TENDER DOCUMENT FOR FOREIGN PURCHASE
DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDAR, NARAYANGANJ
Web: www.dewbn.gov.bd, E-mail- commercial@dewbn.gov.bd

Price of tender document Tk. 1000.00 (Taka One Thousand only) (Non-refundable)

TENDER DOCUMENTS FOR SUPPLY OF FITTINGS MATERIALS (SERIAL NO: 1-88), LOT: 03

TENDER ENQUIRY NO- 06.02.6758.165.07.193.25.2196 DATE 13 APRIL 2025

DUE FOR OPENING ON: 07 MAY 2025; AT TIME: 12:30 PM

Dockyard & Engineering Works Ltd. Bangladesh Navy

DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDAR, NARAYANGANJ
Phone: 02-7661480, Fax: 02-7661027
E-mail- commercial@dewltd.gov.bd

IMPORTANT POINTS

1. **TENDER NO:** 06.02.6758.165.07.193.25.2196 Dated 15 April 2025.

2. **DUE FOR OPENING ON:** 07 May 2025; AT Time: 12.30 PM.

3. **PRICE OF TENDER DOCUMENTS:** TK 1,000.00 (Taka One Thousand only) non-refundable.

4. **EARNEST MONEY: 1%** (one) of the total quoted total value, either in Bangladesh currency or equivalent US$/ EURO/ GBP etc., favoring Dockyard & Engineering Works Ltd. in the form of Bank Draft/ Pay Order/ Bank Guarantee.

5. **NAME OF THE COMMODITY:** Fittings Materials (Items Serial No: 1-88), Lot: 03

6. **SOURCE OF FINANCE:** Cash.

7. **TERMS OF SUPPLY:** CFR Chattogram / CPT Hazrat Shahjalal International Airport, Dhaka Bangladesh.

8. **Price:**

   a) Materials and freight should be shown separately.

   b) Freight should be shown/ endorsed on bill of lading.

   c) Freight will be paid at actual against Bill of lading but not exceeding the amount shown in quotation/ offer.

9. **DELIVERY/ SHIPMENT:** 45 (Forty five) days after receiving Irrevocable Letter of Credit (ILOC).

10. **TENDER SHOULD REMAIN VALID**: 60 (Sixty) days from the date of opening.

11. **THE TENDER DOCUMENTS MUST BE WITH SEAL AND SIGN THEREOF ON EACH PAGE:**

The Dockyard & Engineering Works Ltd, BN, Narayanganj invites quotation in duplicate (Marked as "Original" and " Duplicate") from Manufactures/ Principal Suppliers for Supply of the item(s) described in the attached sheet schedule (Annex-B) on firm CFR Chattogram/ Hazrat Shahjalal International Airport, Bangladesh. Quotations will be received by this office up to **12:15** A.M. and will be Opened **12:30** AM 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 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 DOCKYARD & ENGINEERING WORKS LTD, BNGLADESH NAVY, NARAYANGANJ

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:

THE MANAGING DIRECTOR
DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDOR
NARAYANGANJ, BANGLADESH

Tender number 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 tender to THE MANAGING DIRECTOR, DOCKYARD & ENGINEERING WORKS LTD, BANGLADESH NAVY, SONAKANDA, BANDOR, NARAYANGANJ, 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 may quote price for Package or item Wise.

g. Tenders should enclose with the quotation the original proforma Invoice of their principal and the proforma should be based on FIRM CFR 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.

j. The name of the Manufacturers/ Principal suppliers and country/ countries of origin with port of shipment proposed should invariably be indicated.

k. Tenderers must submit the original proforma Invoice of their principals with the quotation 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 is payable to the local agent by the foreign supplier. **Buyers will not pay any extra Commission or otherwise to the local Agent.**

l. 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.

m. Indenting agent should also submit along with the tender valid registration certificate issued by the CCI & E and Bangladesh bank permission. In absence of original certificate photo state copy may serve.

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

p. Tenderers should submit a certificate along with the offer to the effect that they have gone through the instructions and terms and conditions stipulated in the tender documents and have accepted them into. **As a token of such acceptance each page of this tender documents must be signed by the supplier with their SEAL**. If the tender documents are not received accordingly, the quotation may not be considered. In case of disagreement on any point this must be stated clearly in a separate sheet. Tenderers must give full and detailed specification of the items they like to offer. Expressing like as per your specifications should be avoided and will be treated as disqualification.

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 filed in be returned along with **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:**

Necessary LC is to be opened in favour of the principal supplier but payment will be made as per following terms:

a. 80% of total Letter of Credit (LC) value is to be paid on production of necessary shipping documents.

b. Remaining 20% of Letter of Credit (LC) value will be paid after received material receiving report from our main Store.

c. Following documents are to be provided for payment:

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

d. Bank charges in Bangladesh for opening of LC shall be borne by the buyer. Any Bank Charge for revalidation or amendment of the LC on the request of the supplier shall be exclusively borne by the beneficiaries and not by the DOCKYARD & ENGINEERING WORKS LTD. confirmation of letter of credit by foreign bank will not be entertained.

e. Bank charge for withdrawal against LC established by buyer will be borne by the beneficiary.

f. The beneficiary will have to borne the following foreign bank charge:-

(1) Negotiation commission.
(2) Payment Commission.
(3) Postage and Cable charges.
(4) LC confirmation charges/ additional (ADD) confirmation charges.
(5) LC amendment commission/LC extension commission.
(6) LC 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 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 seller,

18. **QUANTITY:**

a. Check of quality, quantity and condition of goods at the discharging port i.e, Chattogram/ Hazrat Shahjalal International Airport will be carried out by the buyer at their cost.

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

c. Descriptive catalogue/ literature duly stamped should be furnished along with the Quotation.

d. The approximate weight of each Bundle should be shown separately on quotation.

e. The DOCKYARD & ENGINEERING WORKS 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. DOCKYARD AND ENGINEERING WORKS 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.

SPECIALLY CLAUSES:

19. **INSPECTION**: The buyer reserves the right to have the stores inspected before shipment by any agency of their choice. In that case inspection charges will be borne by the buyer. The name of the Inspector will be intimated at the time of placement of purchase order. The supplier will be liable to pay any expenses of rejected stores and also for such inspection, which will become payable to the inspector due to multiple intervention/ visits and or fruitless visits at 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 interference. The provision laid down above does 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.

20. **INSURANCE:** Insurance of the consignment after shipment to destination port/ place (up to the buyers premises) will be arranged by buyer. Quotation should, therefore, be exclusive of the insurance charges.

21. **LATE DELIVERY AND LIQUIDATED DAMAGES:** Liquidity damage equivalent to half percent per week or part thereof on the value of the undelivered goods may be realized from the supplier/ contractor.

In specific case where delay in delivery is likely to cause dislocation of work and financial loss, a higher rate of liquidity damage, not over one percents per week or part thereof on the value of the undelivered goods may be charged.

In case of delay in delivery beyond one hundred days for importable item(s), purchase order/ contract may be cancelled in which case the performance guarantee shall be forfeited. On genuine reasons/ grounds beyond the control of the suppliers/contractor, extension of delivery period may, however, be granted by the purchase approving authority without realization of any liquidated damage provided validity of their performance guarantee cover such extension.

22. **GENUINENESS OF THE PRINCIPAL SUPPLIERS:**

The Principal supplier shall have to submit a certificate from the supplier's bankers regarding the bonafide and standing of the supplier.

AND/OR

Certificate from the chamber of Commerce and Industry from the supplier's country regarding its standing as an exporter/manufacturer along with the proforma invoice.

23. **QUALITY CERTIFICATE:** Tenderers should furnish guarantee from the original Manufacturers/ Suppliers/ Sole Agent to the effect that the goods will be of exact specification as laid down in the tender and in the event of placing order with the tenderers the Manufacturers/ Suppliers or their Sole agents will supply materials to them (Tenderers) for supply of the same against their tender. Tenderers for all purposes shall be responsible for the acts of omission and commission of their principal.

24. **EARNEST MONEY:** All bidders must submit earnest money for an amount equivalent to 01% (one percent) of the actual quoted CFR value of the stores either by Bangladesh currency or equivalent to any International Trading currencies favoring the Dockyard & Engineering Works Ltd, in bank draft/pay order /bank guarantee/ which will be issued by any scheduled bank of Bangladesh (Not applicable to enlisted suppliers). In case bank guarantee is submitted, the same should remain valid for 60 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 violets the terms after opening of the tender and before expiry of the validity of the offer, or fails to furnish the required performance bond with in 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-C.

25. **PERFORMANCE BOND:** The successful tenderer will be required to furnish performance bond to the extent 05% of the total CFR value either in the form of pay order/ bank draft/ 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 in liabilities. If the same is submitted by bank guarantee it must remain valid material receiving report (MRR) from our main Store. Performance bond must be furnished within 10(ten) days 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 Annex-D.

26. **WARRANTY:** 18 (Eighteen) Months warranty from the date of acceptance is to be provided. Total 05% of contract price is to be cut as security money which will be paid after the end of warranty period or Bank Guarantee against the same amount is to be provided until the end of warranty period.

27. **INDEMNITY:** The supplier have to indemnity 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 accident or damage which may cause 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.

28. **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 who meets specification and other terms and conditions of the tender document.

29. The buyer has the option to place orders either on CFR Chattogram/ CPT Hazrat Shahjalal International Airport Bangladesh.

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

31. **DISQUALIFICATION OF OFFER :**

a. Telex/ E-mail/ Swift/ Fax offer may be considered provided signed copy of proforma invoice is received within 24 (twenty four) hours from the opening of the tender.

b. 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.

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

32. **SPECIFIC EXPERIENCE:** The principal supplier must have experience of supply of similar goods in Bangladesh and understand the Letter of Credit (LC) process of Bangladesh. The supplier must provide at least 2 letter of credit (LC) references of previous supply record to Bangladesh Buyer to prove its business relation and reliability in Bangladesh market.

33. **TAXES AND OTHER CHARGES:**

a. All duties, taxes and other charges levied on the goods by authorities in buyers 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 country shall be borne by the seller's.

34. **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.

35. **UNDER TAKING:** The Manufacture/ Suppliers shall issue a certificate to be effect that they have shipped the goods strictly conforming to the quality and quantity stipulated in the purchase order and that they will replace defective materials and replenish the short supplied quantity free of charge on demand by the buyers. Such certificate shall form and integral part of the original shipping documents required to be submitted to the bank for drawing of payment against letter of credit by the supplier.

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

37. **FORCE MAJEURE:** Should any circumstance arise preventing either of the contracting parties form wholly or party carrying its obligation under the present contract, namely natural calamities, Strikes, Riots, fire, acts of God, war, Military operation of any Nature, blockades any unforeseen event which is beyond human control, the period stipulated for the performance of this contract shall be extended for as long as the circumstances prevail. Provided that in the even of these circumstances continuing for more than 30(thirty) days, either party shall have the right to refuse to fulfill its obligation under these contract and in such case neither party shall be entitled to indemnification of any loss it may sustain. The party unable to carry out it obligation under this contract shall immediately advise the other party of the commencement and the termination of the circumstances preventing the performance of the contract. A certificate issued by the Chamber of Commerce of the sellers of the buyer's country shall be sufficient proof of the existence and duration of such circumstances.

38. **ARBITRATION:** In the event 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, falling 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 arbitrators in writing before proceeded on the reference of the decision of the sole arbitrator or of two Arbitrators in the writing before proceeded on the reference of the decision of the sole arbitrator or of two arbitrator or the umpire as the case may be shall final , conclusive and binding upon the parties. The provisions of the arbitration Act 2001 and rules their under and any statutory modification their 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 Dockyard & Engineering works Ltd, Bangladesh Navy, reserves the right to incorporate additional terms and condition, if necessary. The Dockyard Engineering & works 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.

Yours faithfully

MOSTOFA KAMAL
Commander BN
For Managing Director

Enclosures:

A.	Format of price Schedule (Annex – A)	- 23 pages
B.	Technical Specification (Annex-B)	- 32 Pages
C.	Format of Bank Guarantee in Lieu of Earnest money (Annex-C)	- 01 page
D.	Format of performance Bank guarantee (Annex-D)	- 01 page

ANNEX-A

Dockyard & Engineering Works Ltd
Bangladesh Navy
Sonakanda, Bandar, Narayanganj

SCHEDULE TO TENDER NO: 06.02.6758.165.07.193.25.2196 DATE 13 APRIL 2025 DUE FOR RETURN BY 07 MAY 2025 AT 12.15 HOURS

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
1	**Flanged Type Air Pipe Head with Floating Ball & Flame Arrester** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	05		
2	**Flanged Type Air Pipe Head with Floating Ball & Flame Arrester** Size/ Dimension: DN125 Materials: Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	05		
3	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	15		
4	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN100 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	15		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
5	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN125 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	20		
6	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN150 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	10		
7	**Flanged Type Air Pipe Head with Flame Arrester** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	05		
8	**Flanged Type Air Reducing Valve (7bar to 2bar)** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)	Nos	05		
9	**Flanged Type Angle Globe Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Fire System	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	(As per Techincal Spacification Annex B)				
10	**Flanged Type Angle Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		
11	**Flanged Type Angle Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GGG40 DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		
12	**Flanged Type Angle Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
13	**Threaded Type Ball Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GG25 System: MDO Transfer & Filling & Overflow System DIN Standard (As per Techincal Spacification Annex B)	Nos	15		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
14	**Flanged Type Ball Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Sanitary Discharge System (As per Techincal Spacification Annex B)	Nos	10		
15	**Threaded Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN15 Materials: GG25 DIN Standard System: Domestic Water System (As per Techincal Spacification Annex B)	Nos	10		
16	**Threaded Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Domestic Water System (As per Techincal Spacification Annex B)	Nos	20		
17	**Flanged Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: Domestic Water System (As per Techincal Spacification Annex B)	Nos	10		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
18	**Flanged Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		
19	**Flanged Type Ball Valve** Pressure Rating: PN16 Size/ Dimension: DN8 Materials: GG25 DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)	Nos	25		
20	**Flanged Type Ball Valve** Pressure Rating: PN16 Size/ Dimension: DN15 Materials: GG25 DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)	Nos	05		
21	**Flanged Type Ball Valve** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)	Nos	10		
22	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN80 Materials: GG25 DIN Standard	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	System: Ballast Water System (As per Techincal Spacification Annex B)				
23	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN100 Materials: GG25 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	05		
24	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: GG25 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	30		
25	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN200 Materials: GG25 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	30		
26	**Manual Type Butterfly Valve** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
27	**Manual Type Butterfly Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		
28	**Manual Type Butterfly Valve** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	10		
29	**Manual Type Butterfly Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	20		
30	**Manual Type Butterfly Valve** Pressure Rating: PN16 Size/ Dimension: DN250 Materials: GG25 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	10		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
31	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		
32	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	20		
33	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		
34	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Sanitary Discharge System (As per Techincal Spacification Annex B)	Nos	10		

