



KHULNA SHIPYARD LIMITED

BANGLADESH NAVY, KHULNA

PHONE : 02-477720003

Web: www.khulnashipyard.gov.bd, oiocomf.ksy@gmail.com

BABE (F)–632/Co² System, Pump, Pressure Indicator etc./2025-2026

19 February 2026

Dear Sir

INVITATION FOR QUOTATION OF FIXED CO2 SYSTEM (ANNEX-A), FIRE PUMP, HAND PUMP, BILGE EDUCTOR & FIRE FIGHTING ITEMS (ANNEX-B), PRESSURE INDICATOR, GAUGE, PIPE, VALVE, GAUGE, ADAPTER & CONNECTOR, MUD BOX, REDUCER, GASKET, STRAINER, PIPE, FLANGE, ELBOW, VALVE AND EXHAUST MATERIALS (ANNEX-C).

1. Khulna Shipyard Limited (KSY) will procure "Fixed Co2 System (Annex-A), Fire Pump, Hand Pump, Bilge Eductor & Fire Fighting Items (Annex-B), Pressure Indicator, Gauge, Pipe, Valve, Gauge, Adapter & Connector, Mud Box, Reducer, Gasket, Strainer, Pipe, Flange, Elbow, Valve And Exhaust Materials (Annex-C)" as per attached specification (14 Page) with following terms & conditions:

2. Please send your offer

CFR Chattogram Seaport basis within **10/03/2026 (11:30 Hours)** by closed envelop.

- a) Payment: Payment will be made through Letter of Credit where LC Commission (0.3% of Contract value per quarter), insurance (0.3% of Contract value) with related others cost will be borne by supplier at LC opening.
 - i. 80% of the total contract value will be paid against shipping documents and
 - ii. Rest 20% will be paid after receiving the material at KSY and satisfactory acceptance.
- b) Shipment: 45 days from the opening date of LC.
- c) FOB value & Ocean freight should be shown separately (Freight & Material Value)

Or

Submission of quotation as local supply terms:

- a) Please send your offer delivery at KSY site basis. Offer should include supply of materials including custom duty, local VAT & TAX etc. within **10/03/2026 (11:30 Hours)** by closed envelop.
 - b) Payment: 100% payment will be made after receiving the material at KSY and satisfactory acceptance after deducting of VAT and TAX.
 - c) Delivery: 60 days from the Purchase Order.
3. Three percent (3%) Bid Bond/ Earnest Money (in the form of a pay order, returnable after the submission of the Performance Guarantee, PG) equivalent to the total quoted value must be submitted with the offer. This amount is subject to forfeiture if the bidder withdraws or modifies their Tender for any reason, violates the terms after the Tender opening and before the expiration of its validity, or fails to provide the required performance bond within the stipulated time after receiving the letter of intent.
4. Five percent (5%) of the total value will be submitted as a Performance Guarantee (PG) in the form of a Pay Order/Bank Guarantee before the Purchase Order. This guarantee will be released after a satisfactory inspection of quantity, quality and weight by KSY in the presence of the supplier's representative at the shipyard premises. The buyer reserves the right to forfeit the performance guarantee if the supplier fails to fulfill the terms and conditions of this contract, whether partially or wholly, and may take any other appropriate action against the supplier.
5. Supplier shall furnish to KSY a guarantee for warranty (as a Pay Order or Bank Guarantee) for an amount equivalent to 05% (five percent) of the total contract price from any scheduled bank situated in Bangladesh. The buyer shall have the right to forfeit the guarantee for failure of the supplier in fulfilling the terms and conditions partially or wholly, besides taking any other action against the supplier that may be warranted. It will be released after completion of warranty period.

6. Offer Validity: 30 Days from Tender Opening Date.
7. The above terms and conditions are not absolute, the Khulna Shipyard Ltd., Bangladesh Navy, reserves the right to incorporate additional terms and conditions, if necessary. The Khulna Shipyard Ltd., BN also is not bound to accept the lowest offer and reserves the right to cancel tender or reject any or all Tenders without assigning any reason whatsoever.

