diagram)	Manufacturer Certificate	760 meter	2280 meter (Length of each pipe is not less than 6 meter)

Ser	Copper Nickel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Dwg: 529-01(Rev-0- Bilge system) Dwg: 253-01 (Rev-1- ME & AE SW Cooling system).			
8.	Size: DN 80 Thickness: Class-200 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Material: Cu-Ni 90-10 Class: III Dwg: 521-01(Rev-0- Fire main and wash down system diagram) Dwg: 522-02 (Rev-0- Vehicle deck sprinkler system) Dwg: 514-05 (Rev-1- Chilled water diagram for air conditioning) Dwg: 529-01(Rev-0- Bilge system)	Manufacturer Certificate	251 meter	753 meter (Length of each pipe is not less than 6 meter)
9.	Size: DN 100 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 521-01 (Rev-0- Fire main and wash down system diagram) Dwg: 522-02 (Rev-0- Vehicle deck sprinkler system) Dwg: 506-01(Rev-0- Vents and sounding system) Dwg: 529-02 (Rev-0- Ballast system) Dwg: 529-01 (Rev-0- Bilge system)	Manufacturer Certificate	590 meter	1770 meter (Length of each pipe is not less than 6 meter)
10.	Size: DN 125 Thickness: Class-200 Material: Cu-Ni 90-10 Pipe Standard: Seamless UNS C70600, MIL-T-16420K Class: III Dwg: 521-01 (Rev-0- Fireman and washdown system diagram) Dwg: 522-02 (Rev-0- Vehicle deck sprinkler system) Dwg: 253-01 (Rev-1- ME & AE SW Cooling system).	Manufacturer Certificate	115 meter	345 meter (Length of each pipe is not less than 6 meter)

b. Carbon Steel Pipe

Ser	Carbon Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
1.	Size: DN 08 Thickness: SCH.40 Pipe Class: III	Manufacturer Certificate	12 meter	36 meter (Length of each pipe is not less

Ser	Carbon Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Materials: Carbon Steel, Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 593-01 (Rev-0- Oily water system)			than 6 meter)
2.	Size: DN 15 Thickness: SCH.40 Pipe Class: III Materials: Carbon Steel, Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 593-01(Rev-0- Oily water system) Dwg: 551-01(Rev-1- Compressed and control air system for services).	Manufacturer Certificate	276 meter	828 meter (Length of each pipe is not less than 6 meter)
3.	Size: DN 15 Thickness: SCH.40 Pipe Class: II Materials: Carbon Steel, Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 551-01 (Rev-1- Compressed and control air system for starting).	LR (Material) Certificate	06 meter	18 meter (Length of each pipe is not less than 6 meter)
4.	Size: DN 20 Thickness: SCH.40 Class of pipe: III Material: Carbon Steel , Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 551-01 (Rev-1- Compressed and control air system for services). Dwg: 261-01 (Rev-1- Fuel oil service system)	Manufacturer Certificate	236 meter	708 meter (Length of each pipe is not less than 6 meter)
5.	Size: DN 25 Thickness: SCH.40 Class of pipe: III Material: Carbon Steel , Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 551-01 (Rev-1- Compressed and control air system for services). Dwg: 593-01 (Rev-0- Oily water system)	Manufacturer Certificate	140 meter	420 meter (Length of each pipe is not less than 6 meter)
6.	Size: DN 25 Thickness: SCH.40 Class of pipe: II Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B, ASME B36.10 Dwg: 551-01 (Rev-1- Compressed and control air system for starting).	LR (Material) Certificate	10 meter	30 meter (Length of each pipe is not less than 6 meter)
7.	Size: DN 32 Thickness: SCH.40	Manufacturer Certificate	330 meter	990 meter (Length of each