Dockyard & Engineering Works Ltd. Bangladesh Navy Date

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
35	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN100 Materials: GG25 DIN Standard System: Sanitary Discharge System (As per Techincal Spacification Annex B)	Nos	05		
36	**Flanged Type Gate Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		
37	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: GGG40 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	05		
38	**Flanged Type Gate Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	10		
39	**Flanged Type Globe Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GG25 DIN Standard	Nos	10		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)				
40	**Flanged Type Globe Valve** Pressure Rating: PN6 Size/ Dimension: DN20 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	05		
41	**Threaded Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		
42	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		
43	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Oily Water & Sludge System	Nos	25		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	(As per Techincal Spacification Annex B)				
44	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	05		
45	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Sanitary Discharge System (As per Techincal Spacification Annex B)	Nos	05		
46	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN10 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: Domestic Water System (As per Techincal Spacification Annex B)	Nos	05		
47	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	45		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
48	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	15		
49	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN80 Materials: GG25 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
50	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GGG40 DIN Standard System: Sanitary Discharge System (As per Techincal Spacification Annex B)	Nos	05		
51	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN200 Materials: GGG40 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	05		
52	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GGG40	Nos	10		

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Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)				
53	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
54	**Flanged Type Non-Return Valve** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: GG25 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	05		
55	**Flanged Type Non-Return Valve** Pressure Rating: PN6 Size/ Dimension: DN200 Materials: GG25 DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	05		
56	**Flanged Type Non-Return Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
57	**Flanged Type Pressure Regulator Valve (Set pressure 4bar)** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
58	**Flanged Type Pressure Relief Valve (Set pressure 2.2bar)** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	05		
59	**Threaded Type Quick Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GGG40 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		
60	**Flanged Type Quick Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
61	**Flanged Type Quick Closing Valve** Pressure Rating: PN10 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: Quick Closing Valve System (As per Techincal Spacification Annex B)	Nos	10		
62	**Flanged Type Relief Valve (Set pressure 2.2bar)** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)	Nos	05		
63	**Flanged Type Relief Valve (Set pressure 4.4bar)** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		
64	**Flanged Type Relief Valve (Set pressure 4.4bar)** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
65	**Safety Valve (Set pressure 4.4bar)** Pressure Rating: PN10 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Domestic Water System (As per Techincal Spacification Annex B)	Nos	10		
66	**Flanged Type Self-Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN20 Materials: GGG40 DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	10		
67	**Flanged Type Self-Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: Lube Oil System (As per Techincal Spacification Annex B)	Nos	05		
68	**Threaded Type Solenoid Valve** Pressure Rating: PN10 Size/ Dimension: DN15 Materials: GG25 DIN Standard System: Domestic Water System (As per Techincal Spacification Annex B)	Nos	10		
69	**Flanged Type Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GG25	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	DIN Standard System: Oily Water & Sludge System (As per Techincal Spacification Annex B)				
70	**Flanged Type Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System (As per Techincal Spacification Annex B)	Nos	10		
71	**Flanged Type Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN250 Materials: GGG40 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
72	**Flanged Type Expansion Joint** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: Galvanized Steel DIN Standard System: Ballast Water System (As per Techincal Spacification Annex B)	Nos	25		
73	**Flanged Type Expansion Joint** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	10		

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Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
74	**Flanged Type Expansion Joint** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
75	**Flanged Type Expansion Joint** Pressure Rating: PN16 Size/ Dimension: DN40 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		
76	**Flanged Type Expansion Joint** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		
77	**Flanged Type Expansion Joint** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		
78	**Flush Type Threaded Sounding Pipe Head** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System	Nos	40		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	(As per Techincal Spacification Annex B)				
79	**Self-Closing Type Threaded Sounding Pipe Head** Size/ Dimension: DN50 Materials: Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	05		
80	**Self-Closing Type Threaded Sounding Pipe Head** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System (As per Techincal Spacification Annex B)	Nos	10		
81	**Flanged Type Mud Box** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Fire System (As per Techincal Spacification Annex B)	Nos	05		
82	**Flanged Type Mud Box** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GGG40 DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		
83	**Strum Box** Size/ Dimension: DN25 Materials: Galvanized Steel DIN Standard	Nos	10		

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Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
	System: Oily Water & Sludge System (As per Techincal Spacification Annex B)				
84	**Strum Box** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	15		
85	**Flanged Type Y-Filter** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: Steel DIN Standard System: MDO Transfer & Filling & Overflow System (As per Techincal Spacification Annex B)	Nos	05		
86	**Flanged Type Sea Water Filter** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		
87	**Flanged Type Sea Water Filter** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System (As per Techincal Spacification Annex B)	Nos	05		

Ser	DESCRIPTION	UNIT	QTY	UNIT PRICE (FOB)	TOTAL PRICE (FOB)
88	**Flanged Type Sea Water Filter** Pressure Rating: PN16 Size/ Dimension: DN250 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System (As per Techincal Spacification Annex B)	Nos	05		

FOB including local agent commission as per manufacture/ principal/ supplier/ quotation/ proforma invoice Price					
				Freight Cost	
CFR Chattogram / CPT Hazrat Shahjalal International Airport, Dhaka Bangladesh Total Price					

Inword:

TERMS OF CONDITIONS:

01	Name and Address of Manufacturer's	To be mentioned	
02	Name and Address of principal	To be mentioned.	
03	Name and Address of Local Agent	To be mentioned.	
04	Name of the Manufacturer & Authorization Certificate	To be mentioned.	
05	Country of Origin	To be mentioned.	
06	Country of Manufacturer	To be mentioned.	
07	Certification	Certificate to be provided as per Technical Specification.	
08	Offer validity	60 days from the date of opening	
09	Port of shipment	To be mentioned	
10	Part Shipment	Not allowed	
11	Transshipment	Allowed	
12	Shipment / Delivery	45 days after receiving LC.	
13	Original Proforma Invoice	To be provided	
14	Earnest Money	To be provided	

15	Payment	a. 80% of total Letter of Credit (LC) value is to be paid on production of necessary shipping documents. b. Remaining 20% of Letter of Credit (LC) value will be paid after received material receiving report from our main Store.	
16	All other terms and conditions as laid down in tender documents to be followed.		

Your quotation No:
the tendered:
Date:

Signature, name and address

ANNEX- B

TECHNICAL SPECIFICATION

SL No	Technical Description, Specification and standard required	UNIT	QTY	Specification offered by Bidder
1	**Flanged Type Air Pipe Head with Floating Ball & Flame Arrester** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
2	**Flanged Type Air Pipe Head with Floating Ball & Flame Arrester** Size/ Dimension: DN125 Materials: Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
3	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	15	
4	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN100 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	15	
5	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN125 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	20	
6	**Flanged Type Air Pipe Head with Floating Ball** Size/ Dimension: DN150 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	10	

7	**Flanged Type Air Pipe Head with Flame Arrester** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
8	**Flanged Type Air Reducing Valve (7bar to 2bar)** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
9	**Flanged Type Angle Globe Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
10	**Flanged Type Angle Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	05	
11	**Flanged Type Angle Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GGG40 DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	05	
12	**Flanged Type Angle Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	05	

13	**Threaded Type Ball Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GG25 System: MDO Transfer & Filling & Overflow System DIN Standard Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	15	
14	**Flanged Type Ball Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Sanitary Discharge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
15	**Threaded Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN15 Materials: GG25 DIN Standard System: Domestic Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
16	**Threaded Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Domestic Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	20	
17	**Flanged Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: Domestic Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
18	**Flanged Type Ball Valve** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	

19	**Flanged Type Ball Valve** Pressure Rating: PN16 Size/ Dimension: DN8 Materials: GG25 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	25	
20	**Flanged Type Ball Valve** Pressure Rating: PN16 Size/ Dimension: DN15 Materials: GG25 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
21	**Flanged Type Ball Valve** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
22	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN80 Materials: GG25 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
23	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN100 Materials: GG25 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
24	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: GG25 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	30	

25	**Manual Type Butterfly Valve** Pressure Rating: PN6 Size/ Dimension: DN200 Materials: GG25 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	30	
26	**Manual Type Butterfly Valve** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
27	**Manual Type Butterfly Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
28	**Manual Type Butterfly Valve** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
29	**Manual Type Butterfly Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	20	
30	**Manual Type Butterfly Valve** Pressure Rating: PN16 Size/ Dimension: DN250 Materials: GG25 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	

31	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
32	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	20	
33	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
34	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Sanitary Discharge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
35	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN100 Materials: GG25 DIN Standard System: Sanitary Discharge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
36	**Flanged Type Gate Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate	Nos	05	

	HS code no: To be mentioned			
37	**Flanged Type Gate Valve** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: GGG40 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
38	**Flanged Type Gate Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	10	
39	**Flanged Type Globe Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
40	**Flanged Type Globe Valve** Pressure Rating: PN6 Size/ Dimension: DN20 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
41	**Threaded Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
42	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned	Nos	10	

	Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned			
43	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Oily Water & Sludge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	25	
44	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
45	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Sanitary Discharge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
46	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN10 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: Domestic Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
47	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	45	
48	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System; M/E & Generator Cooling Water System	Nos	15	

	Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned			
49	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN80 Materials: GG25 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
50	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GGG40 DIN Standard System: Sanitary Discharge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	05	
51	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN200 Materials: GGG40 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	05	
52	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GGG40 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	10	
53	**Flanged Type In-line Non-Return Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: BV Product Certificate HS code no: To be mentioned	Nos	05	
54	**Flanged Type Non-Return Valve** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: GG25 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned	Nos	05	

	Certification: Manufacturer Certificate HS code no: To be mentioned			
55	**Flanged Type Non-Return Valve** Pressure Rating: PN6 Size/ Dimension: DN200 Materials: GG25 DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
56	**Flanged Type Non-Return Valve** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
57	**Flanged Type Pressure Regulator Valve (Set pressure 4bar)** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
58	**Flanged Type Pressure Relief Valve (Set pressure 2.2bar)** Pressure Rating: PN6 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
59	**Threaded Type Quick Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN8 Materials: GGG40 DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
60	**Flanged Type Quick Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: MDO Transfer & Filling & Overflow	Nos	10	

	System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned			
61	**Flanged Type Quick Closing Valve** Pressure Rating: PN10 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: Quick Closing Valve System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
62	**Flanged Type Relief Valve (Set pressure 2.2bar)** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
63	**Flanged Type Relief Valve (Set pressure 4.4bar)** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: GG25 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
64	**Flanged Type Relief Valve (Set pressure 4.4bar)** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: GG25 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
65	**Safety Valve (Set pressure 4.4bar)** Pressure Rating: PN10 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Domestic Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
66	**Flanged Type Self-Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN20 Materials: GGG40 DIN Standard System: MDO Transfer & Filling & Overflow System	Nos	10	

	Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned			
67	**Flanged Type Self-Closing Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GGG40 DIN Standard System: Lube Oil System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
68	**Threaded Type Solenoid Valve** Pressure Rating: PN10 Size/ Dimension: DN15 Materials: GG25 DIN Standard System: Domestic Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
69	**Flanged Type Stop Valve** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: GG25 DIN Standard System: Oily Water & Sludge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
70	**Flanged Type Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN25 Materials: GG25 DIN Standard System: Compressed Air System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
71	**Flanged Type Stop Valve** Pressure Rating: PN16 Size/ Dimension: DN250 Materials: GGG40 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
72	**Flanged Type Expansion Joint** Pressure Rating: PN6 Size/ Dimension: DN125 Materials: Galvanized Steel DIN Standard System: Ballast Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned	Nos	25	

	Certification: Type Approved Certificate HS code no: To be mentioned			
73	**Flanged Type Expansion Joint** Pressure Rating: PN10 Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	10	
74	**Flanged Type Expansion Joint** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
75	**Flanged Type Expansion Joint** Pressure Rating: PN16 Size/ Dimension: DN40 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
76	**Flanged Type Expansion Joint** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
77	**Flanged Type Expansion Joint** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
78	**Flush Type Threaded Sounding Pipe Head** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	40	

