

KOLLAM DISTRICT COOPERATIVE HOSPITAL SOCIETY LTD Q 952

Palathara, Kollam

Pin: 691020

TENDER DOCUMENT

For

Supply, Installation & Commissioning of

MEDICAL GAS PIPELINES, OT PENDANTS AND BHPs

PART 1 TECHNICAL BID

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INVITATION FOR TENDER

1. Sealed tenders (two bid system) are invited from reputed and established suppliers for supply of Medical Equipments For NS Memorial Institute of Medical Sciences (NSMIMS) under Kollam District Cooperative Hospital Society Ltd Q 952.
2. The method of submission of tender, amounts of Earnest Money/Security Deposit and General Terms and Conditions applicable to contract has been mentioned in **General Terms and Conditions**. The work is to be performed strictly as per parameters/technical specifications given n Tender document in **Annexure - A**. The Performa for submission of tender has been given in **Technical Information** (for Technical Bid) and **Commercial Bid** (for Commercial Bid) to this Notice Inviting Tender.

3. **Schedule of Tender**

Date of Release of Tender	:	29/12/2022, 10 AM
Last Date & Time of Issue of Tender	:	06/01/2023, 1 PM
Last Date & Time of Submission of Tender	:	07/01/2023, 3 PM
Date & time of opening of Technical Bid	:	07/01/2023, 4 PM
Date of demonstration of the machine	:	To be informed to qualified tenderers qualifying after opening of technical bids
Date of opening of the price bid	:	To be informed to the qualifying tenders qualifying after demonstration

4. Amount of Earnest Money to be deposited as per **Clause 2 of General Terms and Condition** in the shape of Demand Draft only.
 5. The Tender documents along with terms and conditions can be purchased from hospital by depositing **Rs. 2500 + GST (Two Thousand Five Hunderd only)** which is non-refundable, on any working day. The tender document can also be downloaded from the website (www.nshospital.org). Demand Draft of Rs. 2500 + GST (*Non-refundable*) in favour of Secretary ,Kollam district co operative hospital Society should be submitted along with tender documents, if the Form is downloaded from the website.
 6. The tenders received after the scheduled date and time will be rejected outright.
 7. Any tender received without Earnest Money as specified in tender documents shall not be considered and shall be summarily rejected.
 8. The validity of the offer shall be 60 days after the date of opening of the tender. If any bidder withdraws his tender within the validity period or makes any
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modifications in terms and conditions of the tender and/or rates after submission of tender which are not acceptable or does not start the work within stipulated period from the date of issue of letter of acceptance, then tender inviting authority shall without prejudice to any other right or remedy, be at liberty to disqualify the tenderer and shall be debarred from bidding in case of re-invitation of the tenders.

9. Tenderer can submit tenders only on the documents downloaded from website.

DETAILS OF WORKS

SL. NO	Description	Quantity
1	Medical Gas Pipeline System	Labour Room, OT
2	OT Pendant	8
3	Bed Head Unit	17

Pre-Qualification Criteria - Documents Required (Documentary Proof to be submitted)

1. The tenderer should have an annual turnover of Rs 1 cores each in the previous three financial years
2. The tenderer should submit declaration of work completed/satisfactory report from any 3 organisations of high value works done
3. Earnest Money Deposit for Rs1,00,000.- (DD in favor of Client or bank guaranty)
4. Bio data of the Partners / Directors, key personnel along with details regarding the works executed during last 5 ears
5. Audited balance sheet of the firm for the previous financial year.

On the Date of opening the cover containing technical bids will be opened and Bid security submitted will be verified. The list of bidders who submitted bids will be announced through a Minutes of meeting. The evaluation of bids will be then conducted.

1. EMD's of unsuccessful tenderers shall be returned within a week of opening of the tender and that of the successful tenderer on issuance of the work order
 2. The undersigned reserves the right to reject any or all tenders without assigning any reasons thereof.
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GENERAL TERMS AND CONDITIONS

1. **Parties:-** The parties to the Contract are the contractor (the tenderer to whom the work has been awarded) and N.S Memorial institute of medical sciences.