Thanking You



Sk. Shah Moshir Rahman
Manager Commercial Foreign
For Managing Director

TECHNICAL SPECIFICATION OF FIXED CO2 SYSTEM

| Sr. | Description | Quantity (Pcs/ Set) |
|-----|---|------------------------|
| a. | Fixed CO2 System. | |
| 1 | <p>(1) Name: Fixed CO₂ System complete set with all necessary accessories</p> <p>(2) Brand: To be mentioned</p> <p>(3) Country of origin: To be mentioned</p> <p>(4) Country of Manufacture: To be mentioned</p> <p>(5) Standard: ISO and SOLAS standard</p> <p>(6) Nominal Pressure: To be mentioned</p> <p>(7) Power Supply: 22V AC 50 Hz/ 4400V AC 50 Hz</p> <p>(8) Operation Method: Local and Remote operation. Details to be provided.</p> <p>(9) Release delay: To be mention as per SOLAS.</p> <p>(10) CO₂ cylinder details are below:</p> <p style="padding-left: 20px;">(a) CO₂ cylinder Bank: 12 Cylinders x 45 Kg each cylinder</p> <p style="padding-left: 20px;">(b) CO₂ cylinder Bank: 1 Cylinder x 35 Kg</p> <p style="padding-left: 20px;">(c) CO₂ cylinder Bank: 2 Cylinders x 20 Kg each cylinder</p> <p>(11) Motor operated valve: 5 in nos.</p> <p>(12) CO₂ Nozzle: 17 in nos. (To be confirmed by vendor)</p> <p>(13) Control panel: As required including light signal, fire alarm, CO₂ Horn, Operating System etc.</p> <p>(14) Accessories: All accessories are to be supplied with item for smooth operation to the system. Details to be mentioned.</p> <p>(15) Design approval from class: Complete design preparation and approval from any IACS member is to be provided to shipyard. However, the preliminary arrangement drawing of CO₂ system is the a prepared drawing by CO₂ maker will be as per this drawing (D No 534-555-03, Rev-0)</p> <p>(16) Certificate: Type approved certificate form any IACS member is to be delivered with the CO₂ system.</p> <p>(17) Test-Trial and commissioning: the installation, test-trial and commissions will be done by supplier representative.</p> <p>(18) Bill of quantity (BOQ) of all pipe (Size, material's type and length) with all pipe fittings, valves, clamps, etc for smooth operation of the CO₂ system as per approved design. : To be provided.</p> <p>(19) All material as per given Bill of quantity (BOQ) for all pipe (Size, material's type and length) with all pipe fittings, valves, clamps, etc for operation of the CO₂ system.: To be supplied.</p> | 3 Sets |

CHNICAL SPECIFICATION OF FIRE PUMP, HAND PUMP, BILGE EDUCTOR & FIRE-FIGHTING ITEMS

| Sr. | Description | Quantity (Pcs/ Set) |
|---|---|------------------------|
| b. Bilge Eductor | | |
| 1 | BILGE EDUCTOR (Fire Pump driven) -Fwd & Aft Engine room DN : 100×80×100 (Inlet x Suction x Discharge) Motive Flow: 45 m ³ /hr at 4 bar Suction Flow: 38 m ³ /hr at -0.6 bar Fire pump capacity: 90 m ³ /hr at 9 bar Material: Bronze or equivalent. System: Bilge Certificate: Factory test certificate or to be mentioned. | 6 |
| 2 | BILGE EDUCTOR (Fire Pump driven) -Chain locker room DN: 80×50×80 (Inlet x Suction x Discharge) Motive Flow: 45 m ³ /hr at 4 bar Suction Flow: 38 m ³ /hr at -0.6 bar Fire pump capacity: 90 m ³ /hr at 9 bar Material: Bronze or equivalent. System: Bilge Certificate: Factory test certificate or to be mentioned. | 9 |
| c. Hand Pump, Fire Hydrant Valve & Fire hose | | |
| 1. | Name: Fire Hydrant Valve Size: DN 65 Type: One end (ISO 7005 PN10) flanged and other end storz coupling. Coupling Type: STORZ. (a robust, quick-connect fitting for hoses, leak-free connection) Body Material: Brass Working pressure: Minimum 6 bar. Certificate: Mill test certificate by maker. System: Fire main and wash down. | 69 |
| 2. | Name: Fire hose with both end coupling and Spray-jet nozzle. Size: DN 65 Hose Color: White Coupling type: STORZ (Must be matched with above fire hydrant valve mentioned in serial 1.21 (DN65 fire hydrant valve)). Nozzle: Spray-jet. Working pressure: Minimum 10 bar. Nozzle & Coupling material: Brass Hose length: 20 meter with proper coupling. Certificate: SOLAS or equivalent international class certificate to be provided. System: Fire main and wash down. | 51 |
| 3. | Name: Fire hose with both end coupling and Spray-jet nozzle. Size: DN 65 Hose Color: White Coupling type: STORZ (Must be matched with above fire hydrant valve mentioned in serial 1.21 (DN65 fire hydrant valve)). Nozzle: Spray-jet Working pressure: Minimum 10 bar. Nozzle & Coupling material: Brass Hose length: 15 meter with proper coupling. Certificate: SOLAS or equivalent international class certificate to be provided. System: Fire main and wash down. | 18 |