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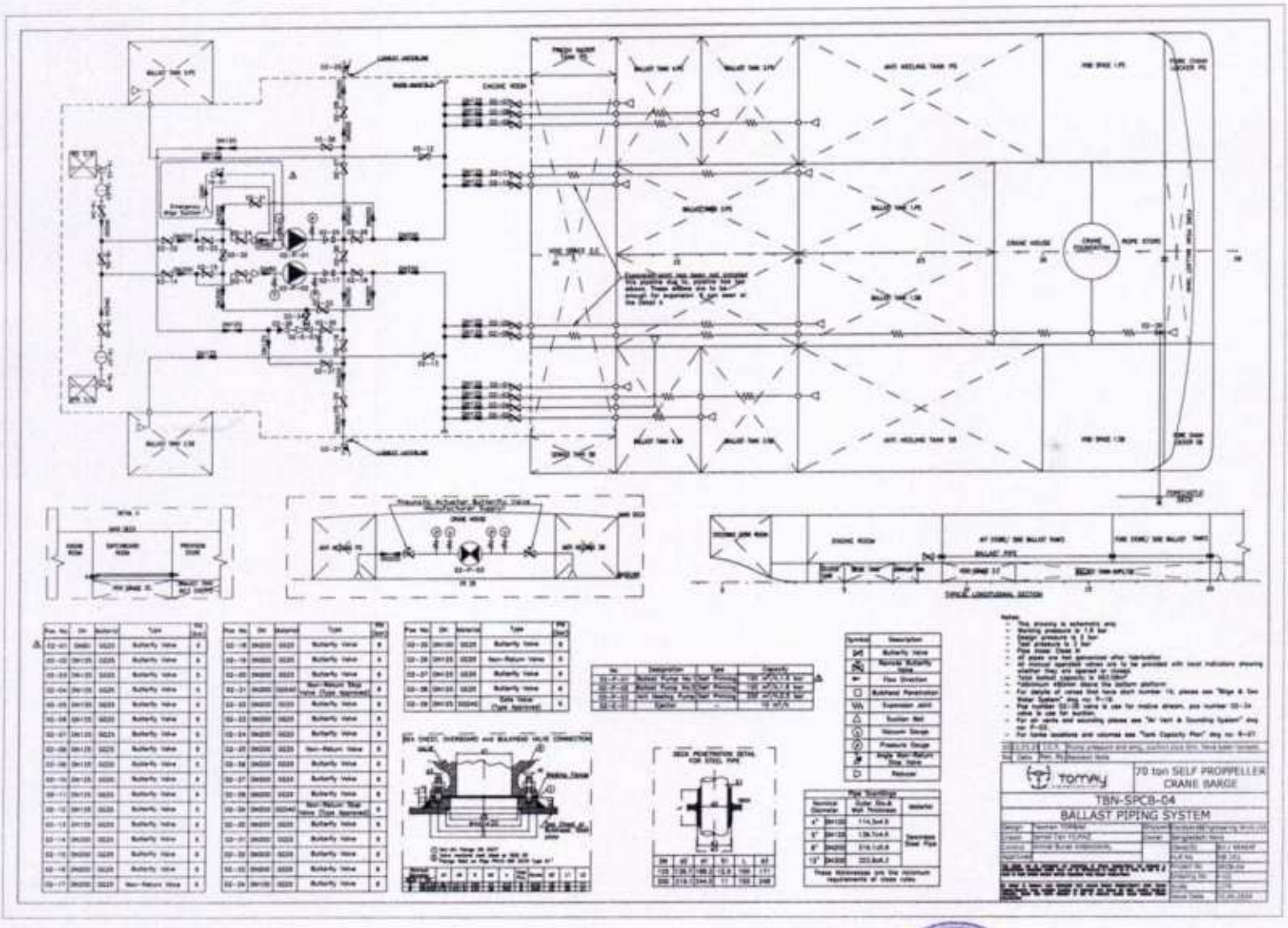
79	**Self-Closing Type Threaded Sounding Pipe Head** Size/ Dimension: DN50 Materials: Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
80	**Self-Closing Type Threaded Sounding Pipe Head** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Air Vent & Sounding System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
81	**Flanged Type Mud Box** Pressure Rating: PN10 Size/ Dimension: DN65 Materials: GGG40 DIN Standard System: Fire System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
82	**Flanged Type Mud Box** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: GGG40 DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Type Approved Certificate HS code no: To be mentioned	Nos	05	
83	**Strum Box** Size/ Dimension: DN25 Materials: Galvanized Steel DIN Standard System: Oily Water & Sludge System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	10	
84	**Strum Box** Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	15	
85	**Flanged Type Y-Filter** Pressure Rating: PN6 Size/ Dimension: DN40 Materials: Steel	Nos	05	

	DIN Standard System: MDO Transfer & Filling & Overflow System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned			
86	**Flanged Type Sea Water Filter** Pressure Rating: PN16 Size/ Dimension: DN50 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
87	**Flanged Type Sea Water Filter** Pressure Rating: PN16 Size/ Dimension: DN65 Materials: Galvanized Steel DIN Standard System: M/E & Generator Cooling Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	
88	**Flanged Type Sea Water Filter** Pressure Rating: PN16 Size/ Dimension: DN250 Materials: Galvanized Steel DIN Standard System: Bilge & Sea Water System Country of Origin: To be mentioned Country of Manufacturer: To be mentioned Certification: Manufacturer Certificate HS code no: To be mentioned	Nos	05	

Compliance Statement. A compliance statement (in a tabular format) fulfilling all the requirement of the tender is to be submitted for evaluation of the quotations. Stating mere **'Yes'** or **'No'** or **'Complied'** will not suffice and detailed description/ information as required is to be given. An incomplete compliance statement may attribute to cancellation of the offer. If any clause of this specification does not commensurate with offered laser guided alignment machine, the deviation has to be spelt out clearly.

Enclosures:

a.	Ballast Water System Rev-03	- 01 pages
b.	Ballast Tanks Air Vent&Sounding System Rev-01	- 01 pages
c.	MDO Filling&Transfer&Overflow System Rev-02	- 01 pages
d.	Lub Oil System Rev-00	- 01 pages
e.	Compressed Air System Rev-01	- 01 pages
f.	Main Engine Cooling Water System Rev-00	- 01 pages
g.	Bilge&Sea Water System Rev-01	- 01 pages
h.	Oily Water&Sludge System Rev-00	- 01 pages
j.	Fire System Rev.01)-BV	- 06 pages
k.	Sanitary Discharge System Rev-00	- 01 pages
m.	Domestic Water System Rev-00	- 01 pages
n.	Quick Closing Valve System Rev-00	- 01 pages



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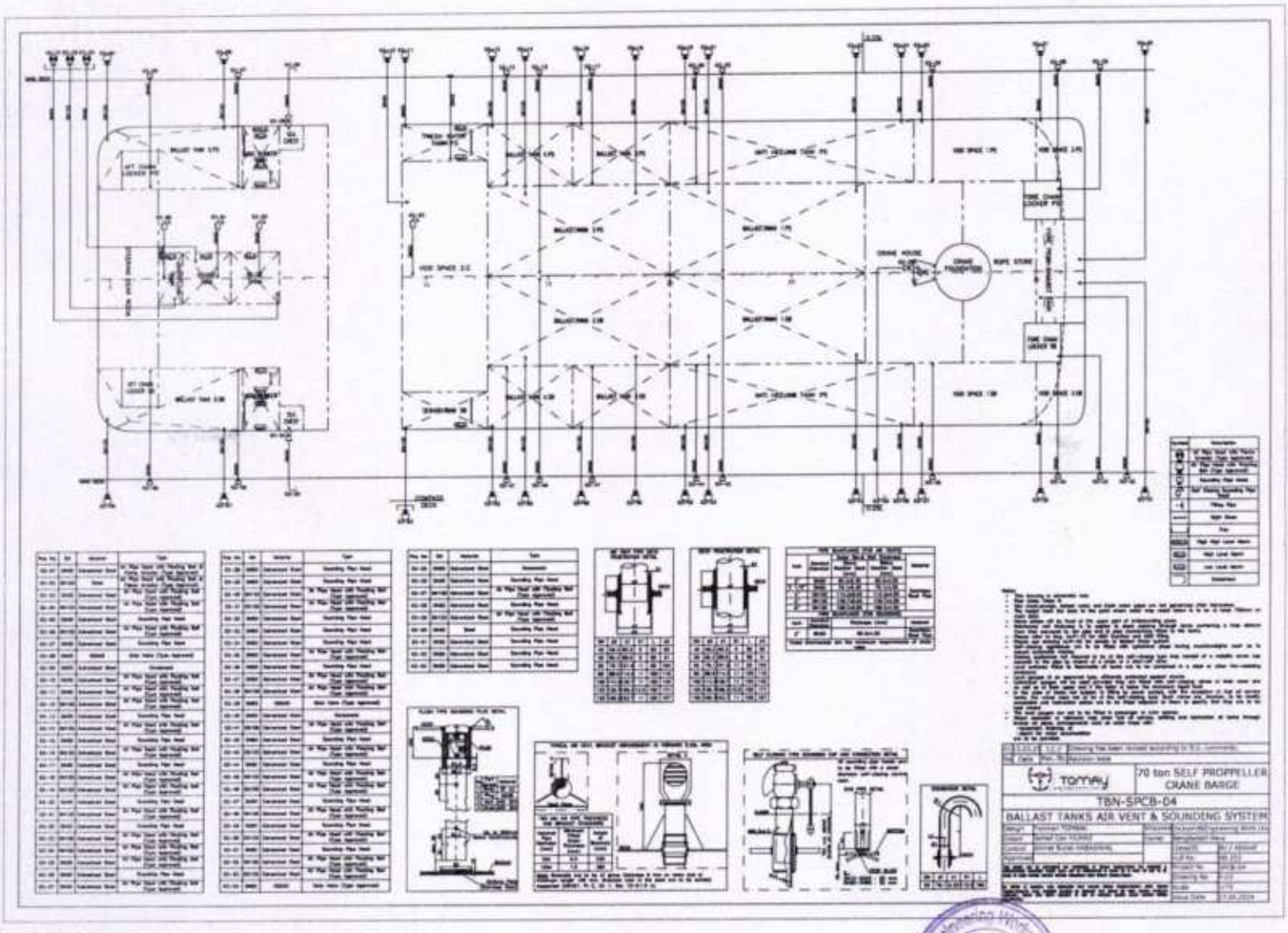

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Notes:

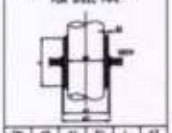
- This drawing is schematic only
- Working pressure is 3 bar
- Design pressure is 4 bar
- Test pressure is 4.5 bar
- Design temperature is 50°C
- Pipe class: Class III
- Fuel lines may not pass through tanks containing freshwater, drinking water, lubricating oil or thermal oil
- Fuel lines are not to be laid directly above or in the vicinity of boilers, turbines or equipment with high surface temperatures (over 220 °C) or in any of other sources of ignition
- Flanges and screwed socket connections in fuel oil lines are to be screened or otherwise suitably protected to avoid, as far as practicable, oil spray or oil leakages onto hot surfaces, into machinery air intakes, or other sources of ignition. The number of detachable pipe connections is to be limited. In general, flanges connections according to recognized standards are to be used
- Flanges and screwed socket connections in fuel oil lines which by directly above hot surfaces or other sources of ignition are to be screened and provided with drainage arrangements
- Flanges and screwed socket connections in fuel oil lines with a maximum allowable working pressure of more than 0.18 N/mm² and either about 2 meters from hot surfaces or other sources of ignition and about eight of line are to be screened. Drainage arrangements need not to be provided
- Flanges and screwed socket connections in fuel oil lines with a maximum allowable working pressure of less than 0.18 N/mm² and either about 2 meters from hot surfaces or other sources of ignition are to be assessed individually taking into account working pressure, type of coupling and possibility of failure
- Flanges and screwed socket connections in fuel oil lines with a maximum allowable working pressure of more than 1.6 N/mm² need normally to be screened
- Shut-off valves in fuel lines in the machinery spaces are to be operable from above the floor plates
- For filling lines entering at the top of a tank and with inside extension towards the bottom, air holes shall be drilled in the pipe near the connection in order to avoid the siphoning effect
- The valves on tanks are to be located on the tank itself
- Fuel oil sampling points to be used should fulfil all of the following conditions:
  - Be easily and safely accessible
  - Each sampling point should be located in a position shielded from any heated surface or electrical equipment and the shielding device or construction should be sturdy enough to endure leaks, splashes or spray under design pressure of the fuel oil supply line so as to preclude impingement of fuel oil onto such surface or equipment
  - The sampling arrangement should be provided with suitable drainage to the drain tank or other safe location

- For oil vents and sounding please see "Air Vent & Sounding System" dwg no: P-03.
- For drip tray and leak lines please see "Drip Tray & Leak Lines arrangement" dwg no: P-29.
- For tanks locations and volumes see "Tank Capacity Plan" dwg no: P-07.
- *: Inlets and outlets of the main engines and gensets will be connected according to the supplier's recommendations.

SERVICE TANK CAPACITY CALCULATION
Main Engine: 500kW, 213 g/kWh
2 M/E, 8 hours=2.037m³
Diesel Generators: 6kW, 198 g/kwh
2 D/G, 8 hours=0.217m³
Required service tank capacity: 2.725m³
Actual service tank capacity: 2.800m³

OVERFLOW TANK CAPACITY
Transfer pump: 3m³/h
Required capacity: 0.5m³
Actual capacity: 0.360m³

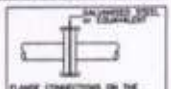
DECK PENETRATION DETAIL FOR STEEL PIPE



DN	d2	d1	S1	L	d3
25	33.7	42.4	4	50	65
40	48.3	60.3	5	60	82
50	60.3	88.9	5	60	91
65	76.1	101.6	11	60	104
80	88.9	114.3	11	100	119
100	114.3	139.7	11	100	142
125	139.7	168.3	12.5	100	171

Pipe Scantlings		
Nominal Diameter	Outer Dia.& Wall Thickness	Material
1/4"	DN8	13.7x1.85
1/2"	DN15	21.3x2.00
3/4"	DN20	26.7x2.00
1"	DN25	33.4x2.00
1 1/2"	DN40	48.3x2.30
2"	DN50	60.3x2.30
3 1/2"	DN80	88.9x2.80
4"	DN100	114.3x3.20	Seamless Steel Pipe
Pipe Scantlings (Overflow Pipes)		
2 1/2"	DN65	76.1x4.50	Seamless Steel Pipe
6"	DN150	114.3x4.50
Pipe thickness values given above table are minimum according to BV Rules.		