2. **Earnest Money:**

Earnest Money Deposit (EMD) of Rs. of 1,00,000 (One Lakh only) in the form of demand draft drawn in favour of Secretary Kollam district co operative hospital Society ltd Q952 must be deposited along with the tender. The earnest money so deposited shall not earn any interest. Tenders without earnest money will be outright rejected.

3. **Preparation and Submission of Tender:**

The tender should be submitted in two parts namely Technical Bid (in form given in Technical **Information & EMD**). Financial Bid (in form given in **Financial Bid**) and each should be kept in a separate sealed cover. All the covers should be kept in another sealed cover addressed to the undersigned. The outer cover envelope containing sealed cover should bear the address of Tenderer. The inner two covers should be super scribed with subject of Tender, whether the cover is containing “Technical Bid” or “Financial Bid

(1) In case of partnership firms, a copy of the partnership agreement, or general power of attorney duly attested by a Notary Public, should be furnished on stamped paper duly sworn of affirmed by all the partners admitting execution of the partnership agreement or the general power of attorney. The attested copy of the certificate of registration of firm should also be enclosed along with the tender.

(2) The tenderer should sign and affix his/his firm’s stamp at each page of the tender and all its Annexures as the acceptance of the offer by the tenderer will be deemed as a contract and no separate formal contract will be drawn. **NO PAGE SHOULD BE REMOVED / DETACHED FROM THIS TENDER DOCUMENT.**

4. **Technical Bid:**

The Technical bid should be submitted in form given in **Technical Information**, Demand Draft for Earnest Money along with Copy of PAN Number issued in favour of the firm and any other required information.

5. **Financial Bid:**

The Financial Bid should be submitted as in **Annexure – “B”** given in **Commercial Bid** in a separate sealed cover kept inside the main cover. The Financial Bids of those tenderers who are found technically competent, will be opened on a specified

date and time to be intimated to the respective tenderer.

Terms of payment as stated in the Tender Documents shall be final.

6. Criterion for Evaluation of Tender:

The evaluation of the tenders will be made first on the basis of technical information furnished in form given in **Technical Bid** and then on the basis of commercial information furnished in form given in **Financial Bid**. The Financial bid of such firms found valid based on technical parameters (as per **Technical Information and Undertaking**) will be opened on the date, time and venue to be announced after opening of the Technical Bid. The reasons for selection or rejection of a particular tender will not be disclosed. The award of work will be further subject to any specific terms and conditions of this Tender.

7. Right of Acceptance:

The Tender inviting authority has all rights to reject any tender including of those tenders who fail to comply with the instructions without assigning any reason whatsoever and does not bind himself to accept the lowest or any specific tender. The decision regarding this shall be final and binding.

8. Communication of Acceptance:

Successful Tenderer will be informed of the acceptance of his tender.

9. Security Deposit.

An interest free Security Deposit of 5% of Total Work value shall be deposited in the form of Demand Draft / Bank Guarantee from a commercial Bank. Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligations by the supplier including warrantee obligations.

10. Penalty

For delay in completion of work, the liquidated damage @ 1% of order value per week or part thereof subject to the maximum of 10% of the order value shall be deducted.

11. Breach of Terms and Conditions:

In case of breach of any of terms and conditions mentioned above, the Competent Authority will have the right to cancel the work order without assigning any reason thereof, and nothing will be payable by this Hospital in that event and the performance security deposit shall be encashed and contractor will also be debarred from taking part in tendering process for five years period.

- (1) The firm shall not assign or sublet the work or any part of it to any other person or party.
 - (2) The tender is non transferable.
 - (3) Tenderer has to quote rate including GST.
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12. Terms of payment:

No payment shall be made in advance.

All payments shall be made by cheque / e-payment only.

Payment will be done against 3 invoices only. Minimum amount will be 10,00,000/-

13. Unit Rate

Total price includes all duties, Taxes, Transportation expenses, loading and unloading charges and all other expenses connected with installation of the equipment at the site. No additional charges will be paid.

14. Warranty Terms

Standard Warranty 1 year. Warranty is comprehensive and includes all labour, spares, consumable spares and accessories. Additional years will also be taken for L1 calculation.

15. Arbitration:

If any difference arises concerning this Agreement, its interpretation on the payment to be made there under, the same shall be settled by mutual consultations and negotiations.