| Sr. | Description | Quantity (Pcs/ Set) |
|---|---|------------------------|
| d. Portable Diesel Engine driven Fire pump (Emergency fire pump) | | |
| 1 | <p>Name: Portable Diesel Engine driven Fire pump with complete set, suction hose, check valve and all accessories. Capacity: 33 m³/ hr @ 2.75 bar (g). Type: To be mentioned. Country of Origin: To be mentioned. Country of Manufacturer: To be mentioned. Manufacturer Name: To be mentioned. Engine power: To be mentioned. Engine RPM: To be mentioned. Suction dia & Discharge dia: DN 65 Fire hose (20 m length brass) with brass coupling and brass spray –jet nozzle : To be supplied with each set. Suction lift: Minimum 4m static suction lift. Starting system: Both mechanical & electric. Required battery: To be supplied by supplier. Accessories: 01 in no. suction hose of 6m length with strainer, 1 in no. coupling hose joint with sleeve (male & female coupling), 06 pcs hose clamp, 01 suction blanking cap. Document: Maintenance & Operation manual, Parts catalogue in English to be provided. Fire hose (20m length) brass st coupling brass spray jet nozzle: To be supplied with each set. System: Fire main and wash down. Certificate: Factory acceptance test by their internal QC department is to be submitted with the products. Test: Trial and commissioning is to be done by supplier representative.</p> | 3 Sets |
| e. Fire-Fighting item | | |
| 1 | <p>Name: Foam Making Branch Pipe and Foam Gun Brand: To be mentioned Country of origin: To be mentioned Country of Manufacture: To be mentioned Flow rate: 230 l/min at 5.5 bar Operating pressure range: 3 to 10.5 bar Foam liquid: AFFF/ FFFP (To be supplied 50 liter.) Foam liquid consumption: a) With 3% liquid – 7 lit./min b) With 6% liquid – 14 lit./min Spray Distance: ≥ 20 meter Coupling: 2.5 Inch (Inlet), storz type Pick Up tube with both end coupling: L-3 meter, Dia- ¾ inch Foam tank Capacity: 20 liter with one spare tank 20L Foam tank Material: SS Foam gun material: SS Coupling material: Brass The proportion of water and foam mixture: 3% to 3.90% Mixed liquid flow: 80% l/sec, test-trial and commissioning is to be accomplished by supplier. Certificate: SOLAS or equivalent international class certificate to be provided.</p> | 3 Sets |