Ser	Carbon Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Class of pipe: III Material: Carbon Steel, Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 528-01 (Rev-0- Black and grey water system). Dwg: 551-01 (Rev-1- Compressed and control air system for services). Dwg: 593-01 (Rev-0- Oily water system)			pipe is not less than 6 meter)
8.	Size: DN 32 Thickness: SCH.40 Class of pipe: II Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B, ASME B36.10 Dwg: 551-01(Rev-1- Compressed and control air system for starting).	LR (Material) Certificate	15 meter	45 meter (Length of each pipe is not less than 6 meter)
9.	Size: DN 40 Thickness: SCH.40 Class of pipe: III Material: Carbon Steel , Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 551-01 (Rev-1- Compressed and control air system for services). Dwg: 506-01 (Rev-0- Vents and sounding system) Dwg: 526-01 (Rev-1- Deck scuppers and Internal Drains system) Dwg: 528-01 (Rev-0- Black and grey water system) Dwg: 593-01 (Rev-0- Oily water system) Dwg: 543-01 (Rev-1- Lube oil system)	Manufacturer Certificate	718 meter	2154 meter (Length of each pipe is not less than 6 meter)
10.	Size: DN 40 Thickness: SCH.40 Class of pipe: II Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 551-01 (Rev-1- Compressed and control air system for starting).	LR (Material) Certificate	18 meter	54 meter (Length of each pipe is not less than 6 meter)
11.	Size: DN 50 Thickness: SCH.40 Class of pipe: III Material: Carbon Steel , Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 551-01 (Rev-1- Compressed and control air system for services).	Manufacturer Certificate	380 meter	1140 meter (Length of each pipe is not less than 6 meter)

Ser	Carbon Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Dwg: 526-01 (Rev-1- Deck scuppers and Internal Drains system) Dwg: 528-01 (Rev-0- Black and grey water system). Dwg: 543-01 (Rev-1- Lube oil system) Dwg: 593-01 (Rev-0- Oily water system)			
12.	Size: DN 50 Thickness: SCH.40 Class of pipe: II Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B, ASME B36.10 Dwg: 551-01 (Rev-1- Compressed and control air system for starting).	LR (Material) Certificate	46 meter	138 meter (Length of each pipe is not less than 6 meter)
13.	Size: DN 65 Thickness: SCH.80 Class of pipe: III, Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 506-01 (Rev-0- Vents and sounding system)	Manufacturer Certificate	306 meter	918 meter (Length of each pipe is not less than 6 meter)
14.	Size: DN 65 Thickness: SCH.40 Class of pipe: III Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 526-01 (Rev-1- Deck scuppers and Internal Drains system) Dwg: 528-01 (Rev-0- Black and grey water system) Dwg: 541-01 (Rev-0- FO Fill & Transfer system) Dwg: 593-01 (Rev-0- Oily water system)	Manufacturer Certificate	150 meter	450 meter (Length of each pipe is not less than 6 meter)
15.	Size: DN 80 Thickness: SCH.80 Class of pipe: III, Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B Dwg: 506-01 (Rev-0- Vents and sounding system)	Manufacturer Certificate	74 meter	222 meter (Length of each pipe is not less than 6 meter)
16.	Size: DN 80 Thickness: SCH.40 Class of pipe: III Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B	Manufacturer Certificate	222 meter	666 meter (Length of each pipe is not less than 6 meter)

Ser	Carbon Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Dwg: 526-01 (Rev-1- Deck scuppers and Internal Drains system) Dwg: 528-01 (Rev-0- Black and grey water system). Dwg: 541-01 (Rev-0- FO Fill & Transfer system)			
17.	Size: DN 100 Thickness: SCH.40 Pipe Class: Class-III Material: Carbon Steel, Seamless Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B, ASME B36.10 Drawing No: 534-506-02 (Rev-0- FO Overflow system) Dwg: 528-01(Rev-0- Black and grey water system)	Manufacturer Certificate	102 meter	306 meter (Length of each pipe is not less than 6 meter)
18.	Size: DN 125 Thickness: SCH.80 Class of pipe: III, Material: Carbon Steel Pipe Standard: MIL-P-24691/1, Grade B or ASTM A 106/ A 106 M, Grade B, ASME B36.10 Dwg: 506-01(Rev-0- Vents and sounding system)	Manufacturer Certificate	42 meter	126 meter (Length of each pipe is not less than 6 meter)
19.	Size: Out Dia 22mm Thickness: 2mm Class of pipe: I Material: Carbon Steel Standard: DIN 2391/ C ST35 Dwg: Sch-A-W15349, Rev-1 (Hydraulic Schematic & Pipe Connections For Steering Gear System)	LR (Material) Certificate	108 meter	324 meter (Length of each pipe is not less than 6 meter)