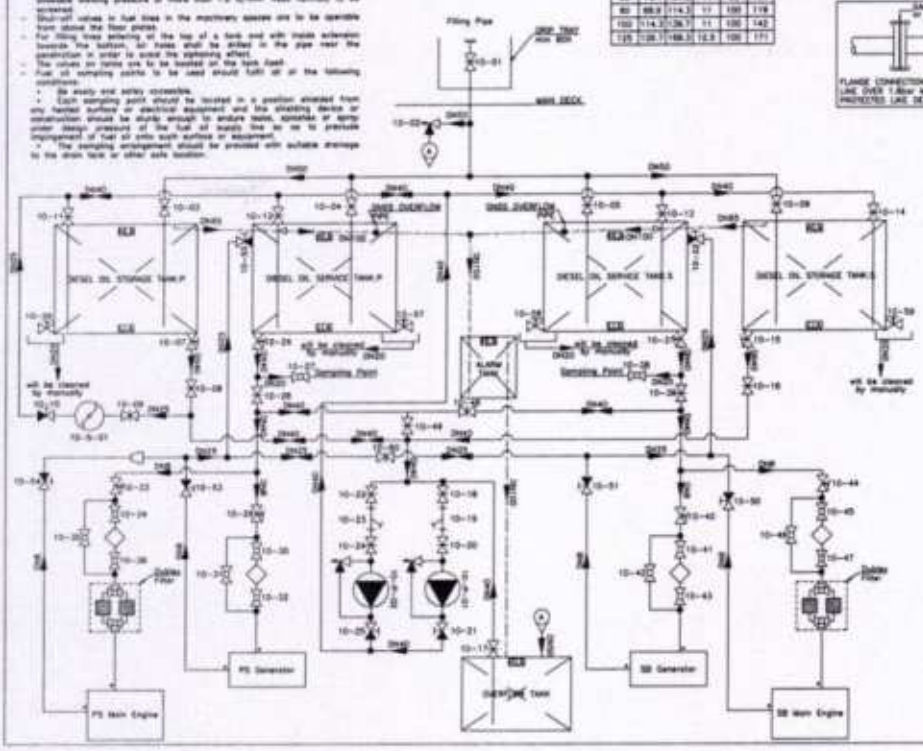
No.	Description	Type	Capacity
10-P-01	D.O. Transfer Pump	Gear Type	3 m³/h, 3 bar
10-P-02	D.O. Transfer Pump	Gear Type	3 m³/h, 3 bar
10-S-01	D.O. Separator with Pump	Gear Type	0.6 m³



FLANGE CONNECTIONS ON THE LINE OVER 1.6bar MUST BE PREPARED LIKE DETAILED ABOVE

Pipe No	DN	Material	Type	PN (bar)
10-01	DN50	GG25	Gate Valve	6
10-02	DN50	GG25	"Pressure Relief" Valve (Set 3.0bar)	6
10-03	DN50	GG25	Gate Valve	6
10-04	DN50	GG25	Gate Valve	6
10-05	DN50	GG25	Gate Valve	6
10-06	DN50	GG25	Gate Valve	6
10-07	DN40	GGG40	Quick Closing Valve	6
10-08	DN40	GG25	Gate Valve	6
10-09	DN25	GG25	Gate Valve	6
10-10	DN25	GG25	Non-Return Stop Valve	6
10-11	DN25	GG25	Gate Valve	6
10-12	DN25	GG25	Gate Valve	6
10-13	DN25	GG25	Gate Valve	6
10-14	DN25	GG25	Gate Valve	6
10-15	DN40	GGG40	Quick Closing Valve	6
10-16	DN40	GG25	Gate Valve	6
10-17	DN40	GG25	Gate Valve	6
10-18	DN40	GG25	Gate Valve	6
10-19	DN40	Steel	Y-Filter	6
10-20	DN40	GG25	Gate Valve	6
10-21	DN40	GG25	Non-Return Stop Valve	6
10-22	DN40	GG25	Gate Valve	6
10-23	DN40	Steel	Y-Filter	6
10-24	DN40	GG25	Gate Valve	6
10-25	DN40	GG25	Non-Return Stop Valve	6
10-26	DN40	GGG40	Quick Closing Valve	6
10-27	DN20	GG25	Globe Valve	6
10-28	DN40	GG25	Gate Valve	6

Pipe No	DN	Material	Type	PN (bar)
10-29	DN8	GGG40	Quick Closing Valve	6
10-30	DN8	GG25	Globe Valve	6
10-31	DN8	GG25	Globe Valve	6
10-32	DN8	GG25	Globe Valve	6
10-33	DN8	GGG40	Quick Closing Valve	6
10-34	DN8	GG25	Ball Valve	6
10-35	DN8	GG25	Ball Valve	6
10-36	DN8	GG25	Ball Valve	6
10-37	DN40	GGG40	Quick Closing Valve	6
10-38	DN25	GG25	Globe Valve	6
10-39	DN40	GG25	Gate Valve	6
10-40	DN8	GGG40	Quick Closing Valve	6
10-41	DN8	GG25	Globe Valve	6
10-42	DN8	GG25	Globe Valve	6
10-43	DN8	GG25	Globe Valve	6
10-44	DN8	GGG40	Quick Closing Valve	6
10-45	DN8	GG25	Ball Valve	6
10-46	DN8	GG25	Ball Valve	6
10-47	DN8	GG25	Ball Valve	6
10-48	DN40	GG25	Gate Valve	6
10-49	DN40	GG25	Gate Valve	6
10-50	DN8	GG25	Non-Return Stop Valve	6
10-51	DN8	GG25	Non-Return Stop Valve	6
10-52	DN25	GG25	Non-Return Stop Valve	6
10-53	DN8	GG25	Non-Return Stop Valve	6
10-54	DN8	GG25	Non-Return Stop Valve	6
10-55	DN25	GG25	Non-Return Stop Valve	6
10-56	DN20	GGG40	Self-Closing Valve	6
10-57	DN20	GGG40	Self-Closing Valve	6
10-58	DN20	GGG40	Self-Closing Valve	6
10-59	DN20	GGG40	Self-Closing Valve	6



Symbol	Description
	Gate Valve
	Non Return Stop Valve
	Quick Closing Valve
	Self Closing Valve
	Ball Valve
	Pressure Relief Valve
	Flow Direction
	Pump
	Fuel / Water Filter
	High Level Alarm
	Low Level Alarm
	Reducer

FUEL VALVES TANK CONNECTION DETAILS
VALVE FITTING DIMENSIONS (mm)(PN10)

d2	d1	d3	d4	d5	t
15	95	70	65	4xM12	16
20	105	75	65	4xM12	16
25	115	85	65	4xM12	16
40	150	110	85	4xM16	20
50	165	125	110	4xM16	20

Threaded sleeve joints with parallel thread not allowed for:
- pipes with outside diameter of more than 60.3 mm
- pipes inside tanks
- piping systems conveying flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.

FLANGE STANDARD IS DN2576

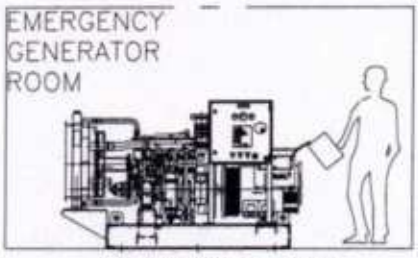
Rev	Date	Rev. Explanation Note	
tomay		70 ton SELF PROPPELLER CRANE BARGE	
TBN-SPCB-04			
FDO TRANSFER & FILLING & OVERFLOW SYSTEM			
Drawn	Ramesh TERMAN	Drawing No	TBN-SPCB-04
Scale		Sheet No	1
Date	1.07.2014		

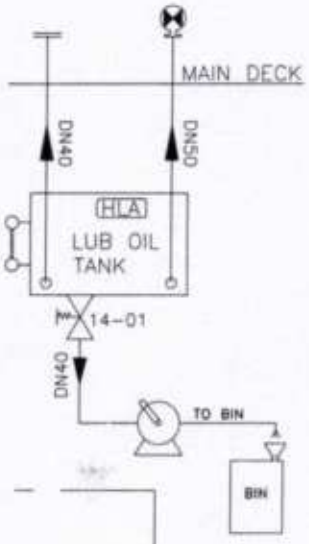
Dockyard & Engineering Works Ltd. Bangladesh Navy

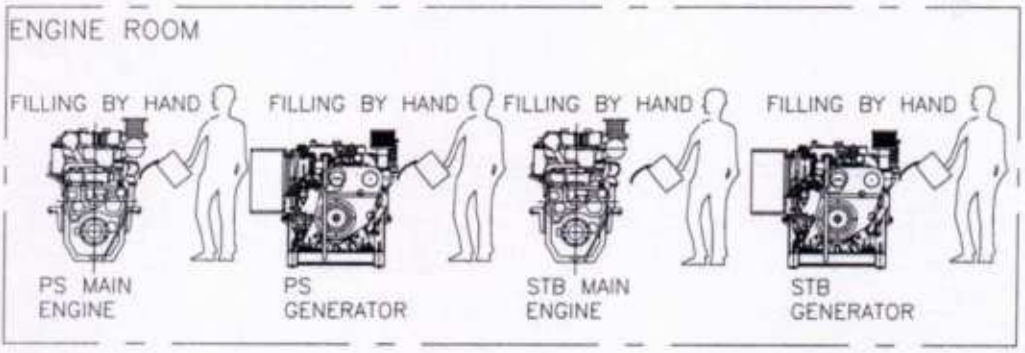
Pos. No.	DN	Material	Type
14-01	DN40	GGG40	Self Closing Valve
14-02	DN50	STEEL	Air Pipe Head with Flame Arrester (Type Approved)

Pipe Scantlings		
Nominal Diameter	Outer Dia.& Wall Thickness	Material
1 1/2" DN40	48.3x2.3	Seamless Steel
2" DN50	60.3x4.5	

DESCRIPTION	SYMBOL
HAND PUMP	
HIGH LEVEL ALARM	HLA
SELF CLOSING VALVE	
AIR PIPE HEAD WITH FLAME ARRESTER	
LEVEL TUBE	







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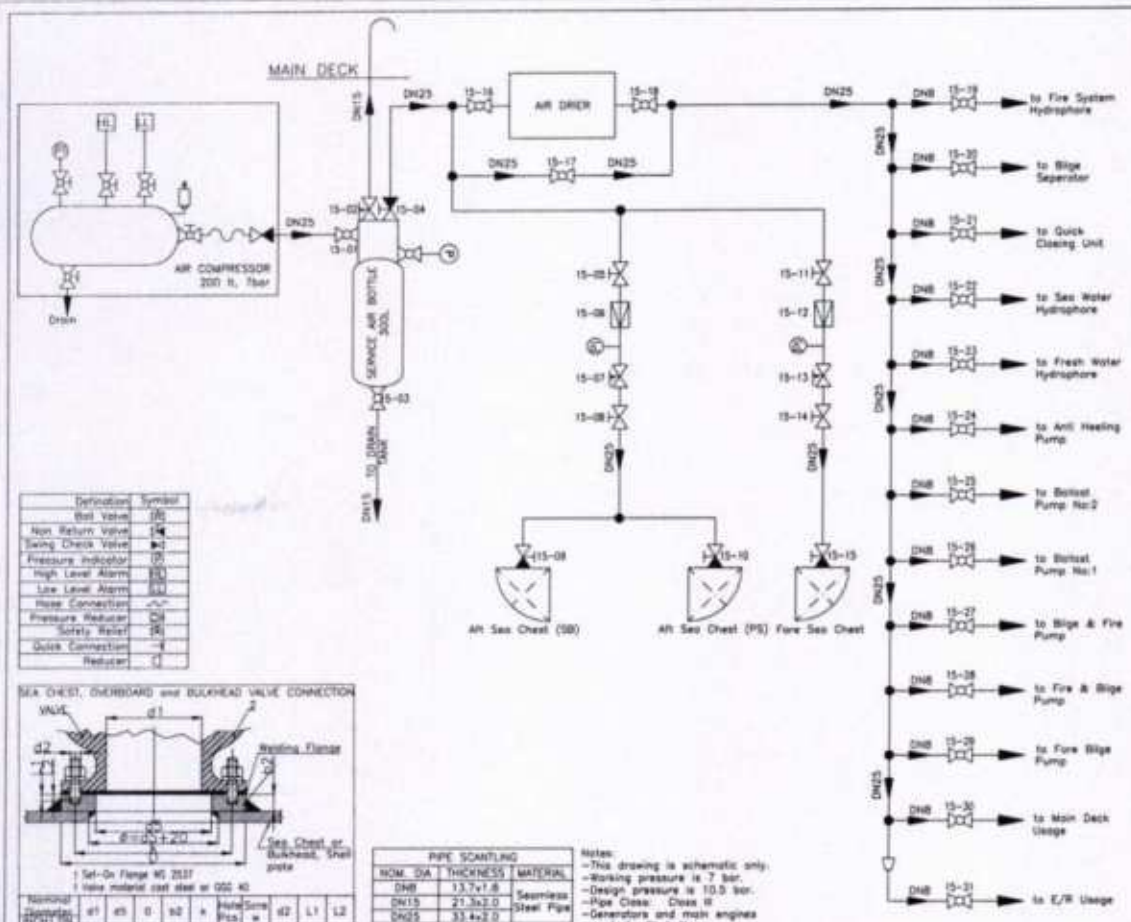
TOMAY

TBN-SPCB-04	Design	Teoman TOMBAK	Shipyard	Class	BV / 484641	Revision No	00
	Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
LUBRICATION OIL SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	23.01.2025
	Approved		Bangladesh Navy	Drawing No	P-12	Scale	1/50

Dockyard & Engineering Works Ltd. * Bangladesh Navy *



Definition	Symbol
Ball Valve	
Non Return Valve	
Swing Check Valve	
Pressure Indicator	
High Level Alarm	
Low Level Alarm	
Hose Connection	
Pressure Reducer	
Safety Relief	
Quick Connection	
Reducer	

SEA CHEST, OVERBOARD and BULKHEAD VALVE CONNECTION

1 Set-On Flange NS 2537
1 Valve material cast steel or GGG 40

Nominal Diameter DN	d1	d3	D	b2	k	Hole Pcs.	Screw w	d2	L1	L2
1/2"	DN15	21.3	22	95	25	65	4	M12	14	18	13

PIPE SCANTLING		
NOM. DIA	THICKNESS	MATERIAL
DN8	13.7x1.8	Seamless Steel Pipe
DN15	21.3x2.0	
DN25	33.4x2.0	

Notes:
-This drawing is schematic only.
-Working pressure is 7 bar.
-Design pressure is 10.0 bar.
-Pipe Class: Class III
-Generators and main engines are start with battery.