| Sr. | Description | Quantity (Pcs/ Set) |
|---|--|------------------------|
| f. Sprinkler for Vehicle deck. | | |
| 1 | Name: Sprinkler for Vehicle deck. Brand: To be mentioned Country of origin: To be mentioned Country of Manufacture: To be mentioned Capacity: 8.2 m ³ /hr at 3 bar Spray Angle: 180° Material: Brass or equivalent. Bore Dia: 12.2 mm Orifice Connection: ½ inch male NPT Minimum Application rate: 10.1 l/min/m ² (Floor Area) Sprinkler reaction time: 57.2 Sec is to be mentioned. Vehicle deck Height: 4 m, system pressure: 03 Bar (minimum) Certificate: Manufacturer Test Certificate System: Vehicle sprinkler. | 39 pcs |
| g. Sprinkler for Magazine & Arms locker Room. | | |
| 1 | Name: Sprinkler for Magazine & Arms locker Room. Brand: To be mentioned Country of origin: To be mentioned Country of Manufacture: To be mentioned Capacity: 5.9 m ³ /hr at 3 bar Spray Angle: 180° Material: Brass or equivalent. Bore Dia: 10.90 mm Orifice Sprinkler discharge rate: 180 l/min Connection: ½ inch male NPT Minimum Application rate: 32.7 l/min/m ² Magazine room deck Area: 6 m ² , system design pressure: 10 Bar Certificate: Manufacturer Test Certificate System: Magazine spray. | 12 pcs |
| h. Filter, Waste Disposal System & Fuel Oil purifier | | |
| 1. | Name: Fuel Filter Size: DN 80 Type: Flanged Material: Cast Iron Mesh Dia: 1.6mm System: Fuel oil fill & Transfer Certificate: Manufacturer Test Certificate | 6 pcs |
| 2. | Name: Fuel Oil purifier Maker: To be mentioned Model: To be mentioned Capacity: 1.75 m ³ /hr (Drawing to be submitted) Power Supply: 220V, AC, 50 Hz, Single phase Type: Centrifugal type, Electric driven, Self-cleaning type. Parameter: C/W rotary gear pump & remote emergency stop. Catalogue/ Manual: To be supplied Certificate: Manufacturer Test Certificate System: FO filling & transfer | 6 pcs |
| 3. | Name: Waste Disposal System. Maker: Badger, Insinkerator, Emerson Electric Co. Model: To be mentioned Grind chamber Capacity: 26 oz Origin: USA or equivalent. Operating Voltage: 220 V, Single phase, 50 Hz Motor power: To be mentioned Catalogue/ Manual: To be supplied Certificate: Manufacturer Test Certificate | 6 set |

TECHNICAL SPECIFICATION OF PRESSURE INDICATOR, GAUGE, PIPE, VALVE, GAUGE, ADAPTER & CONNECTOR, MUD BOX, REDUCER, GASKET, STRAINER, PIPE, FLANGE, ELBOW, VALVE AND EXHAUST MATERIALS