16. Force Mejure:

The vendor shall not be liable for forfeiture of its bid security, performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure. Force Majeure means an event beyond the control of the supplier and not involving the vendor's fault or negligence and not foreseeable.

17. Safety/Site Conditions:

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations and ensure that the methods of carrying out the Work and the Work by the Contractor including his workmen, employees, Sub-Contractors and Vendors meet all the necessary safety standards and requirements. In order to fulfill this obligation the Contractor shall appoint a permanent, full time and suitably qualified safety officer for the Site, who shall be responsible for incorporation, implementation and enforcement of all safety measures and requirements for maintaining safe working conditions, safety of manpower and equipment, general safety and security of Site as per the various safety codes and stipulations mentioned in contract documents. The Contractor shall provide Id-Cards (Identity Cards) to each of his worker with designated number & colour only of the card as directed by the Engineer-in-Charge.

The Contractor has full responsibility for maintaining the Site in good and clean

condition and removing all trash and debris on a daily basis to the satisfaction of the Engineer..

Additional Safety Regulations: The Contractor shall continuously maintain adequate protection for the Work against fire and other hazards and shall protect the Employers /Engineer-in-Charges property from damage or loss during the performance of this Contract. The Contractor also shall adequately protect property adjacent to the Work. The Contractor shall take all necessary precautions for the safety of its employees, Subcontractors and the Vendors performing the Work and later phases of the Work and shall comply with all applicable safety laws and regulations to prevent accidents or injury to persons on, about, or adjacent to the Site. The Contractor shall be responsible for coordinating a safe working programme with the Engineer. Such a programme shall include, and the Contractor shall be responsible for maintaining, the following safe working conditions and practices:

All combustible material, food matter, garbage, scrap, and other debris generated during the performance of the Work shall be collected and removed from the Site on daily basis. Arrangements for scrap disposal should be discussed with Field Engineers.

An adequate number and type of fire extinguishers and sand buckets shall be provided at the Site for fire control and shall be kept/maintained in satisfactory and effective working condition. at all times.

The Contractor and its employees, labourers and subcontractors shall strictly obey all "No Smoking" restrictions.

The Contractor shall not operate or use or manipulate utilities already established at the Site without the Engineer- in-Charge's prior written approval.

The use of intoxicants or unlawful drugs at the Site, in any degree, shall be strictly prohibited. The Contractor shall rigorously enforce this regulation. When overhead work is in progress in or around an occupied area, signs to denote such work prominently displaying "Overhead Work" shall be used and a barricade shall protect the Dusty work, such as concrete breaking or demolition, in or near occupied areas, sh proceed only after wetting down the area and taking steps necessary to prevent dust free penetrating occupied areas and creating nuisance.

Care shall be taken not to block any door, passageway, and safety exit, firefighting equipment, or safety equipment with materials or equipment. Materials must be piled, stacked, or stored in a neat and orderly manner. All stacking the site, whether inside or outside a building, shall be parallel to or at right angles to t building line or fence. The stacking of materials shall be organised on daily basis.

When noisy operations of a prolonged nature are necessary in or near an occupied arrangements must be made with the Engineer-in-Charge for scheduling to minimize nuisance in the occupied area.

All critical and dangerous locations / areas at site shall be marked with caution sig indications and directions in the form of well-designed and uniform signage, the

design signage shall be approved by the Engineer

SPECIAL TERMS AND CONDITIONS

1. In case the firm fails to supply the items within specified delivery period, the material will be procured from any other competent agency and the difference of cost, if any, will be recovered from pending bills of defaulting firm by issuing notice and necessary action for blacklisting the firm also be taken.
 2. No request for increase in the rates will be entertained during the period of contract nor will the firm raise the same.
 3. All Equipments/Accessories supplied by the firm should be as per specifications mentioned in the tender document; sub-standard material will not be accepted at all.
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TECHNICAL INFORMATION