Pos No.	DN	Material	Type	PN (bar)
15-01	DN25	GG25	Ball Valve	16
15-02	DN25	GG25	Ball Valve	16
15-03	DN15	GG25	Ball Valve	16
15-04	DN25	GG25	Non-Return Stop Valve	16
15-05	DN25	GG25	Stop Valve	16
15-06	DN25	GG25	Air Reducing Valve (7bar to 2bar)	16
15-07	DN25	GG25	Relief Valve (set press. 2.2 bar)	16
15-08	DN25	GG25	Stop Valve	16
15-09	DN25	GGG40	Non-Return Stop Valve	16
15-10	DN25	GGG40	Non-Return Stop Valve	16
15-11	DN25	GG25	Stop Valve	16
15-12	DN25	GG25	Air Reducing Valve (7bar to 2bar)	16
15-13	DN25	GG25	Relief Valve (set press. 2.2 bar)	16
15-14	DN25	GG25	Stop Valve	16
15-15	DN25	GGG40	Non-Return Stop Valve	16
15-16	DN25	GG25	Ball Valve	16
15-17	DN25	GG25	Ball Valve	16
15-18	DN25	GG25	Ball Valve	16
15-19	DN8	GG25	Ball Valve	16
15-20	DN8	GG25	Ball Valve	16
15-21	DN8	GG25	Ball Valve	16
15-22	DN8	GG25	Ball Valve	16
15-23	DN8	GG25	Ball Valve	16
15-24	DN8	GG25	Ball Valve	16
15-25	DN8	GG25	Ball Valve	16
15-26	DN8	GG25	Ball Valve	16
15-27	DN8	GG25	Ball Valve	16
15-28	DN8	GG25	Ball Valve	16
15-29	DN8	GG25	Ball Valve	16
15-30	DN8	GG25	Ball Valve	16
15-31	DN8	GG25	Ball Valve	16

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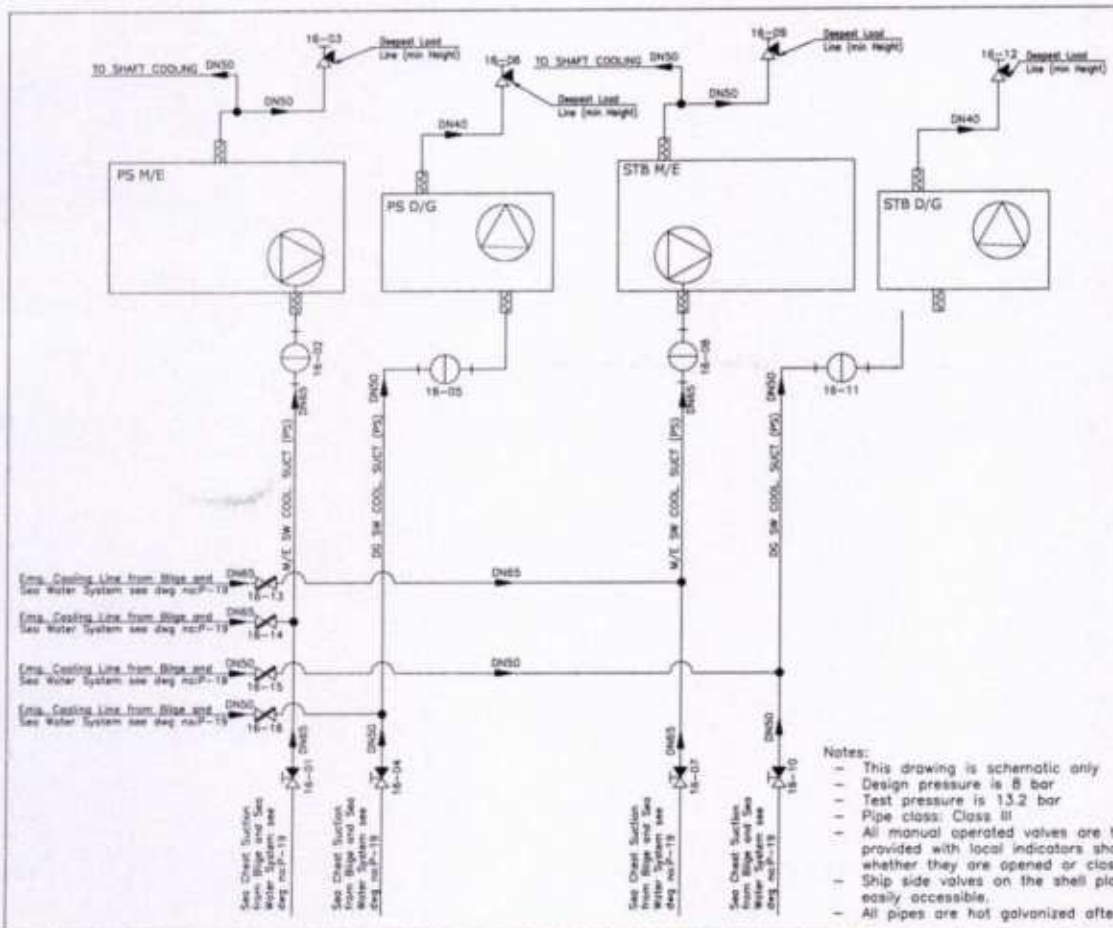
TOMAY

TBN-SPCB-04

COMPRESSED AIR SYSTEM

Design	Teoman TOMBAK	Shipyard	Class	BV / 48464F	Revision No	00
Drawn	Ismail Can Yilmaz	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	12.09.2024
Approved		Bangladesh Navy	Drawing No	[illegible]	Scale	1/75

Dockyard & Engineering Works Ltd. * Bangladesh Navy *



Pos No.	DN	Material	Type	PN (bar)
16-01	DN65	GG25	Non-Return Stop Valve	16
16-02	DN65	Steel	Filter	16
16-03	DN50	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-04	DN50	GG25	Non-Return Stop Valve	16
16-05	DN50	Steel	Filter	16
16-06	DN40	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-07	DN65	GG25	Non-Return Stop Valve	16
16-08	DN65	Steel	Filter	16
16-09	DN50	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-10	DN50	GG25	Non-Return Stop Valve	16
16-11	DN50	Steel	Filter	16
16-12	DN40	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-13	DN65	GG25	Butterfly Valve	16
16-14	DN65	GG25	Butterfly Valve	16
16-15	DN50	GG25	Butterfly Valve	16
16-16	DN50	GG25	Butterfly Valve	16

PIPE SCANTLINGS			
NOMINAL DIAMETER	OUTER DIAMETER	WALL THICKNESS	MATERIAL
1 1/2" DN40	44.5	1.2	Copper Nickel 70/30 Pipe
2" DN50	57	1.5	
2 1/2" DN65	76.1	1.5	

Symbol	Description
	Butterfly Valve
	Stop Check Valve
	Angle Non-Return Stop Valve
	Flow Direction
	Pump
	Exp. Joint
	Filter

Notes:
- This drawing is schematic only
- Design pressure is 8 bar
- Test pressure is 13.2 bar
- Pipe class: Class III
- All manual operated valves are to be provided with local indicators showing whether they are opened or closed
- Ship side valves on the shell plating shall be easily accessible.
- All pipes are hot galvanized after fabrication.

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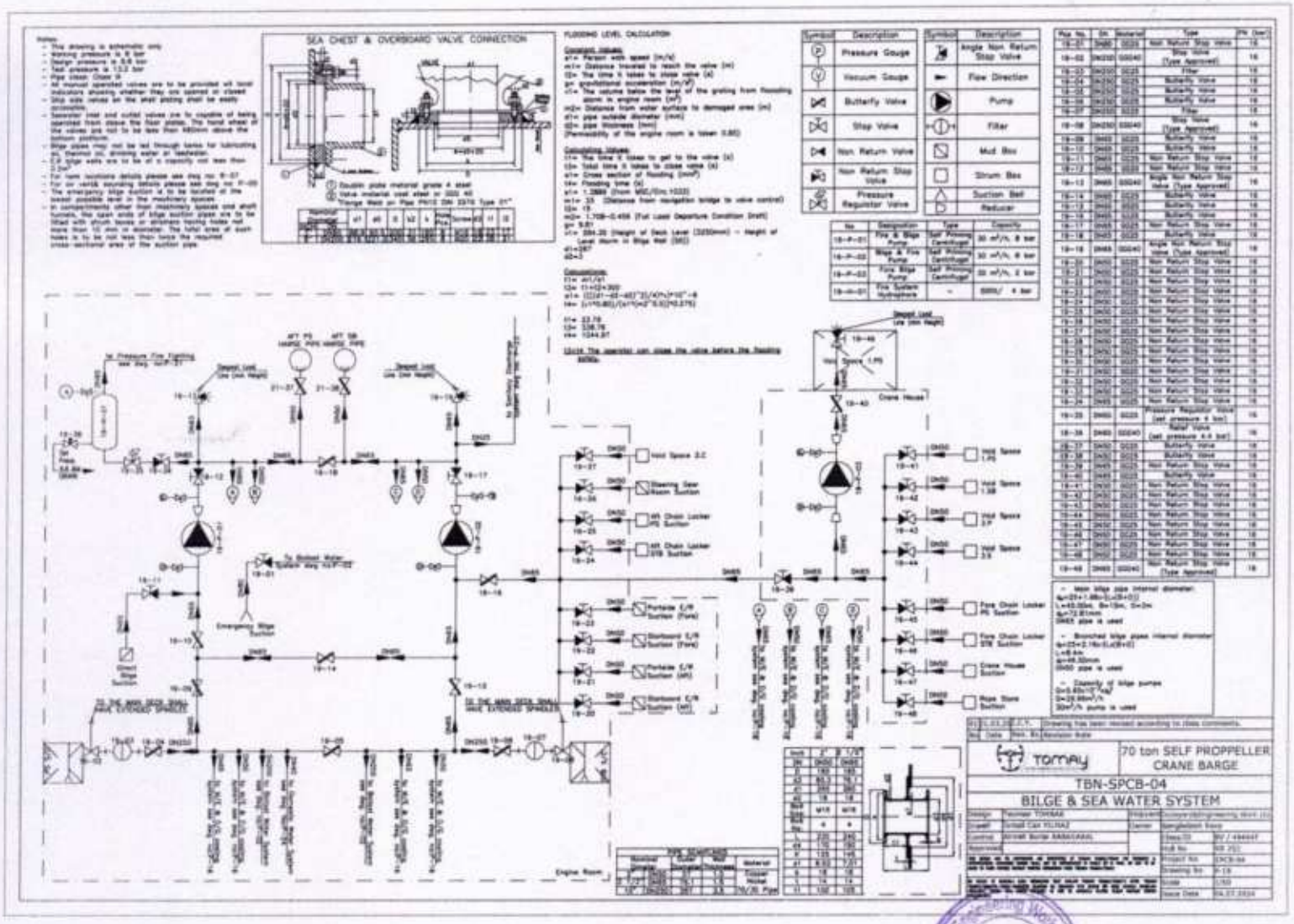
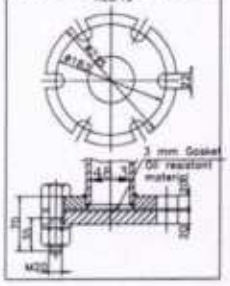
TOMAY	TBN-SPCB-04	Design	Teoman TOMBAK	Shipyard	Class	BV / 48464F	Revision No 00
		Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page 1/1
	M/E & GENERATOR COOLING WATER SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date 10.01.2024
		Approved		BANGLADESH NAVY	Drawing No	P-16	Scale 1/75

Dockyard & Engineering Works Ltd. * Bangladesh Navy *


SEA CHEST & OVERBOARD VALVE CONNECTION
FLOODING LEVEL CALCULATION
Pressure Gauge
Vacuum Gauge
Butterfly Valve
Stop Valve
Non Return Valve
Non Return Stop Valve
Pressure Regulator Valve
Angle Non Return Stop Valve
Flow Direction
Pump
Filter
Mud Box
Strum Box
Suction Bell
Reducer
Crane House
Engine Room
70 ton SELF PROPPELLER CRANE BARGE
TBN-SPCB-04
BILGE & SEA WATER SYSTEM
TOMAY

Pos No.	DN	Material	Type	PN (bar)
20-01	DN25	Steel	Strum Box	-
20-02	DN25	GG25	Non-return Stop Valve	6
20-03	DN25	Steel	Strum Box	-
20-04	DN25	GG25	Non-return Stop Valve	6
20-05	DN25	Steel	Strum Box	-
20-06	DN25	GG25	Non-return Stop Valve	6
20-07	DN25	Steel	Strum Box	-
20-08	DN25	GG25	Non-return Stop Valve	6
20-09	DN25	Steel	Strum Box	-
20-10	DN25	GG25	Non-return Stop Valve	6
20-11	DN25	GG25	Non-return Stop Valve	6
20-12	DN25	GG25	Non-return Stop Valve	6
20-13	DN25	GG25	Non-return Stop Valve	6
20-14	DN25	GG25	Non-return Stop Valve	6
20-15	DN25	GG25	Non-return Stop Valve	6
20-16	DN25	GG25	Non-return Stop Valve	6
20-17	DN25	GG25	Non-return Stop Valve	6
20-18	DN40	GG25	Stop Valve	6

STANDARD DISCHARGE CONNECTION COMPLY WITH MARPOL 73/78 ANNEX I REG.13



Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1"	DN25	33.7x3.2	Seamless Steel Pipe
1 1/2"	DN40	48.3x3.6	

Symbol	Description
	Non Return Stop Valve
	Stop Valve
	Strum Box
	Shore Connection
	Flow Direction
	Pump
	Suction Bell

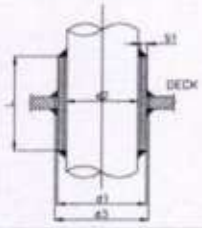
Notes:
- This drawing is schematic only
- Design pressure is 3 bar
- Test pressure is 4.5 bar
- Pipe class: Class III
- All pipes are hot galvanized after fabrication
- For air vent&sounding details please see dwg no: P-03
- For tank locations details please see dwg no: R-07
- Discharge connection will be locate suitable place near the superstructure.