C. Stainless Steel Pipe

Ser	Stainless Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
1.	Size: DN 50 Thickness: SCH.STD Class of pipe: III Material: Stainless Steel Pipe Standard: ASTM A213, AISI 316L Dwg: 259-01(Rev-1- Exhaust gas system)	Manufacturer Certificate	24 meter	72 meter (Length of each pipe is not less than 6 meter)
2.	Size: DN 65 Thickness: SCH.80	Manufacturer Certificate	18 meter	54 meter (Length of

Ser	Stainless Steel Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
	Class: III Material: Stainless Steel Pipe Standard: ASTM A312 Type 304L, Seamless Dwg: 506-01 (Rev-0- Vents and sounding system)			each pipe is not less than 6 meter)
3.	Size: DN 100 Thickness: SCH.STD Class of pipe: III Material: Stainless Steel Pipe Standard: ASTM A213, AISI 316L Dwg: 259-01 (Rev-1- Exhaust gas system)	Manufacturer Certificate	01 meter	03 meter (Length of each pipe is not less than 6 meter)
4.	Size: DN 150 Thickness: SCH.STD Class of pipe: III Material: Stainless Steel Pipe Standard: ASTM A213, AISI 316L Dwg: 259-01 (Rev-1- Exhaust gas system)	Manufacturer Certificate	07 meter	21 meter (Length of each pipe is not less than 6 meter)
5.	Size: DN 200 Thickness: SCH.10S Class of pipe: III Material: Stainless Steel Pipe Standard: ASTM A213, AISI 316L Dwg:259-01 (Rev-1- Exhaust gas system)	Manufacturer Certificate	44 meter	132 meter (Length of each pipe is not less than 6 meter)
6.	Size: DN 250 Thickness: SCH.10S Class of pipe: III Material: Stainless Steel Pipe Standard: ASTM A312, Type 321, Seamless, ASME B36.19 Dwg: 259-01(Rev-1- Exhaust gas system)	Manufacturer Certificate	01 meter	03 meter (Length of each pipe is not less than 6 meter)
7.	Size: DN 500 Thickness: SCH.10S Class of pipe: III Material: Stainless Steel Pipe Standard: ASTM A312, Type 321, Seamless, ASME B36.19 Dwg: 259-01 (Rev-1- Exhaust gas system)	Manufacturer Certificate	40 meter	120 meter (Length of each pipe is not less than 6 meter)

d. Copper Alloy Pipe

Ser	Copper Alloy Pipe Specification	Certificate	Length (For 01 vessel)	Length (For 03 vessel)
1.	Tube (Voice Pipe) Size: DN 40 Material: Copper alloy Pipe Standard: Seamless Drawn Brass Tube Copper alloy C26000 MIL-T-20219D Dwg: 435-01(Voice Pipe system)	Manufacturer Certificate	96 meter	288 meter (Length of each pipe is not less than 6 meter)

11. Standard accessories necessary : N/A
12. Documents : Supplier will provide sample class approved material certificate and manufacturer certificate with the offer.
13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
(b) Required manufacturer certificate or statement declaration confirming pipe has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.
14. Installation Supervision : N/A.
15. Test-Trial and commissioning : N/A.
16. Training : N/A.

TECHNICAL SPECIFICATION OF GASKET

1. Name of Equipment : Various Type of Gasket.
2. Purpose : Gasket is a diformable material placed in between two or more mating surfaces to create a leak proof seal and to prevents the passage of fluids, gases, dust between the surfaces. It also ensuring the proper functioning mechanical assembly of piping system.
3. Quantity : As per serial 10.
4. Country of Origin : To be mentioned
5. Manufacturing country : To be mentioned
6. Manufacturer : To be mentioned for each type & Gasket.
7. Type : Marine uses.
8. Year of manufacturer : 2023 or later. The item should be brand new and original
9. Ambient condition
 - a. Temperature : 10⁰ to 45⁰ C
 - b. Relative humidity : up to 98%
 - c. Location : on board ship
10. The Gasket should have the following technical requirements.
 - a. **Gasket Suitable for Sea Water Pipe Line:**