1. Name of the Tenderer/Concern: _____
2. Address (with Tel. & Mob. No.): _____
3. Nature of the concern (i.e. Sole Proprietor or Partnership firm or a Company or a Government Department or a Public Sector Organization.)(Attach Proof.)
4. Registration Number of firm _____
(Attested photocopy of registration should be attached)
5. PAN Number of Tender/Concern: _____
(Attested copy should be attached)
6. Sale Tax/VAT registration certificate and TIN Number _____
7. Annual turnover of firm _____
(Attach Proof.)
8. Whether each page of Tender have been signed and stamped _____ YES / NO
9. Details of experience _____
(Attested photocopies of work orders for last 3 years).
10. Details of Civil suits/Litigation, if any, in the contracts executed during the last 5 years/being executed. If yes, please furnish the name of the contract employer, nature of work, contract value, work order and brief details litigations. _____
11. Detail of EMDs :-

Tender	Name of Bank	Draft No. & Date	Amount [Rs.]
Tender for supply installation & commissioning of MGPS OT Pendants and BHPs			_____

12. Any other information important in the opinion of the tenderer.

Dated :

(Signature of Tenderer)

Place :

With stamps of the firm)

UNDERTAKING

1. I/We undertake that I/we have carefully studied all the terms and conditions and understood the parameters of the proposed work.

2. I/We also undertake that I/we have understood the terms and conditions mentioned in the Tender and shall execute the work strictly as per the terms and conditions mentioned therein in the Tender Form.

3. I/We further undertake that the information given in this tender are true and correct in all respect and I/we hold the responsibility for the same.

Dated:

Place :

(Signature of Tenderer

With stamps of the firm)

TECHNICAL SPECIFICATIONS

1) COPPER PIPES

The copper pipes shall be manufactured from phosphorous de-oxidised non-arsenical copper of grade CW024A (Cu-DHP), manufactured EN 13348:2008 to metric outside diameters and having mechanical properties, pipes shall be of R250 (half hard) temper.

Pipes shall be degreased suitable for oxygen use and cleanliness is to be maintained by filling each pipe with dry, clean, oil and oxygen free nitrogen, fitting suitable end caps and protectively wrapping. Solid drawn, seamless, deoxidised, non-arsenical, half hard, tempered and degreased copper tubes manufactured to metric outside diameters and should have mechanical properties in accordance with HTM 02-01 and conforming to EN13348:2008.

All indigenous copper pipes should be inspected and certified by Third Party Inspecting Agency Lloyds' Register Services before dispatch and the pipes should be delivered capped at both ends. Imported Copper pipe should have equivalent certification. The pipes should also be accompanied with manufacturer's test certificate for the physical and chemical composition. Copper Fittings should be as per HTM 02-01. All plastic saddles should have brass screws.

The pipe sizes to be used are from among as under:

1. 28mm OD x 0.9 mm thick
2. 22mm OD x 0.9 mm thick
3. 15mm OD x 0.9mm thick
4. 12mm OD x 0.7 mm thick

Medical Gas Pipeline Fittings shall be end feed type, manufactured from the same grade of copper as the pipes and be in accordance with the requirements of BS EN 1254-1:1998 Part 1. The manufacturing company should comply with BS EN ISO 9001:2000. Fittings should be factory degreased suitable for oxygen use. Fittings should be certified for medical use and accompany with oil analysis certificate and conformity certificate indicating suitability for medical use. Copper fittings shall be made of copper and suitable for a steam working Pressure of 17 bar and especially made for brazed socket type connections.

2) VALVES – LINE VALVES

Line Valves shall be provided for use in plant rooms and to facilitate the isolation of areas or areas where area zone valve are unnecessary. These shall be of the ball valve type and shall be constructed of a nickel plated brass body, PTFE seats and brass chrome plated ball. The valve shall be operated by a manual operating lever by 90° turn. All medical gas line ball valves shall provide a full bore flow and shall be cleaned for oxygen service and fully tested. The valve assembly shall terminate in copper stub pipes to enable brazing directly into the distribution system using the flux less brazing technique. Line valves shall be located in readily accessible areas of ducts and shafts, however care should be taken to ensure safety to prevent danger from leakage. Line valve installation should be carried out as per HTM 02-01 standards.

Valve Size are indicated

- a) 12mm Ball Valve
- b) 15mm Ball Valve
- c) 22mm Ball Valve
- d) 28mm Ball Valve

3) GAS OUTLETS

DIN/ BS Standard, Quick connect, Metallic, Double locking, parking, Geometric indexed gas specific safety, Imported, It Should have safety certificate from a competent authority CE issued by a notified body registered in European Commission.