No	Designation	Type	Capacity
20-P-01	Bilge Collection Pump	Gear Type	3 m^3/h,3 bar
20-P-02	Sludge Transfer Pump	Gear Type	3 m^3/h,3 bar

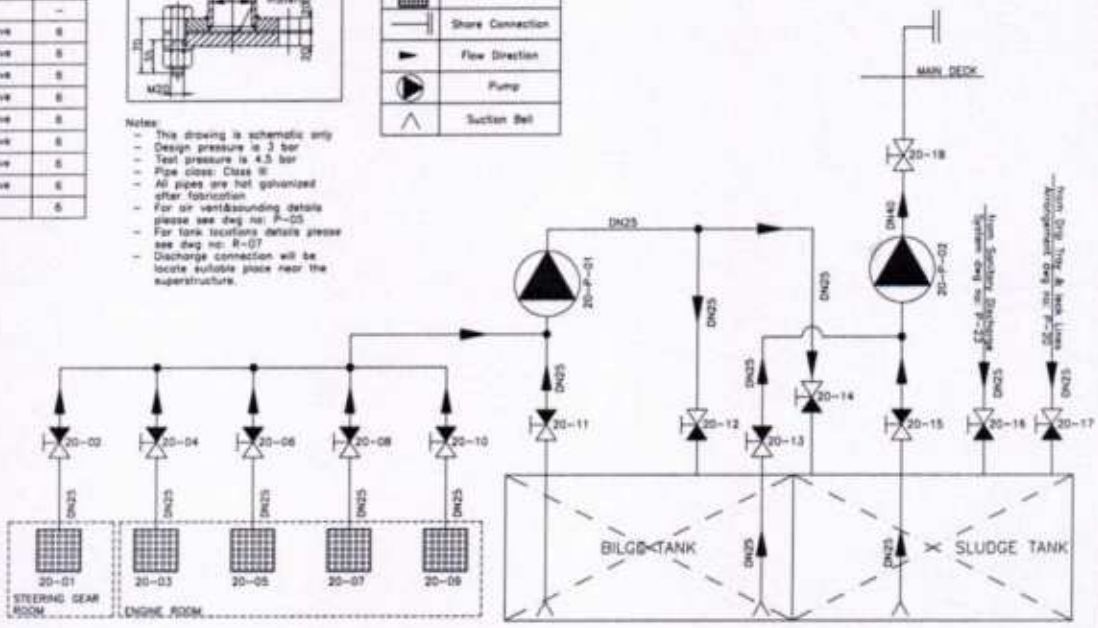
BILGE TANK CAPACITY CALCULATION
Required Capacity according to MEPC.1/Circ.642
Above 1000kW up to 2000kW:P/250
P: Main engine rating in kW
P=1004kW
Required Capacity=1004/250 =4.016m^3
Actual Capacity:4.75m^3

SLUDGE TANK CAPACITY CALCULATION
MARPOL Annex I Reg.12
V =KuCxD
K =0.005
C=8.977m^3/day
D=30 days
V =1.046m^3
Actual Capacity:4m^3

DECK PENETRATION DETAIL FOR STEEL PIPE



DN	d2	d1	S1	L	d3
25	33.7	42.4	4	60	45
40	48.3	60.3	6	60	62



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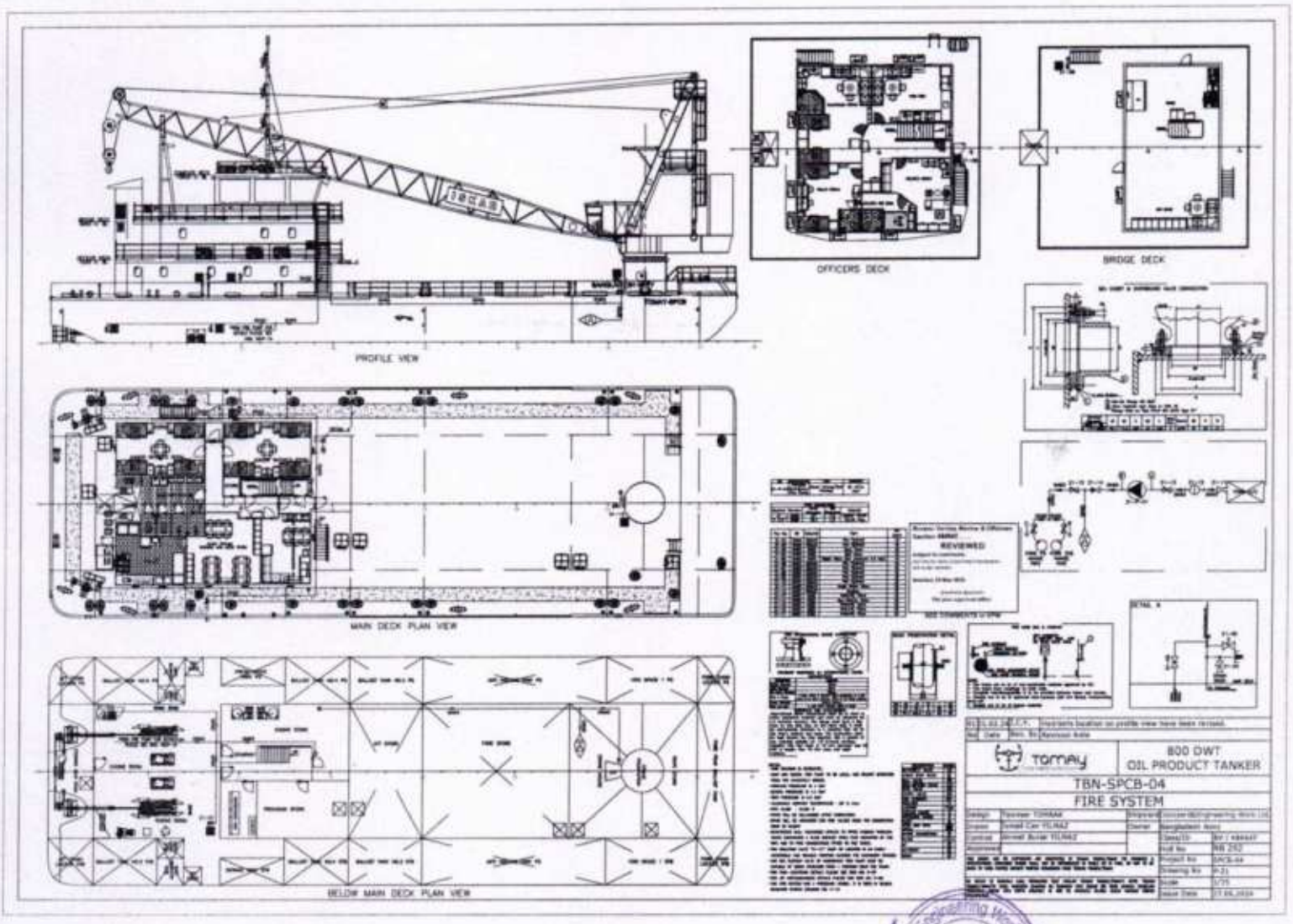
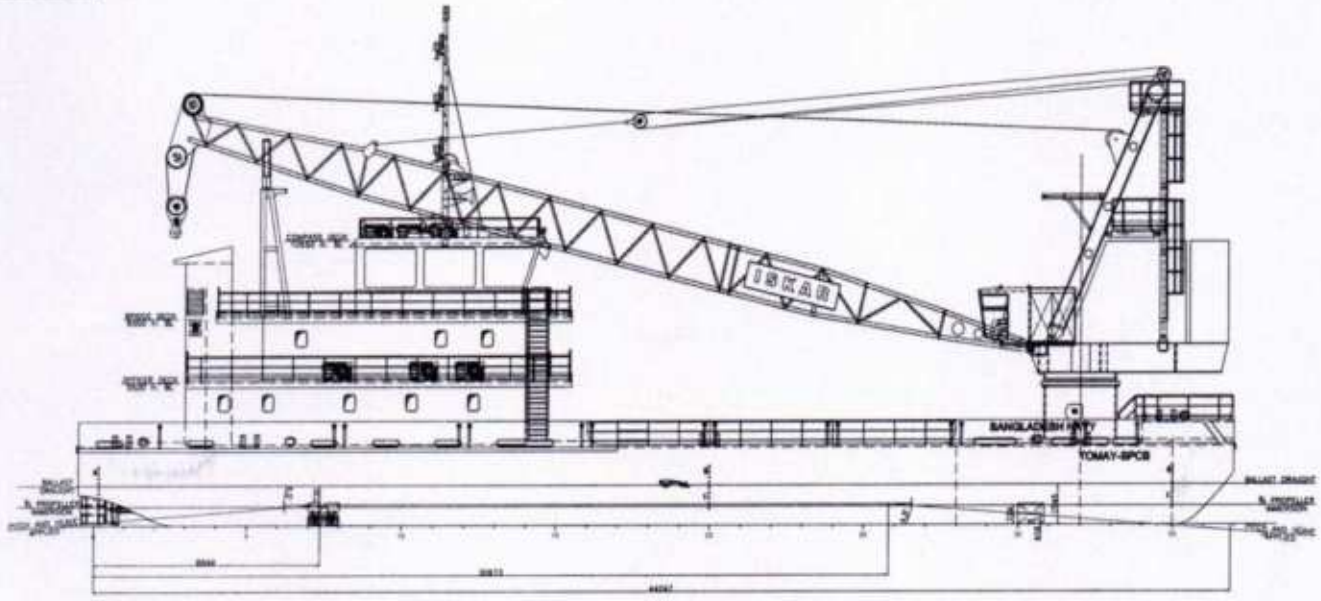
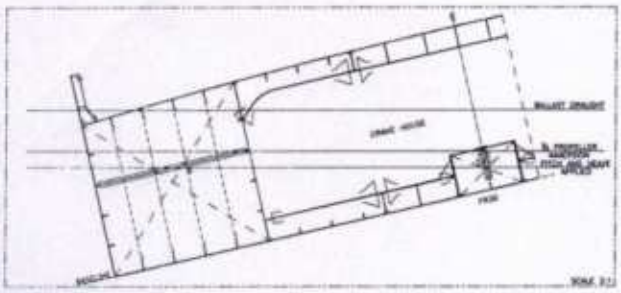
TOMAY	TBN-SPCB-04	Design	Tesman TOMBAK	Shipyard	Class	BV / 484647	Revision No	00
		Drawn	Ismail Can YILMAZ	DockyardB&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
	OILY WATER & SLUDGE SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	19.09.2024
		Approved		Bangladesh Navy	Drawing No	P-20	Scale	1/50


PROFILE VIEW
OFFICERS DECK
BRIDGE DECK
MAIN DECK PLAN VIEW
BELOW MAIN DECK PLAN VIEW
REVIEWED
TOMAY
800 DWT
OIL PRODUCT TANKER
TBN-SPCB-04
FIRE SYSTEM





L = Length between perpendiculars at the ballast: 44.036 meters
ϕ = 4.50°
H = 0.73 m
Pos.1 – Waterline in the arrival ballast condition (acc.MSC/CIRC 1388 1.2.2)
Draught MS:1.456 m
Pos.2 –Waterline for which heave combined pitch is taken into account (acc.MSC/CIRC 1388 1.1.1)
Pos.3 – Static waterline drawn through the level of 2/3 immersion of the propeller at even keel (acc.MSC/CIRC 1388 1.2.1)
Propeller diameter D – 0.97m
Axis of propeller – 0.618 m ab.BL

TOMAY	800 DWT OIL PRODUCT TANKER
TBN-SPCB-04	
FIRE SYSTEM	

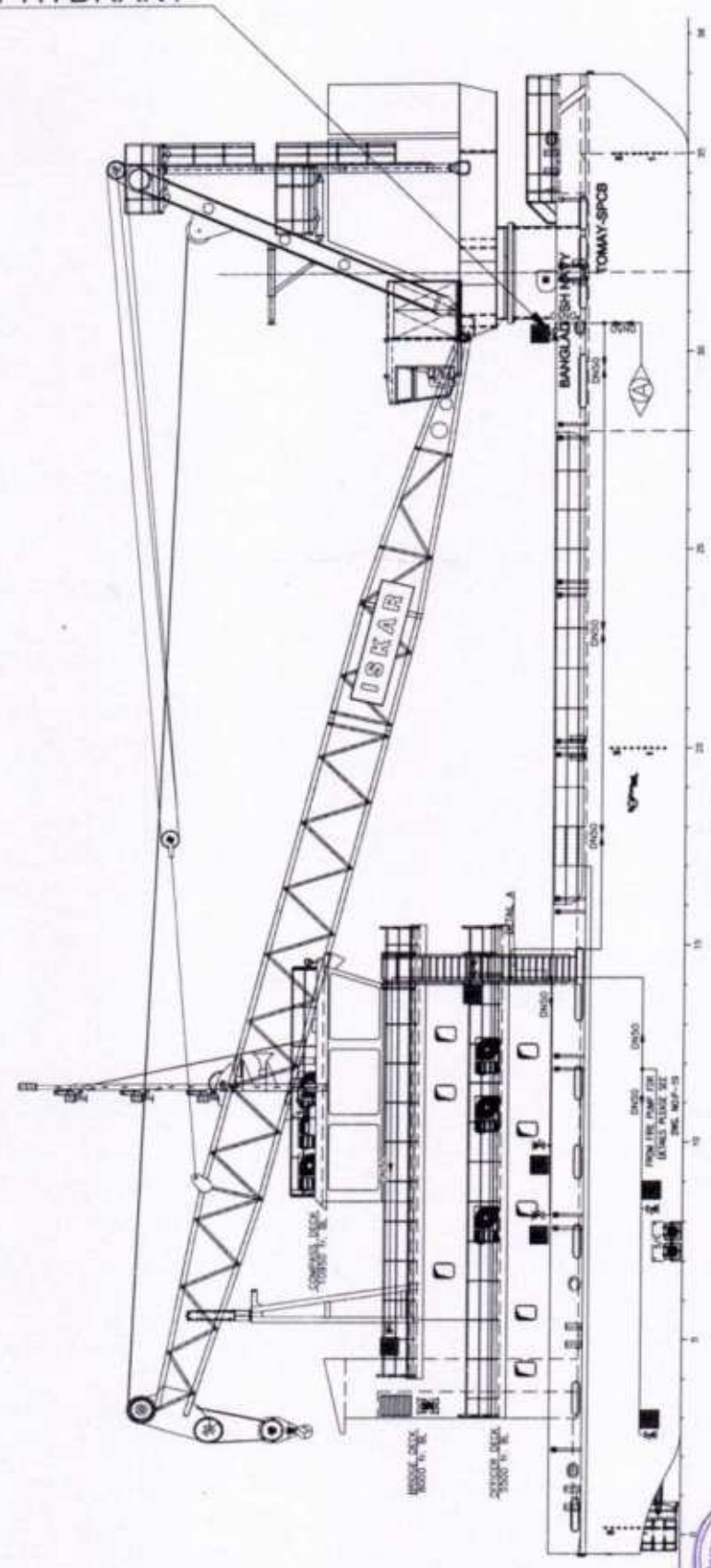
Dockyard & Engineering Works Ltd. Bangladesh Navy