Ser	Gasket Suitable for Sea Water Pipe Line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 50 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-522-02 (Vehicle Deck Sprinkler System)	Manufacturer Certificate	14 Pcs	42 Pcs
2.	Size: DN: 65 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-522-02 (Vehicle Deck Sprinkler System)	Manufacturer Certificate	43 Pcs	129 Pcs
3.	Size: DN: 80 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-522-02 (Vehicle Deck Sprinkler System)	Manufacturer Certificate	33 Pcs	99 Pcs
4.	Size: DN: 100 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-522-02 (Vehicle Deck Sprinkler System) Drawing No: 534-529-02 (Ballast System)	Manufacturer Certificate	260 Pcs	780 Pcs
5.	Size: DN: 125 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-521-01 (Firemain And Washdown System) Drawing No: 534-522-02 (Vehicle Deck Sprinkler System)	Manufacturer Certificate	29 Pcs	87 Pcs

- b. **Gasket for Compressed Air Pipe Line:**

Ser	Gasket for Compressed Air Pipe Line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 15 Material: Aramid Rubber Class-II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	208 Pcs	624 Pcs
2.	Size: DN: 20 Material: Aramid Rubber Class-II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	260 Pcs	780 Pcs
3.	Size: DN: 25 Material: Aramid Rubber Class-II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	16 Pcs	48 Pcs
4.	Size: DN: 32 Material: Aramid Rubber Class-II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	76 Pcs	228 Pcs
5.	Size: DN: 40 Material: Aramid Rubber Class-II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	60 Pcs	180 Pcs
6.	Size: DN: 50 Material: Aramid Rubber Class-II Drawing No: 534-551-01 (Rev-1) (Compressed & Control Air System)	LR (Material) Certificate	10 Pcs	30 Pcs

c. Gasket for Exhaust Pipe Line:

Ser	Gasket for Exhaust Pipe Line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 50 Material Grade: 304L SST Spiral Wound Metal Strip With Graphite Filler And With Centering Ring. Class-III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	14 Pcs	42 Pcs
2.	Size: DN: 100 Material Grade: 304L SST Spiral Wound Metal Strip With Graphite Filler And With Centering Ring. Class-III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	02 Pcs	06 Pcs
3.	Size: DN: 150 Material Grade: 304L SST Spiral Wound Metal Strip With Graphite Filler And With Centering Ring. Class-III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	12 Pcs	36 Pcs

4.	Size: DN: 200 Material Grade: 304L SST Spiral Wound Metal Strip With Graphite Filler And With Centering Ring. Class-III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	28 Pcs	84 Pcs
5.	Size: DN: 250 Material Grade: 304L SST Spiral Wound Metal Strip With Graphite Filler And With Centering Ring. Class-III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	02 Pcs	06 Pcs
6.	Size: DN: 500 Material Grade: 304L SST Spiral Wound Metal Strip With Graphite Filler And With Centering Ring. Class-III Drawing No: 534-259-01 (Exhaust Gas System)	Manufacturer Certificate	28 Pcs	84 Pcs

d. **Gasket for Fuel (Diesel) Pipe Line:**

Ser	Gasket for Fuel (Diesel) Pipe Line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 20 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-261-01 (Fuel Oil Service System)	Manufacturer Certificate	30 Pcs	90 Pcs
2.	Size: DN: 25 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-261-01 (Fuel Oil Service System) Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	40 Pcs	120 Pcs
3.	Size: DN: 50 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-261-01 (Fuel Oil Service System)	Manufacturer Certificate	40 Pcs	120 Pcs
4.	Size: DN: 65 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	30 Pcs	90 Pcs
5.	Size: DN: 80 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-541-01 (FO Fill & Transfer System)	Manufacturer Certificate	50 Pcs	150 Pcs
6.	Size: DN: 100 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-506-02 (Fuel Oil Overflow)	Manufacturer Certificate	70 Pcs	210 Pcs

e. **Gasket for Chilled Water Pipe Line:**

Ser	Gasket for Chilled Water Pipe Line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Name: Size: DN: 20 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III	Manufacturer Certificate	54 Pcs	162 Pcs

	Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)			
2.	Name: Gasket for chilled water pipe line Size: DN: 25 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	12 Pcs	36 Pcs
3.	Size: DN: 50 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	66 Pcs	198 Pcs
4.	Size: DN: 65 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-514-05 (Rev-1) (Chilled Water Diagram for Air-Condition)	Manufacturer Certificate	70 Pcs	210 Pcs

f. **Gasket suitable for deck drain pipe line:**

Ser	Gasket suitable for deck drain pipe line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 40 Material: Aramid Rubber Class-III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	25 Pcs	75 Pcs
2.	Size: DN: 50 Material: Aramid Rubber Class-III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	25 Pcs	75 Pcs
3.	Size: DN: 65 Material: Aramid Rubber Class-III Drawing No: 534-526-01 (Deck Scuppers & Internal Drains Diagram)	Manufacturer Certificate	10 Pcs	30 Pcs

g. **Gasket for black & grey water pipe line:**

Ser	Gasket for black & grey water pipe line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Name: Gasket for black & grey water pipe line Size: DN: 32 Material: Aramid Rubber Class-III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	60 Pcs	180 Pcs
2.	Size: DN: 40 Material: Aramid Rubber Class-III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	100 Pcs	300 Pcs

3.	Size: DN: 50 Material: Aramid Rubber Class-III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	100 Pcs	300 Pcs
4.	Size: DN: 65 Material: Aramid Rubber Class-III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	45 Pcs	135 Pcs
5.	Size: DN: 80 Material: Aramid Rubber Class-III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	40 Pcs	120 Pcs
6.	Size: DN: 100 Material: Aramid Rubber Class-III Drawing No: 534-528-01 (Black & Grey water System Diagram)	Manufacturer Certificate	30 Pcs	90 Pcs

h. Gasket suitable for bilge pipe line:

Ser	Gasket suitable for bilge pipe line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 65 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-529-01 (Bilge System) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	574 Pcs	1722 Pcs
2.	Size: DN: 80 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-529-01 (Bilge System) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	150 Pcs	450 Pcs
3.	Size: DN: 100 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-529-01 (Bilge System) Drawing No: 534-253-01 (Rev-1) (ME & AE Sea Water Cooling System)	Manufacturer Certificate	22 Pcs	66 Pcs

i. Gasket for fresh water pipe line:

Ser	Gasket for fresh water pipe line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 15 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	135 Pcs	405 Pcs

2.	Size: DN: 20 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	90 Pcs	270 Pcs
3.	Size: DN: 25 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	45 Pcs	135 Pcs
4.	Size: DN: 32 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	105 Pcs	315 Pcs
5.	Size: DN: 40 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	54 Pcs	162 Pcs
6.	Size: DN: 50 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	60 Pcs	180 Pcs
7.	Size: DN: 65 Material: Silicon Rubber Gasket Class-III Drawing No: 534-531-01 (FW Generation & Domestic FW System Diagram)	Manufacturer Certificate	36 Pcs	108 Pcs

j. **Gasket for Lub-Oil Pipe Line:**

Ser	Gasket for Lub-Oil Pipe Line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 40 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-543-01 (Lub-oil system)	Manufacturer Certificate	16 Pcs	48 Pcs
2.	Size: DN: 50 Material: Teflon Metallic Wound Gasket Class-III Drawing No: 534-543-01 (Lub-oil system)	Manufacturer Certificate	32 Pcs	96 Pcs

k. **Gasket for oily water pipe line:**

Ser	Gasket for oily water pipe line Specification	Certificate	Qty (For 01 vessel)	Qty (For 03 vessel)
1.	Size: DN: 15 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	40 Pcs	120 Pcs
2.	Size: DN: 25 Material: NBR Gasket (with Brass Net, Oil Proof Rubber)	Manufacturer Certificate	40 Pcs	120 Pcs

	Class-III Drawing No: 534-593-01 (Oily Water System)			
3.	Size: DN: 32 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	46 Pcs	138 Pcs
4.	Size: DN: 40 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	22 Pcs	66 Pcs
5.	Size: DN: 50 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	06 Pcs	18 Pcs
6.	Size: DN: 65 Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Class-III Drawing No: 534-593-01 (Oily Water System)	Manufacturer Certificate	03 Pcs	09 Pcs

11. Standard necessary : N/A
accessories

12. Documents : N/A

13. Certificate : (a) Required LR material certificate is to be provided with material shipment that has been stated in scope of supply in serial -10.