| Sr. | Description | Quantity (Pcs/ Set) |
|---|--|---------------------|
| i. Pressure Indicator | | |
| 1. | Name: Complete Pressure Gauge Set Type: Dial Type-Elastic Element Range: 0 to 5 bar Dial Diameter: 100 mm Liquid filled: Required. Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: FO transfer, ME cooling, Chilled water | 24 |
| 2. | Name: Complete Pressure Gauge Set Type: Dial Type-Elastic Element Range: 0 to 15 bar Dial Diameter: 100 mm Liquid filled: Required. Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: Vehicle spray, Magazine spray | 24 |
| 3. | Name: Complete Pressure Gauge Set Type: Dial Type-Elastic Element Range: 0 to 10 bar Dial Diameter: 100 mm Liquid filled: Required. Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: FW | 12 |
| j. Differential Pressure Indicator | | |
| 1 | Name: Complete Differential Pressure Gauge Set Type: Dial Type-Elastic Element Range: 0~5 bar Dial Diameter: 100 mm (Minimum) System design pressure: 10 bar Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: Fi-Fi, Vehicle spray. | 12 |
| 2 | Name: Complete Differential Pressure Gauge Set Type: To be mentioned. Range: 0~1 bar Dial Diameter: 100 mm (Minimum) System design pressure: 2 bar Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: ME & AE cooling. | 18 |
| 3 | Name: Complete Differential Pressure Gauge Set Type: To be mentioned. Range: 0~2 bar Dial Diameter: 100 mm (Minimum) System design pressure: 5 bar. Certificate: Manufacturer & Product calibration certificate. | 36 |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----------------------------------|--|------------------------|
| | Accessories: Suitable Valve and it's fittings System: FO service. | |
| 4 | Name: Complete Differential Pressure Gauge Set Type: To be mentioned. Range: To be confirmed Dial Diameter: 100 mm (Minimum) System design pressure: 3 bar Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: Chilled water | 6 |
| k. Pressure Gauge | | |
| 1 | Name: Complete Pressure Gauge Set Type: Dial Type-Elastic Element Range: 0 to 60 bar Dial Diameter: 120 mm (minimum) Liquid filled: Required. Certificate: Manufacturer & Product calibration certificate. Accessories: Suitable Valve and it's fittings System: Compressed & control air. | 3 |
| l. Adapter & Connector | | |
| 4. | Name: Male reducing adapter (One end Ferrule type and another end BSP threaded type) DN: 3/4 inch , (Pipe out diameter: 27.2 mm) Material: Carbon Steel Certificate: Manufacturer Test Certificate. System: Steering System | 48 pcs |
| 5. | Name: Ferrule type connector DN: 15, (Pipe out diameter: 22.2mm) Material: Carbon Steel Certificate: Manufacturer Test Certificate. System: Steering System | 75 pcs |
| m. Mud box | | |
| 1. | Name: Bilge Mud box Size: DN: 65 Material: Hot dip galvanized Type: Angle and flanged. Mesh dia: ≤ 5 mm Working pressure: 8 bar Applicable medium: Bilge with water Certificate: Manufacturer Test Certificate. System: Bilge | 12 pcs |
| 2. | Name: Bilge Mud box Size: DN: 80 Material: Hot dip galvanized Type: Angle and flanged. Mesh dia: ≤ 5 mm Working pressure: 08 bar Applicable medium: Bilge with water Certificate: Manufacturer Test Certificate. System : Bilge | 18 pcs |
| n. Reducer | | |
| 1. | Reducer Size: DN 200 x DN 125 Thickness: 2.6 mm (minimum) Type: Butt Weld | 6 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----|--|------------------------|
| | Material: Stainless Steel (321) Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: Exhaust Gas | |
| 2. | Reducer Size: DN 125 x DN 80 Thickness: 2.6 mm (minimum) Type: Butt Weld Material: Stainless Steel (321) Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: Exhaust Gas | 6 pcs |
| 3. | Reducer Size: DN 100 x DN 65 Thickness: 3.2 mm (minimum) Type: Socket Weld Material: Carbon Steel , ASTM A234, ASME B16.9 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: Black & Grey water | 6 pcs |
| 4. | Reducer Size: DN 125 x DN 65 Thickness: 3.2 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: Firemain and Washdown | 6 pcs |
| 5. | Reducer Size: DN 125 x DN 100 Thickness: 3.2 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: Firemain and Washdown | 12 pcs |
| 6. | Reducer Size: DN 20 x DN 8 Thickness: 1.6 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: FW Generation & Domestic FW | 3 pcs |
| 7. | Reducer Size: DN 32 x DN 15 Thickness: 1.8 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: FW Generation & Domestic FW | 18 pcs |
| 8. | Reducer Size: DN 32 x DN 20 Thickness: 1.8 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III | 3 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|--------------------|--|------------------------|
| | System Name: FW Generation & Domestic FW | |
| 9. | Reducer Size: DN 25 x DN 20 Thickness: 1.8 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: FW Generation & Domestic FW | 12 pcs |