4) AREA VALVE SERVICE UNITS (AVSU) WITH ALARM

The Area Valve Service Unit (AVSU) shall provide area isolation facility for use either in an emergency or for maintenance purposes. The area valve service unit shall be labeled to identify the Medical gas service

The assembly shall be housed in a valve box which shall be capable of both surface or concealed mounting incorporate a hinged lid which opens through 180 degree, to provide maximum access. The hinged door shall be fitted with a glass panel to enable a visual check on the line valve selected position and for access in an emergency.

Area or Zone identification facilities shall be provided. The hinged door shall normally be locked closed and area zone valves installed adjacent to each other shall be operated by different key lock combinations.

Area/Zone service units shall be fitted in readily accessible locations adjacent to the area which they serve and shall be clearly labeled to indicate function, valve position and area.

Scope:

The tenderer of Medical gas shall supply, install, test and commission all safety required for the medical gas system safety relief valves as specified in HTM 02-01/ NFPA standards.

The tenderer of Medical Gas supply shall install test and commission all area valve and service unit AVSU in the hospital as per requirement as specified in HTM 02-01, to all necessary equipment, pipe work fittings, boxes, accessories, connectors pressure gauges, switches including the zone pressure alarm panel and all related electrical works to have complete and full operational AVSU unit.

The tenderer of Medical Gas shall supply, install, test and commission all required valves, check valves for the medical gases and vacuum system.

- 1) Area Line Pressure Medical Gas Alarm
- 2) Four channel microprocessor controlled alarm for pneumatic & vacuum services.
- 3) Digital display of line pressure for all the services with factory calibrated pressure sensors.
- 4) Color coded LED display of line pressure status (High-caution-normal-caution-low)
- 5) Audible Alarm for High & Low pressure condition.
- 6) Test and Alarm Acknowledge (Mute) facility. (Alarm knowledge (mute) time span is programmable from 1 to 60 minutes). Protected programming facility of alarm limits.
- 7) The electronic circuitry should be such that if the pressure / vacuum in the gas pipeline drops below the present limit, the equipment should give an audio-visual alarm. Visual alarm should remain active even after pressing of "Mute" button. It should come to normal condition only when gas pressure / vacuum return to normal level.
- 8) Small and compact design.
- 9) Mounted on a powder coated MS box.
- 10) Nut & Nipples should be provided for connection with Pneumatic supply line.
- 11) Low voltage internal operation for safety with input power supply of 230 V,50 Hz AC.
- 12) Wall mounting facility.

MATCHING PROBES FOR GAS TERMINAL UNITS – O₂, Mair, N₂O, and Vac

The probe should comply with BS 5682:1998 for gases & Vacuum.

Matching probes with one end suitable for hose/ flow meter and other end suitable for Imported & Indigenous Medical Gas terminal units which complies and fully meets with the latest standard HTM02-01 and C11

INSTALLATION & TESTING

Installation of piping shall be carried out with utmost cleanliness. Only pipes, fittings and valves, which have been degreased and brought in polythene sealed bags, shall be used at site. Pipe fixing clamps shall be of non-ferrous or non-deteriorating plastic suitable for the diameter of the pipe.

Where pipes are cut on site, the wheel cutter should be used (avoid using hacksaw blade) and should be cut square and de-burred, re-rounded and cleaned off before use.

All pipe joints shall be made using flux less brazing method.

Heat/Flame Source: Brazing shall be carried out using Oxy-acetylene/ Diluted Acetylene flame source capable of achieving brazing temperatures of above 600 degrees and below the melting point of the base metal. Liquid Petroleum Gas (LPG) should not be used for brazing of copper pipes.

Copper to Copper Brazing – should be made using a silver-copper-phosphorous brazing alloy CP104 (5% Silver Brazing

Filler metals Rod) to BS EN 1044-1999, no flux to be used.

Copper to Brass Brazing – should be carried out using AG 203 (43% Brazing Filler metal Rod) to EN 1044 with an appropriate flux.

Brazing of Copper to brass should not be carried on site and the flux residue should be chemically removed and if necessary the complete assembly is cleaned and degreased for oxygen service.