(b) Required manufacturer certificate or statement declaration confirming Gasket has been manufactured in accordance with relevant national or international standard is to be provided with material shipment that has been stated in scope of supply in serial -10 above.

(c) Gasket, except for the exhaust system shall be LR fire test certificate.

14. Installation Supervision : N/A.

15. Test-Trial and : N/A.
commissioning

16. Training : N/A.

BANK GUARANTEE IN LIEU OF EARNEST MONEY

No.....

.....

Guarantee

Dated:

For (mention amount).

Dear Sirs,

Whereas (Name of tender floating organisation) under tender No.
 dated inviting tenders for supplies of (described
 supplies) has agreed to waive the requirement of Cash deposit / Call deposit of US\$ / £ /
 Tk..... being 1% (One percent) of the value of supplies as earnest
 money by the tenderer for making the supplies in accordance with the terms and
 conditions of the tenderer and the tenderer shall provide a bank guarantee for payment for
 the said amount.

And whereas the tenderer M/S.ofhas requested us
 (name of bank) of to issue as guarantee for payment of the amount of
 US\$/£/Tk when called upon.

In consideration of the aforesaid, we (name of bank) of hereby
 undertake and guarantee due performance of the tender by the tenderer M/S.
 of and unconditionally and absolutely
 bind ourselves:

1. To make payment without any question whatsoever of US\$/£/Tk
 to.....(Name of organisation) or as directed by the
 organisation immediately on receipt of demand from the said, organisation in writing, in
 the event the tenderer fail to perform the tender. It is expressly understood that the
 organisation shall be the sole judge for-deciding whether the tenderer has performed the
 tender and fulfilled the terms and conditions of the tender.

2. It is specially stipulated and understood by the bank that any grant of time or
 indulgence to the tenderer without reference to the bank shall not in any manner tend to
 absolve the bank from its liability to make the payment stipulated above under this
 guarantee.

3. The Bank's commitment under this guarantee is limited to an amount of
 US\$/£/Taka(.....) only.

4. The guarantee will remain valid upto

Yours faithfully

..... Bank

(Seal of the Bank)

PERFORMANCE BANK GUARANTEE

Managing Director
 Khulna Shipyard Limited
 Bangladesh Navy
 Khulna, Bangladesh

Bank Guarantee No
 Dated:
 For (Mention amount)

Dear Sirs,

Whereas Khulna Shipyard Ltd., Bangladesh Navy, Khulna hereinafter referred to as the buyers proposed to enter into a contract through a Letter of Intent No BABE(F)-36/2009-2010/ dated 04-07-2010 hereinafter called the contract with (name of the sellers) of hereinafter referred to as the sellers for the supply of (described supplies) in accordance with the terms and conditions of the contract. And whereas the sellers have requested us (name of bank) to issue a guarantee for an amount of US\$ / £ / EURO / TK..... being 10% of the CFR value of the supplies.

In consideration aforesaid (name of bank) hereby undertake and guarantee due observance and performance of the terms and conditions of the contract by the sellers and we unconditionally and absolutely bind ourselves.

To make payment on demand, without demur and without reference to the sellers, of US\$ / £ / EURO / TK to the buyers or as directed by the buyers in writing, if the sellers shall fail to perform the contract or fulfill the terms and conditions thereof.

To keep guarantee valid and in force for 12 (Twelve) months from the start of warranty period but extendable if so required by the buyers.

The guarantee is unconditional and it is expressly understood that the buyers shall be sole judge for deciding whether the sellers have performed the contract and fulfilled the terms and conditions thereof.

It is specifically stipulated and understood by us (name of bank) that any grant of time or indulgence to the sellers without reference to us shall not in any manner tend to absolve us from our liability to make payment as stipulated above under this guarantee.

Our commitment under this guarantee is limited to an amount of US\$ / £ / EURO / TK..... only.

Yours faithfully

..... Bank

(Seal of the Bank)