BUREAU VERITAS
Stamped document, refer to 1st page

TOMAY
design engineering consultancy

TBN-SPCB-04 FIRE SYSTEM

OUTERMOST HYDRANT



Dockyard & Engineering Works Ltd.
Bangladesh Navy

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	PIPE NOMINAL DIAMETER	DN65	DN50	TOTAL	
	TOTAL PIPE LENGTH (L)	40.83	1.5	-	m
h_F	TOTAL PIPE HEAD LOSS	9.214	0.077	9.291	m
	TOTAL FITTING CONSTANTS	4.49	2.4	-	
h_L	TOTAL FITTING LOSS	2.086	0.334	2.42	m
V	SPEED	3.019	1.653	-	m/s
h_Z	ELEVATION DIFFERENCE (PUMP TO OUTERMOST HYDRANT)			3.2	m

This calculation has been calculated according to Hazen-Williams equation.			TOTAL HEAD LOSS	14.911	m
hF = (10.67*L*Q^1.852)/C^1852*D^4.87) C=120 (C is the Hazen-Williams coefficient (dimensionless) 120 for steel)	PUMP INFORMATION			1.462	bar
hL = K(V^2/2g)	FLOW RATE (Q): 25	m^3 /h	PRESSURE AT OUTERMOST HYDRANT	2.538	bar
hTotal = hZ + hL + hF	PRESSURE: 4	bar		**0.254**	MPa

Dockyard & Engineering Works Ltd. Bangladesh Navy

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FOR DN65 LINE			
NAME	VALUE (K)	TOTAL	TOTAL VALUE
RESTR. 1A	0.13	0	0
RESTR. 1B	0.16	0	0
RESTR. 1C	0.20	12	2.4
RESTR. 2A	0.15	0	0
RESTR. 2B	0.20	0	0
RESTR. 2C	0.25	0	0
RESTR. 3	0.50	0	0
RESTR. 4	0.75	0	0
RESTR. 5	1.00	0	0
RESTR. 6	3.00	0	0
RESTR. 7	1.50	0	0
RESTR. 8	1.00	1	1
RESTR. 9	0.90	0	0
RESTR. 10	0.04	6	0.24
RESTR. 11	0.35	0	0
RESTR. 12	0.10	0	0
RESTR. 13A	0.02	0	0
RESTR. 13B	0.40	0	0
RESTR. 14A	0.30	0	0
RESTR. 14B	0.60	0	0
RESTR. 14C	1.25	0	0
RESTR. 15	2.50	0	0
RESTR. 16	5.00	0	0
RESTR. 17	0.25	0	0
RESTR. 18	0.05	0	0
RESTR. 19	0.70	0	0
RESTR. 20	0.25	2	0.5
RESTR. 21	0.35	1	0.35
RESTR. 22	2.00	0	0
RESTR. 23	0.01	0	0
		TOTAL	**4.49**

FOR DN50 LINE			
NAME	VALUE	TOTAL	TOTAL VALUE
RESTR. 1A	0.13	0	0
RESTR. 1B	0.16	0	0
RESTR. 1C	0.20	2	0.4
RESTR. 2A	0.15	0	0
RESTR. 2B	0.20	0	0
RESTR. 2C	0.25	0	0
RESTR. 3	0.50	0	0
RESTR. 4	0.75	0	0
RESTR. 5	1.00	0	0
RESTR. 6	3.00	0	0
RESTR. 7	1.50	0	0
RESTR. 8	1.00	0	0
RESTR. 9	0.90	0	0
RESTR. 10	0.04	0	0
RESTR. 11	0.35	0	0
RESTR. 12	0.10	0	0
RESTR. 13A	0.02	0	0
RESTR. 13B	0.40	0	0
RESTR. 14A	0.30	0	0
RESTR. 14B	0.60	0	0
RESTR. 14C	1.25	0	0
RESTR. 15	2.50	0	0
RESTR. 16	5.00	0	0
RESTR. 17	0.25	0	0
RESTR. 18	0.05	0	0
RESTR. 19	0.70	0	0
RESTR. 20	0.20	0	0
RESTR. 21	0.35	0	0
RESTR. 22	2.00	1	2
RESTR. 23	0.01	0	0
		TOTAL	**2.4**

Dockyard & Engineering Works Ltd. Bangladesh Navy

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RESISTANCE OF VALVES AND FITTINGS TO FLOW OF FLUIDS

1		A		B		C	
		45°	0,13	60°	0,16	90°	0,20
2		A		B		C	
		45°	0,15	60°	0,20	90°	0,25
3		90° BENDS IN SERIES					0,5
4		90° BENDS IN SERIES					0,75
5		90° BENDS IN SERIES					1
6		CONFLUENCE IN TEE PIPE					3
7		ANGLE FLOW IN TEE PIPE					1,5
8		SEPARATION OF FLOW IN TEE PIPE					1
9		ANGLE FLOW IN TEE PIPE					0,9
10		STRAIGHT FLOW IN TEE PIPE					0,04
11		BRANCH PIPE (CONFLUENCE)		$Q_a = 0,5Q$			
				$Z_d = 0,35$		$Z_a = 0,35$	
12		BRANCH PIPE (CONFLUENCE)		$Q_a = 0,5Q$			
				$Z_d = 0,1$		$Z_a = 0,1$	
13		SEP. OF FLOW ($Q_a = 0,5Q$)		A		B	
				$Z_d = 0,02$		$Z_a = 0,4$	
14		MITRE BENDS	A		B		C
			45°	0,3	60°	0,6	90° 1,25
15		COMBINATIONS WITH 90° PIPE ELBOWS					2,5
16		COMBINATIONS WITH 90° PIPE ELBOWS					5
17		INLET					0,25
18		INLET					0,05
19		INLET					0,7
20		BUTTERFLY VALVE					0,25
21		DISCO CHECK VALVE					0,35
22		FIRE HYDRANT					2
23		SEP. OF FLOW ($Q_a = 0,5Q$)		A		B	
				$Z_d = 0,01$		$Z_a = 0,9$	

Draft(m) \ Speed(kN)	4	5	6	7	8	9
1	0.556	0.869	0.833	0.972	1.111	1.250
1.2	0.667	0.833	1.000	1.167	1.333	1.500
1.4	0.778	0.972	1.167	1.361	1.556	1.750
1.5	0.833	1.042	1.250	1.458	1.667	1.875
1.6	0.889	1.111	1.333	1.556	1.778	2.000
1.7	0.945	1.181	1.417	1.653	1.889	2.125
1.8	1.000	1.250	1.500	1.750	2.000	2.250

Permitted values have been marked on table.

Maximum discharge rate calculation

The maximum permissible discharge rate is 1/200000 of swept volume as follows:

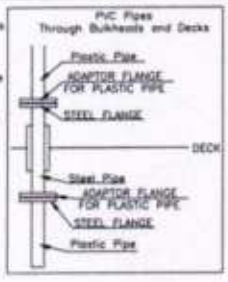
$D_{max}=0.00926xVxDxB$

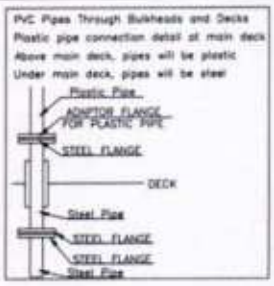
D_{max} is maximum permissible rate (m^3/h)

V is ship's average speed (knots) over the period

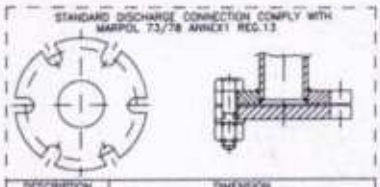
D is maximum summer draft (m)

V=8knots D=1.8m B=15m $D_{max}=2.25m^3/h$





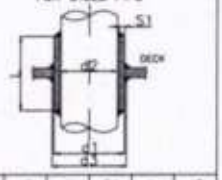
STANDARD DISCHARGE CONNECTION COMPLY WITH MARPOL 73/78 ANNEX1 REG.13



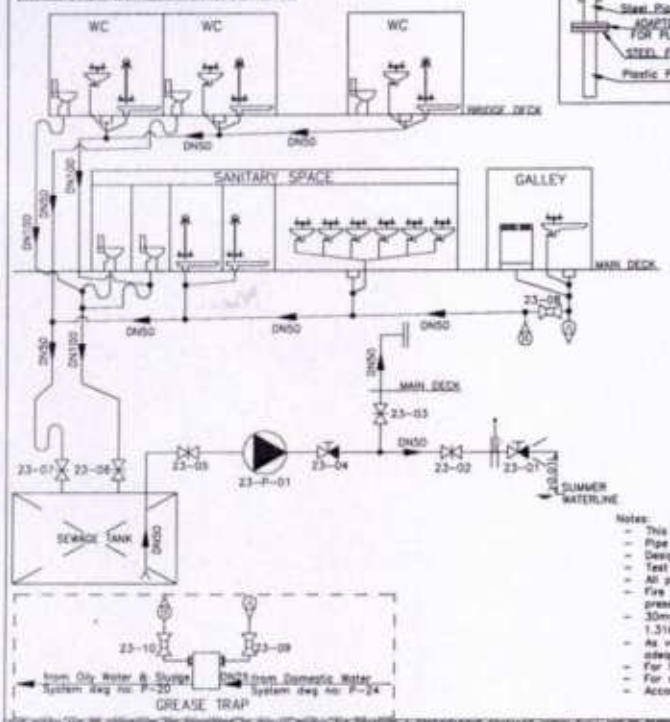
DESCRIPTION	DIMENSION
Outside Diameter	215mm
Inside Diameter	According to pipe outside diameter
Bolt Circle Diameter	183mm
Slots in Flange	6 holes, 22mm in diameter space equidistantly on a bolt circle of the above diameter, slotted to the flange periphery. The slot width to be 22mm
Flange Thickness	20mm minimum
Bolts and Nuts	6, each 20mm diameter and of suitable length

The flange is designed to accept pipes up to a maximum internal diameter of 125 mm and shall be of steel or other equivalent material having a flat face. This flange, together with a gasket of oil-proof material, shall be suitable for a service pressure of 600 kPa.

DECK PENETRATION DETAIL FOR STEEL PIPE



DN	d2	d1	S1	L	d3
50	60.3	88.9	8	60	91
100	114.3	139.7	11	100	142



Pipe No.	DN	Material	Type	PN (bar)
23-01	DN50	GGG40	Non-return Stop Valve (Type Approved)	6
23-02	DN50	GG25	Gate Valve	6
23-03	DN50	GG25	Gate Valve	6
23-04	DN50	GG25	Non-return Stop Valve	6
23-05	DN50	GG25	Gate Valve	6
23-06	DN100	GG25	Gate Valve	6
23-07	DN50	GG25	Gate Valve	6
23-08	DN50	GG25	Ball Valve	6
23-09	DN50	GG25	Ball Valve	6
23-10	DN50	GG25	Ball Valve	6

Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1"	DN25	33.4x3.2	Seamless Steel Pipe
1 1/2"	DN40	48.3x3.6	
2"	DN50	60.3x4.0	
4"	DN100	114.3x4.5	
These thicknesses are the minimum requirements of class rules.			

Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
2"	DN50	60.3x3.91	UPVC
4"	DN100	114.3x6.02	

No	Designation	Type	Capacity
23-P-01	Sewage Pump	Gear	4 m^3/h,3 bar

Symbol	Description
	Gate Valve
	Non Return Stop Valve
	Shore Connection
	Pump
	Orifice Plate

Notes:

- This drawing is schematic only
- Pipe class: Class III
- Design pressure is 4 bar
- Test pressure is 6 bar
- All pipes are hot galvanized after fabrication
- Fire integrity of the decks and bulkheads are to be preserved.
- 30mm bore diameter orifice. Reduces $4m^3/h$ flow rate to $1.316m^3/h$
- As voyage miles and sewage holding tanks capacity is adequate, no sewage treatment unit is installed on board.
- For tank locations details please see dwg no: R-07
- For air vent&sounding details please see dwg no: P-05
- Accommodation piping material will be UPVC

Sewage tank capacity calculation:
Total Crew:25
Consume per day:0.3m^3
No discharge period:3 days
Required Capacity:22.5m^3
Actual Capacity:23.13m^3

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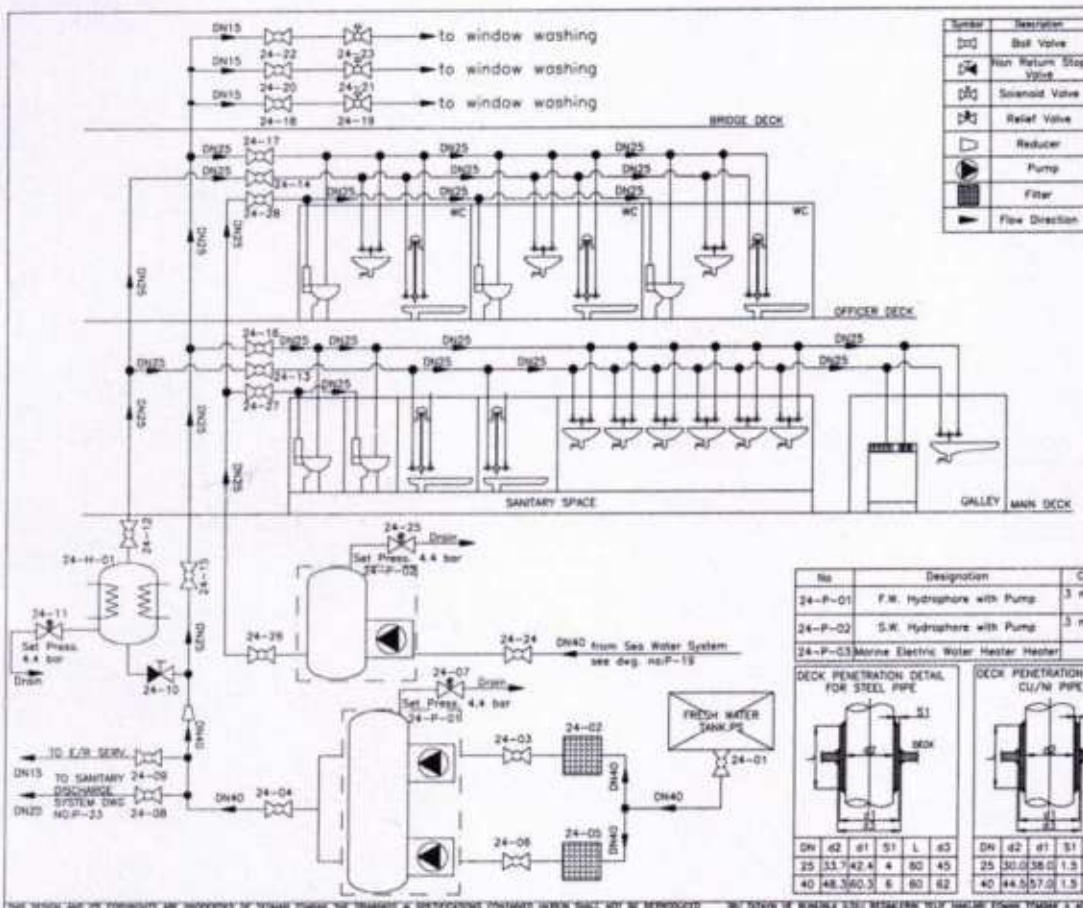
BU DIZAYN VE BUNDAKI ÇIZIM, HESAPLAMA VELİP HAKLARI TEOMAN TOMBAK A.ŞİRK. TEOMAN TOMBAK'IN YAZILI MUVAFAKATI OLMADAN BU DOKÜMAN VEYA BUNUN BİR KISMI ÜÇÜNCÜ ŞAHISLARA VERİLEMEZ, TEKSİR EDİLİR KOPYA EDİLEMEZ VE HİÇ BİR MAKSATLA ÇOĞALTILAMAZ OLUMSUZ ÖLÇÜM MAKSADI DIŞINDA KULLANILAMAZ

TOMAY	TBN-SPCB-04	Design	Teoman TOMBAK	Shipyard	Class	BV / 48464F	Revision No 00
		Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page 1/1
	SANITARY DISCHARGE SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date 13.09.2024
		Approved		Bangladesh Navy	Drawing No	P-23	Scale 1/75

Dockyard & Engineering Works Ltd. Bangladesh Navy
Date



Symbol	Description
	Ball Valve
	Non Return Stop Valve
	Solenoid Valve
	Relief Valve
	Reducer
	Pump
	Filter
	Flow Direction

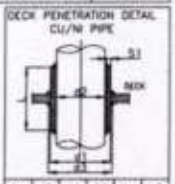
Pos No.	DN	Material	Type	PN (bar)
24-01	DN40	GG25	Ball Valve	10
24-02	DN40	Steel	Filter	10
24-03	DN40	GG25	Ball Valve	10
24-04	DN40	GG25	Ball Valve	10
24-05	DN40	Steel	Filter	10
24-06	DN40	GG25	Ball Valve	10
24-07	DN25	GG25	Safety Valve (set pressure 4.4 bar)	10
24-08	DN25	GG25	Ball Valve	10
24-09	DN15	GG25	Ball Valve	10
24-10	DN40	GG25	Non-Return Stop Valve	10
24-11	DN25	GG25	Safety Valve (set pressure 4.4 bar)	10
24-12	DN25	GG25	Ball Valve	10
24-13	DN25	GG25	Ball Valve	10
24-14	DN25	GG25	Ball Valve	10
24-15	DN25	GG25	Ball Valve	10
24-16	DN25	GG25	Ball Valve	10
24-17	DN25	GG25	Ball Valve	10
24-18	DN15	GG25	Ball Valve	10
24-19	DN15	GG25	Solenoid Valve	10
24-20	DN15	GG25	Ball Valve	10
24-21	DN15	GG25	Solenoid Valve	10
24-22	DN15	GG25	Ball Valve	10
24-23	DN15	GG25	Solenoid Valve	10
24-24	DN40	GG25	Ball Valve	
24-25	DN25	GG25	Safety Valve (set pressure 4.4 bar)	10
24-26	DN25	GG25	Ball Valve	10
24-27	DN25	GG25	Ball Valve	10
24-28	DN25	GG25	Ball Valve	10

No	Designation	Capacity
24-P-01	F.W. Hydrophore with Pump	3 m³/h,4bar 100lt
24-P-02	S.W. Hydrophore with Pump	3 m³/h,4bar 200lt
24-P-03	Marine Electric Water Heater Heater	80lt

DECK PENETRATION DETAIL FOR STEEL PIPE

DN	d2	d1	S1	L	d3
25	33.7	42.4	4	60	45
40	48.3	60.3	5	60	62

DECK PENETRATION DETAIL CU/NI PIPE



DN	d2	d1	S1	L	d3
25	30.0	38.0	1.5	60	40
40	44.5	57.0	1.5	60	60

Pipe Scantlings			
For FreshWater			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1/2"	DN15	21.3x2.0	Seamless Steel Pipe
1"	DN25	33.7x2.0	
1 1/2"	DN40	48.3x2.3	
For SeaWater			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1"	DN25	33.7x1.2	Copper Nickel 70/30 Pipe
1 1/2"	DN40	48.3x1.5	

Notes:
- This drawing is schematic only.
- Working pressure is 4 bar.
- Design pressure is 4.4 bar.
- Test pressure is 6.6 bar.
- Steel pipes are hot galvanized after fabrication.
- Steel pipe will be used for fresh water.
- Cu/Ni pipe will be used for sea water.
- Hot water line design temperature is 65°C.
- Drinking water pipe lines are not pass through tanks which do not contain drinking water.

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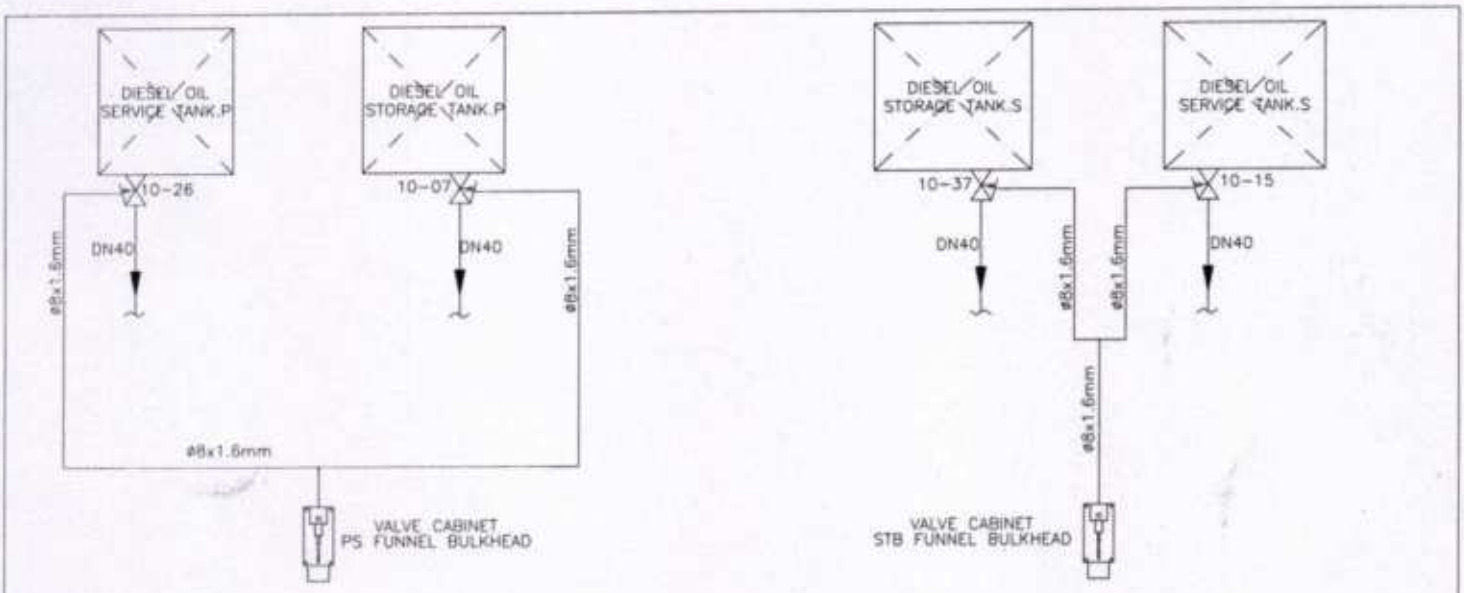
TOMAY	TBN-SPCB-04	Design	Yeoman TOMBAK	Shipyard	Class	BV / 48464F	Revision No	00
		Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
	DOMESTIC WATER SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	20.09.2024
		Approved		Bangladesh Navy	Drawing No	P-24	Scale	1:50

Dockyard & Engineering Works Ltd. Bangladesh Navy



Pos. No.	DN	MATERIAL	TYPE	PN (bar)
10-07	DN40	GGG40	Quick Closing Valve	10
10-15	DN40	GGG40	Quick Closing Valve	10
10-26	DN40	GGG40	Quick Closing Valve	10
10-37	DN40	GGG40	Quick Closing Valve	10

Symbol	Description
	Quick Closing Valve
	Self Closing Valve
	Flow Direction

NOTES:

1) ALL PIPES 8mm. OD 1.6 mm WALL THICKNESS DIN2391 St.35 SEAMLESS PIPE.
2) REMOTE CONTROLLED VALVES ARE TO BE PROVIDED WITH INDICATORS ON THE LOCAL CONTROLS TO SHOW WHETHER THEY ARE OPEN OR SHUT.
3) VALVE HYDRAULIC ACTUATOR CABINETS PLACED ON MAIN DECK OUTSIDE, ON THE SIDE BULKEADS OF FUNNEL.
4) FOR AIR VENTS AND SOUNDING PLEASE SEE "AIR VENT & SOUNDING SYSTEM" DWG NO: P-03.
5) FOR TANKS LOCATIONS AND VOLUMES SEE "TANK CAPACITY PLAN" DWG NO: R-07.

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TOMAY	TBN-SPCB-04	Design	Teoman TOMBAK	Shipyard	Dockyard&Engineering Work Ltd.	Class	BV / 48464F	Revision No	00
		Drawn	İsmail Can YILMAZ			Hull No	NB 252	Page	1/1
	QUICK CLOSING VALVE SYSTEM	Control	Ahmet Burak KABAŞAKAL	Owner		Project No	SPCB-04	Issue Date	24.09.2024
		Approved		Bangladesh Navy		Drawing No	P-66	Scale	1/50

Dockyard & Engineering Works Ltd. Bangladesh Navy

ANNEX-C

BANK GUARANTEE IN LIEU OF EARNEST MONEY

Guarantee No _____
Dated _____
For (mention amount) _____

Dear Sir,

Whereas (Name of tender floating organization) under tender No----------dated ----------inviting tenders for supplies of (described supplies) has agreed to waive the requirement of cash deposit /call deposit of US$/ £/ Tk----------being %1(one percent) of the value of supplies as earnest money by the tender for making in accordance with the terms and conditions of the tenderer and the tenderer shall provide a bank guarantee for payment for the said amount .
And whereas the tenderer M/S,---------- of ----------has requested us (name of bank) of ----------to issue a guarantee for payment of the amount of US$/ £/ Tk----------when called upon.

In consideration of the aforesaid, we (name of bank) of ---------- hereby undertake and guarantee due performance of the tender by 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 direct by the organisation immediately on receipt of demand from the said , organisation in writing , in the event be tenderer fail to perform the tender , it is expressly understood that the organisation shall be the sole judge for deciding whether the tender has performed the tender and fulfill the terms and condition 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 and amount of US$/ £/ Tk----------(----------) only .

4. The guarantee will remain valid up to ----------

Yours faithfully

(seal of the bank) ----------Bank

Dockyard & Engineering Works Ltd. Bangladesh Navy

ANNEX-D

PERFORMANCE BANK GUARANTEE

Managing Director
Dockyard& Engineering works Ltd
Bangladesh Navy
Sonakanda, Bandor, Narayanganj

Bank Guarantee no _____
Dated _____
For (Mention amount) _____

Dear Sir,

Whereas Dockyard & Engineering works Ltd, Bangladesh Navy, Sonakanda, Bandor, Narayanganj, hereinafter referred to as the buyers proposed to enter in to a contract through a letter of intent/Purchase Order 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 terms and conditions of the contract. And whereas the sellers have requested us (name of the bank) to issue a guarantee for an amount of **US$/ £/ EURO/ Tk. _____** Being 5% of the CFR value of the supplies.

In Consideration aforesaid (name of bank) _____ here by undertake and guarantee due observance and performance of the terms and condition 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 of fulfill the terms and conditions thereof.

To keep guarantee valid and in force for 4 (four) months beyond the date of shipment 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 of 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 the guarantee.

our commitment under this guarantee is limited to an amount of US$/£/EURO/Tk. _____ only.

Yours faithfully

(seal of the bank)

----------Bank