| 10. | Reducer Size: DN 25 x DN 15 Thickness: 1.8 mm (minimum) Material: Cu-Ni 90-10 Standard: Seamless Class: III Certificate: Manufacturer Test Certificate. System Name: FW Generation & Domestic FW | 3 pcs |
| 11. | ReducerDN: 40x25 Thickness: 2.1 mm (minimum) Type: BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate. | 3 pcs |
| 12. | ReducerDN: 40x20 Thickness: 2.1 mm (minimum) Type: BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate. | 3 pcs |
| o. Gasket | | |
| 1. | Name: Gasket for chilled water pipe line Size: DN 80 Outer dia of Gasket: The dia of the gasket will be the dia of raised face (RF) of the DN 80, PN-10 flange. Material: NBR Gasket (with Brass Net, Oil Proof Rubber) Standard: Class-III Certificate: Manufacturer Test Certificate. System Name: Chilled Water | 50 pcs |
| 2. | Name: Gasket for Fi-Fi line Size: DN 150 Outer dia of Gasket: The dia of the gasket will be the dia of raised face (RF) of the DN 150, PN-10 flange. Material: Teflon Metallic Wound Gasket Standard: Class-III Certificate: Manufacturer Test Certificate. System Name: Firemain And Washdown System | 42 pcs |
| p. Strainer | | |
| 1. | Simplex strainer with differential pressure gauge. Capacity: 3 m3 /hr. Size: DN 25 Type: Flanged Simplex with differential pressure gauge, (0-10 bar), Mesh dia.: 3 mm Basket Material: S.S Body material: Bronze/ Cast iron. Certificate: Manufacturer Test Certificate. | 09 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|------------------|---|------------------------|
| 2. | Name: Simplex Strainer Size: DN 50 Type: Flanged Material: Cast Iron, Strainer filter/ mesh: SS Mesh Dia: 1.5mm Certificate: Manufacturer Test Certificate. System: Lub oil | 6 pcs |
| 3. | Simplex strainer with differential pressure gauge. DN 80 Capacity: 36 m3 /hr. Type: Flanged Simplex with differential pressure gauge, (0-10 bar), Mesh dia.: 3 mm Basket Material: S.S Body material: Bronze/ Cast iron. Certificate: Manufacturer Test Certificate. | 06 pcs |
| q. Pipe | | |
| 1. | Pipe DN: 20, OD=26.9 mm Thickness: 1.7 mm Class: III Material: Cu-Ni 90-10 Standard: SEAMLESS UNS C70600. Certificate: Manufacturer Test Certificate. Certificate number should be punched on pipe body | 36 m |
| 2. | Pipe DN: 65 Thickness: 2.1 mm Class: III Material: Cu-Ni 90-10 Standard: SEAMLESS UNS C70600. Certificate: Manufacturer Test Certificate. Certificate number should be punched on pipe body. | 54 m |
| 3. | Pipe DN: 80, OD= 88.9 mm Thickness: 2.4 mm Class: III Material: Cu-Ni 90-10 Standard: SEAMLESS UNS C70600. Certificate: Manufacturer Test Certificate. Certificate number should be punched on pipe body. | 36m |
| r. Flange | | |
| 1. | Flange DN: 20 Type: FF SO FLANGE Material: Cu-Ni 90-10 Flange dimension: OD=105 mm, PCD=75 mm, Number of hole:4, Hole dia: 14 mm Standard: CLASS 150, ASME B16.5 Certificate: Manufacturer Test Certificate | 36 pcs |
| 2. | Flange DN: 80 Type: FF SO FLANGE Material: Cu-Ni 90-10 | 36 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----|---|------------------------|
| | Flange dimension: OD=200 mm, PCD=160 mm, Number of hole:8, Hole dia: 18 mm Standard: CLASS 150, ASME B16.5 Certificate: Manufacturer Test Certificate | |
| 3. | Flange DN: 150 Type: FF SO FLANGE Material: Cu-Ni 90-10 Flange dimension: OD=285 mm, PCD=240 mm, Number of hole:8, Hole dia: 22 mm Standard: CLASS 150, ASME B16.5 Certificate: Manufacturer Test Certificate | 24 pcs |
| s. | Elbow | |
| 1. | Elbow DN: 20 Thickness: 1.7 mm Type: Short Radius (SR), BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate | 12 pcs |
| 2. | Elbow DN: 25 Thickness: 1.7 mm Type: Short Radius (SR), BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate | 12 pcs |
| 3. | Elbow DN: 50 Thickness: 2.1 mm Type: Short Radius (SR), BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate | 21 pcs |
| 4. | Elbow DN: 65 Thickness: 2.1 mm Type: Short Radius (SR), BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate | 132 pcs |
| 5. | Elbow DN: 80 Thickness: 2.4 mm Type: Short Radius (SR), BUTTWELD Material: Cu-Ni 90-10 Standard: UNS C70600, , NAVSEA 810-1385880, CLASS 200 Certificate: Manufacturer Test Certificate | 12 pcs |
| 6. | Elbow DN: 32 Thickness: 2.3 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.40, ASME B16.9 | 36 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----|--|------------------------|
| | Certificate: Manufacturer Test Certificate | |
| 7. | Elbow DN: 40 Thickness: 3.6 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.40, ASME B16.9 Certificate: Manufacturer Test Certificate | 150 pcs |
| 8. | Elbow DN: 50 Thickness: 3.91 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.40, ASME B16.9 Certificate: Manufacturer Test Certificate | 220 pcs |