Oxygen Free Nitrogen (Inert Gas Shield) Purging – Brazing should be carried out using Oxygen free Nitrogen as an internal inert gas shield to prevent the formation of oxides on the inside of the pipes and fittings. Oxygen free nitrogen should be supplied to the inside of the pre-assembled, un-brazed pipe work while brazing through a pressure regulator and flow controller of flow regulating device. This method leaves a bright, clean bore. A slight burnishing may occur in some cases; however purging is still required to remove internal shield gas and the other particulate matter not associated with Brazing operation. Nitrogen purging is not required for AGS disposal systems.

Capping – Sections of pipeline should be capped as soon as they are completed so as to prevent the ingress of debris. Adequate supports shall be provided while laying pipelines to ensure that the pipes do not sag. The spacing of supports shall not exceed 1.5 meter for any size of pipe. Suitable sleeves shall be provided wherever pipes cross through walls / slabs. All pipe clamps shall be non-reactive to copper.

After erection, the pipes should be flushed with dry nitrogen gas and then pressure tested with dry nitrogen / Medical Air at a pressure equal to twice the working pressure for a period of not less than 24 hours. All leaks and joints revealed during testing should be rectified and re-tested till the pressure in pipes stands for at least 24 hours.

Installation, Testing and Commissioning of Medical gas pipelines should be carried out as per HTM 0201 standards.

All the piping system should be tested in the presence of authorized representative of the user institute or tender inviting authority.

COLOUR CODING

All exposed pipes should be painted with two coats of synthetic enamel paint and colour codification should be as per ISO standards.

Oxygen Line – White

Nitrous oxide – Blue

Air Line- Black and White

Vacuum Line – Yellow

After completion of work, MGPS Diagram should be prepared and submitted.

HORIZONTAL BED HEAD PANEL TYPE A

1. Length 1.2 metres
 2. It should be made of High Strength Anodised Aluminium Profiles with integrated rail system for mounting accessories.
 3. Should be powder coated (color as per user choice).
 4. Should provide back side cover & end side cover
 5. The panel should have provision for
 - a. Electrical Points 3 No of 16A Sockets with Switches
 - b. RJ 45 Data outlet-1 No
 - c. Medical Gas Outlets-2 No (Oxygen 1 ,Vacuum 1)
 6. Syringe Infusion pump mounting pole with adapters for mounting at least two pumps
 7. Segregation and isolation of services i.e separation for low voltage supplies, high voltage supplies, medical gases & IT (3 Bay Routing)
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HORIZONTAL BED HEAD PANEL TYPE B

1. Length 1.5 metres
2. It should be made of High Strength Anodised Aluminium Profiles with integrated rail system for mounting accessories.
3. Should be powder coated (color as per user choice).
4. Should provide back side cover & end side cover
5. The panel should have provision for
 - a. Electrical Points 6 No of 16A Sockets with Switches
 - b. RJ 45 Data outlet-1 No
 - c. Medical Gas Outlets-5 No (Oxygen 2 ,Vacuum 2, MA4 2)
6. Syringe Infusion pump mounting pole with adapters for mounting at least two pumps
7. Segregation and isolation of services i.e separation for low voltage supplies, high voltage supplies, medical gases & IT (3 Bay Routing)

HORIZONTAL BED HEAD PANEL C

1. Minimum length 1.8 metres
2. It should be made of High Strength Anodised Aluminium Profiles with integrated rail system for mounting accessories.
3. Should be powder coated (color as per user choice).
4. Should provide back side cover & end side cover
5. The panel should be designed to have provision to accommodate the following:
 - a. Electrical Points 8 No of 16A Sockets with Switches
 - b. RJ 45 Data outlet-1 No
 - c. Medical Gas Outlets-7 No (Oxygen 2 ,Vacuum 2, N2O 1, MA4 1, SA7 1)
6. Syringe Infusion pump mounting pole with adapters for mounting at least two pumps
7. Segregation and isolation of services i.e separation for low voltage supplies, high voltage supplies, medical gases & IT (3 Bay Routing)