| 9. | Elbow DN: 65 Out diameter: 76.1 mm Thickness: 5.5 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.80, ASME B16.9 Certificate: Manufacturer Test Certificate | 30 pcs |
| 10. | Elbow DN: 65 Out diameter: 76.1 mm Thickness: 4 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.40, ASME B16.9 Certificate: Manufacturer Test Certificate | 240 pcs |
| 11. | Elbow DN: 80 Thickness: 6 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.80, ASME B16.9 Certificate: Manufacturer Test Certificate | 45 pcs |
| 12. | Elbow DN: 80 Thickness: 4.5 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.40, ASME B16.9 Certificate: Manufacturer Test Certificate | 54 pcs |
| 13. | Elbow DN: 100 Thickness: 4.5 mm Type: Short Radius (SR), BUTTWELD Material: Carbon Steel (CS), Seamless Standard: ASTM A234, Sch.40, ASME B16.9 Certificate: Manufacturer Test Certificate | 30 pcs |
| t. | Valve | |
| 1. | Wafer check valve with flange | 6 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----|--|---------------------|
| | DN: 65 Type: Flanged, ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Trim: Bronze/SS Body Material: Cast Iron ValveFlange dimension: OD: 185 mm, PCD: 145 mm, Number of hole: 04, Hole dia: 18 mm Certificate: Manufacturer Test Certificate | |
| 2. | Swing check valve with flange DN: 25 Type: Flanged, ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Trim: Bronze/SS Body Material: Bronze ValveFlange dimension: OD: 115 mm, PCD: 85 mm, Number of hole: 04, Hole dia: 14 mm Certificate: Manufacturer Test Certificate | 6 pcs |
| 3. | Swing check valve with flange DN: 20 Grade: Flanged, ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Trim: Bronze/SS Body Material: Bronze ValveFlange dimension: OD: 105 mm, PCD: 75 mm, Number of hole: 04, Hole dia: 14 mm Certificate: Manufacturer Test Certificate | 3 pcs |
| 4. | Ball valve DN: 25 Grade: Threaded, ASTM B62/62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Body Material: Bronze Trim: Bronze Certificate: Manufacturer Test Certificate | 27 Pcs |
| 5. | Ball valve DN: 20 Grade: Threaded, ASTM B62/62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Body Material: Bronze Trim: Bronze Certificate: Manufacturer Test Certificate | 6 Pcs |
| 6. | Lever operated Butterfly valve DN: 80 Body Material: Cast Iron Type: WAFER, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, TRIM: BRONZE OR ALUM with NBR seat ValveFlange dimension: OD: 200 mm, PCD: 160 mm, Number of hole: 08, Hole dia: 18 mm Certificate: Manufacturer Test Certificate | 12 Pcs |
| 7. | Lever operated Butterfly valve with flange. DN: 65 Body Material: Cast Iron Type: WAFER, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150, TRIM: BRONZE OR ALUM with NBR seat ValveFlange dimension: OD: 185 mm, PCD: 145 mm, Number of hole: 04, Hole dia: 18 mm Certificate: Manufacturer Test Certificate | 18 Pcs |
| 8. | Wheel operated Butterfly valve | 3 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----------------------------|--|------------------------|
| | DN: 65 Body Material: Cast Iron Type: LUG Type, ASTM A395, MSS-SP-67, ASME B16.34, CLASS 150. TRIM: BRONZE OR ALUM with NBR seat Valve Flange dimension: OD: 185 mm, PCD: 145 mm, Number of hole: 04, Hole dia: 18 mm Certificate: LR class approved test certificate is to be supplied with item | |
| 9. | Globe Valve Stop Check DN: 40 Body Material: Bronze Type: FLANGED, ASTM B62, B505-83600, B150-64200, ASME B16.34, CLASS 150 Trim: Bronze Valve Flange size: OD: 140 mm, PCD: 105 mm, No. of hole: 04, Hole dia: 18mm Certificate: LR class approved test certificate is to be supplied with item | 6 pcs |
| 10. | Globe Valve with flange DN: 25 Type: Flanged, ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 TRIM: Bronze Body Material: Bronze Valve Flange dimension: OD: 115 mm, PCD: 85 mm, Number of hole: 04, Hole dia: 14 mm Certificate: Manufacturer Test Certificate | 3 pcs |
| 11. | Globe Valve with flange DN: 20 Body Material: Bronze Type: FLANGED, ASTM B61/62, MSS SP-80, ASME B16.34, CLASS 150 TRIM: BRONZE Valve Flange dimension: OD: 105 mm, PCD: 75 mm, Number of hole: 04, Hole dia: 14 mm Certificate: Manufacturer Test Certificate | 3 pcs |
| u. Exhaust Materials | | |
| 1. | Name: Vibration isolated guide, Drawing: to be submitted with offer DN: 150 System: Exhaust Gas Certificate: Manufacturer Test Certificate | 9 pcs |
| 2. | Name: Vibration isolated guide, Drawing: to be submitted with offer DN: 200 System: Exhaust Gas Certificate: Manufacturer Test Certificate | 51 pcs |
| 3. | Name: Vibration isolated guide, Drawing: to be submitted with offer DN: 500 System: Exhaust Gas Certificate: Manufacturer Test Certificate | 84 pcs |
| 4. | Name: Anti-vibration mount, Drawing: To be submitted with offer Size: To be mentioned System: Exhaust Gas Certificate: Manufacturer Test Certificate | 204 pcs |
| 5. | Name: Nut- Bolt with Spring Washer (Full thread) Size: M28 X 150 mm | 975 pcs |