SINGLE ARM CEILING PENDANT

- 1) Ceiling mounted Pendants comply with NFPA 99C/HTM 02-01 with 2.5mm Thick high strength Aluminium with Powder coated finish or better.
 - 2) The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position
 - 3) Single moveable arm with total coverage of min 1000mm and 300 deg
 - 4) High quality imported Steel bearing should use for rotation
 - 5) High Grade Steel pipe should use to suspend the system. The pipe should be Galvanized and powder coated
Stem Pipe size should be of 110mm Outer Diameter or more.
 - 6) High strength Aluminium Arm (6063 – T6 grade) should measure 190mm L x 110mm B X 10.5mm (Thickness) x 900/1000 mm or more Length.
 - 7) Only stainless steel fasteners should use for ceiling Mount 16mm X 150mm (Preferably Hilti or Equivalent make)
 - 8) Pendant Column load carrying capacity should be 150 Kg or more.
 - 9) 4 Nos Equipotential points should provide for EPB (Equipotential Bonding)
 - 10) No Visible Screws on Pendant Head Unit.
 - 11) Pendant box internal wiring system should be PVC duct wiring. The heads should be capable of accepting a range of shelves, infusion poles, electrical switch/sockets, gas outlets other accessories as asked in tender. The Pendant Heads should support the range of Physiological Monitor Mounting Solutions. The Head box should measure 360mm Lx 200mm B x 1200mm H or more in size
 - 12) IV Poles should be made of stainless steel 304 grade matt finish and Trays/shelves should be made of Aluminium with powder coated antibacterial finish.
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- 13) Tray measures 550mm L X 400mm X 25mm Thickness and should carry 20 kg weight (or better) should be provided. Stainless steel rail support should be provided for accessories attachment.
- 14) Pendants with European CE Certified with 4 digit notified body number or US FDA approval have better preference
- 15) Pendant should have provision as mentioned below
 - a) Medical Gas Outlets 8 No (Oxygen – 2 nos, Vacuum – 2 nos. Air (4 bar) – 1 no, Air (7 bar) -1 no, Nitrous - 1 no, Carbon Dioxide – 1 no)
 - b) Electrical sockets - 8 nos with switches (6/16 A)
 - c) Data socket RJ-45 -2 nos.
 - d) Adjustable Shelf with two rails – 1 no To be supplied (Rate of rail to be quoted separately for addition in future)
 - e) IV Fluid Pole with 2 hooks – 1No. To be supplied (Pole should be capable of stacking 4 nos of syringe pumps)

DOUBLE ARM CEILING PENDANTS

- 1) Ceiling mounted Pendants comply with NFPA 99C/HTM 02-01 with 2.5mm Thick high strength Aluminium with Powder coated finish or better.
 - 2) The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position
 - 3) Double moveable arms (any combination) with total coverage of min 1800mm and 300 deg
 - 4) High quality imported Steel bearing should use for rotation
 - 5) High Grade Steel pipe should use to suspend the system. The pipe should be Galvanized and powder coated
Stem Pipe size should be of 110mm Outer Diameter or more.
 - 6) High strength Aluminium Arm (6063 – T6 grade) should measure 190mm L x 110mm B X 10.5mm (Thickness) x 900/1000 mm or more Length.
 - 7) Only stainless steel fasteners should use for ceiling Mount 16mm X 150mm (Preferably Hilti or Equivalent make)
 - 8) Pendant Column load carrying capacity should be 150 Kg or more.
 - 9) 4 Nos Equipotential points should provide for EPB (Equipotential Bonding)
 - 10) No Visible Screws on Pendant Head Unit.
 - 11) Pendant box internal wiring system should be PVC duct wiring. The heads should be capable of accepting a range of shelves, infusion poles, electrical switch/sockets, gas outlets other accessories as asked in tender. The Pendant Heads should support the range of Physiological Monitor Mounting Solutions. The Head box should measure 360mm Lx 200mm B x 1200mm H or more in size
 - 12) IV Poles should be made of stainless steel 304 grade matt finish and Trays/shelves should be made of Aluminium with powder coated antibacterial finish.
 - 13) Tray measures 550mm L X 400mm X 25mm Thickness and should carry 20 kg weight (or better) should be provided. Stainless steel rail support should be provided for accessories attachment.
 - 14) Pendants with European CE Certified with 4 digit notified body number or US FDA approval have better preference
 - 15) Pendant should have provision as mentioned below
 - a) Medical Gas Outlets 8 No (Oxygen – 2 nos, Vacuum – 2 nos. Air (4 bar) - 2 nos, AGSS - 1 no, Nitrous oxide – 1 nos)
 - b) Electrical sockets - 8 nos with switches (6/16)
 - c) Data socket RJ-45 -2 nos.
 - d) Adjustable Shelf with two rails – 1 no To be supplied (Rate of rail to be quoted separately for adding in future)
 - e) IV Fluid Pole with 2 hooks – 1No. To be supplied (Pole should be capable of stacking 4 nos of syringe pumps)
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Annexure – B

N.S Memorial Institute of Medical Sciences (A unit of Kollam Dist. Co-operative Hospital society Ltd., No. Q.952)

WORK NAME: Supply, Installation & Commissioning of MEDICAL GAS PIPELINES,

OT PENDANTS AND BHPs

Bidder Name :

PRICE SCHEDULE

This BOQ template must not be modified replaced by the bidder and same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the bidder name.

Tender Invited Authority: - Dep of Biomedical Engineering NSMIMS

Sl No	Description	Unit	Quantity	Unit Rate	Amount in Figure	Amount in Words
1	Supply, Installation, testing and commissioning of copper pipe per mtr. It must comply with EN 13348 as per technical specifications (Preferred make: Mexflo/Mandev)					
	12mm	Mtr	80			
	15mm	Mtr	690			
	22mm	Mtr	230			
	28mm	Mtr	215			
2	Supply, Installation, testing and commissioning of Gas outlets meeting requirements of EN ISO 9170-1 or as per equivalent national standards. (Preferred make: S Kumar/Aktiv)					
	O2 Outlets with Probes (DIN)	Nos	20			
	O2 Outlets with Probes (BS)	Nos	26			
	Air (4 Bar) Outlets with Probes (DIN)	Nos	14			
	Air (4 Bar) Outlets with Probes (BS)	Nos	6			
	N2O Outlets with Probes (DIN)	Nos	10			
	Air (7 Bar) Outlets with Probes (DIN)	Nos	6			
	CO2 Outlets with Probes (DIN)	Nos	4			
	Vacuum Outlets with Probes (DIN)	Nos	20			
	Vacuum Outlets with Probes (BS)	Nos	28			
	AGSS Outlets with Probes (DIN)	Nos	4			
3	Supply, Installation, testing and commissioning of Area Valve Service Units					

	+ Alarm Units with audible alarms and indications as per equivalent national standards (Preferred make: S Kumar/Aktiv)					
	2 Gas- O2 & Vacuum	Nos	3			
	3 Gas- O2, MA4 & Vacuum	Nos	1			
	5 Gas- O2, MA4, SA7, Vacuum, & N2O	Nos	1			
	7 Gas- O2, MA4, SA7, Vacuum, N2O, CO2 & AGSS	Nos	4			
4	Supply, Installation, testing and commissioning of Ball Valves complying with HTM 02-01 or as per equivalent national standards (Preferred make: Bongas/I tap)					
	12mm	Nos	37			
	15mm	Nos	36			
	22mm	Nos	15			
	28mm	Nos	4			
5	Supply, Installation, testing and commissioning of Double Arm Pendant. Check Technical specifications (S Kumar/Aktiv/Oxylab)	Nos	4			
6	Supply, Installation, testing and commissioning of Single Arm Pendant. Check Technical specifications (S Kumar/Aktiv/Oxylab)	Nos	4			
7	Supply, Installation, testing and commissioning of 1.2 Metre Bed Head Panel. Check Technical specifications	Nos	9			
8	Supply, Installation, testing and commissioning of 1.5 Metre Bed Head Panel. Check Technical specifications	Nos	6			
9	Supply, Installation, testing and commissioning of 1.8 Metre Bed Head Panel. Check Technical specifications	Nos	2			
10	Supply, Installation, testing and commissioning of Brass Nut & Nipples for connecting high pressure antistatic hose with Cu pipes	Nos	112			
11	One touch Connectors (With necessary Pneumatic tubes)	Nos	RO			
12	Deinstallation of existing fixed pendants	Nos	4			
13	Buy back value for existing fixed pendants	Nos	4			

Total Amount In Figure

Total Amount in Words

Sign & Seal