| Sr. | Description | Quantity (Pcs/ Set) |
|-----|---|------------------------|
| | Material of Bolt: Stainless Steel (SS) Grade of Bolt: 8.8, 316 SST ASTM F593, ASME18.2.1 Material of Nut : Stainless Steel (SS) Grade of Nut: 316 SST ASTM F594, ASME18.2.2 Material of Spring Washer: Standard Certificate: Manufacturer Test Certificate System Name : Exhaust gas | |
| 6. | Expansion bellows for Main Engine that will be used for Engine model: 3516C, B type, 2240KW @ 1800 rpm (Caterpillar) Size: DN 500, Type: Both end flange type and flange material will be Stainless Steel Flange dimension: OD=698 mm, PCD=635 mm, Number of hole:20, Hole dia: 31 mm Temperature: Above 700° C Material: 2-ply Stainless steel (SS 321) Spare flange having same PCD of bellows flange: 2 nos., Spare flange material: 01 Nos. Carbon Steel & 01 Nos. Stainless Steel (321). Certificate: Manufacturer Test Certificate | 12 sets |
| 7. | Expansion bellows for Diesel Generator that will be used for Genset model: 6W126S, 272KW @ 1500 rpm (Baudouin) Size: DN 200, Type: Both end flange type and flange material will be Stainless Steel Flange dimension: OD=345 mm, PCD=300 mm, Number of hole:8, Hole dia: 22 mm Temperature: Above 650° C Material: 2-ply Stainless steel (SS 321) Spare flange having same PCD of bellows flange: 2 nos., Spare flange material: 01 Nos. Carbon Steel & 01 Nos. Stainless Steel (321). Certificate: Manufacturer Test Certificate | 12 sets |
| 8. | Expansion bellows for Emergency Diesel Generator that will be used for Genset model: 6W105ES, 132KW @ 1500 rpm (Baudouin) Size: DN 150, Type: Both end flange type and flange material will be Stainless Steel Flange dimension: OD=280 mm, PCD=240 mm, Number of hole:8, Hole dia: 22 mm Temperature: Above 650° C Material: 2-ply Stainless steel (SS 321) Spare flange having same PCD of bellows flange: 2 nos., Spare flange material: 01 Nos. Carbon Steel & 01 Nos. Stainless Steel (321). Certificate: Manufacturer Test Certificate | 3 Sets |