**EMS MEMORIAL CO-OPERATIVE HOSPITAL & RESEARCH CENTRE**
**PERINTALMANNA**

**Technical specifications of Medical Equipment**

# QUOTATION NOTICE FOR PURCHASE OF MEDICAL EQUIPMENT

EMCH / QTN /GEN / 11 / 2023 22nd November 2023

Sealed quotations are invited from reputed manufacturers / authorised suppliers / dealers for the supply and installation of following

Cath Lab, OCT Machine, 4 K Laparoscopic Unit, Anesthesia Work Station, Portable USG Machine, ENT Drill, Drill for Neurosurgery, Battery operated Ortho drill, Light source for Laparoscopic unit, Echo Cardiography Machine, MRI compactable Ventilator, Echocardiography, Laser for Urology & Gastroeneterology, Flexible Uretheroscope, Various equipment for Gastroenterology Department, Bipap Ventilator

Technical specifications of the equipment can be obtained from www.emshospital.org.in/emshospital_tenders.php

Quotations should be in Two sealed covers

- First cover super scribed " Technical cover" should include technical specifications, list of installations etc
- Second cover super scribed "Commercial cover" should include commercial terms such as Price, Warranty terms, tax if any, AMC / CMC details for next 5 years, cost of consumable / spare parts / consumables regularly required etc.
- Technical quotations will be scrutinized by a technical committee.
- Technically qualified quotations will only be considered for opening of Commercial quotations. L1 will be considered for further negotiation.

Sealed quotations addressed to The General Manager, EMS Memorial Cooperative Hospital, Perintalmanna should reach the Administrative Office of the hospital on or before **8th December 2023 by 4 PM**.

**General Manager**

November 2023

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# CATH LAB

1. The offer shall be for single -plane flat panel digital cardiovascular angiography system and ancillary equipment capable of meeting the essential requirements of a cathlab usable for Cardiology as well as Neurology purpose. The platform should be able to accommodate all the up-gradations required later (as and when required) to add on more and more special features.

2. The equipment should be of the state of the art design, incorporating all the latest facilities and modern concepts of digital angiography systems. Only a single model of such system should be quoted. All components must be compatible with the main system and with each other.

3. The main Angiography system should be FDA approved & comply with BARC & AERD guidelines. Copies of certificates should be attached.

4. The model quoted must be latest & most advanced and spares & services must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working condition with at least 95% uptime.

5. Warranty 2 years should be inclusive of all spares including X-ray tube . The CMC Rates offered should also include all spares including X-ray tube .Warrenty /CAMC should be inclusive of all equipment irrespective of their manufacturing companies which are included in the package to ensure timely and effective performance of the machines.

## Technical Specifications

### 1 . GANTRY

1.1. Floor /ceiling gantry with better maneuverability.
1.2. Facility for motorized / combined positioning / rotating of stand from the floor / ceiling pivot for improved work flow and for ease of operation from both left and right side of the patient in addition to zero degree normal head end position( better access at head-end)
1.3. Patient access should be possible from either left or right side and head end side
1.4. Head to toe coverage of minimum of 210 cm, whole body imaging without repositioning the patient should be possible.
1.5. Gantry depth should be 90 cm or more for better groin access.
1.6. Gantry should move at 25deg /sec or higher rotation / angulations speed with non – contact sensing mechanism( no collision protection switches).
1.7. Gantry rotation/ angulations at least +/-125 deg and +50degree/ -45 degree CRAN/CRAUD (Better preference will be given for better movements ).
1.8. Storage and recall of at least 30 gantry position should be possible.

### 2. TABLE

2.1. Table with Full body coverage with atleast 280cm length & motorized up/down.
2.2. Free floating 4 way table top ,least radiation attenuation , at least 200kgs+ atleast 50kgs of additional weight for resuscitation in the metal free over hang area without having to retract the table back on its base .
2.3. The table should support radial as well as femoral type procedures.
2.4. Table should be with wide carbon fibre table top and with restraining facilities.

2.5. Table sided controls should be available for c-arm, table and collimator movements, low dose option and online selection of QCA, Road map, DSA and other protocols.
2.6 Table should be capable of swiveling for emergency patient shifting purposes

## 3. DETECTOR

3.1. Flat detector of latest generation. 1024 X 1024 matrix at 15/30 fps with 16 bit digitization.
3.2. Diagonal length of 35 cm at least, which is suitable for cardiology. TAVI as well as neurology applications .
3.3. 2 formats of zoom.
3.4. DQE of the entire detector: not less than 65%, higher preferred: please specify in specification.
3.5. Min pixel pitch of atleast 185 µm, lower prefrred for better resolution.
3.6. The system should have a facility to remove the anti-scatter grid on the detector for ensuring lower dose in pediatric imaging.

## 4. X RAY

4.1. X-ray generator should be 100 KW latest technology high frequency generator with facility to automatically adjust the dose according to the size of patient.
4.2. Noise-free, oil/water cooled, rotating anode x ray tube with spiral groove bearing/ liquid metal lubricant for faster cooling should be provided.
4.3. The tube/ generator should be with switching technology to reduce soft radiation.
4.4. Tube should have atleast 2 focal spots and suitable for Neurology purpose (larger not more than 1mm ) .
4.5. The X ray tube should have high cooling rate, with technology for continues and noiseless operation and capable of pulsed fluoroscopy on both focal spots.
4.6. Tube with anode heat capacity above 3 MHU and cooling rate of atleast 6000W
4.7. In case anode heat capacity is less than 3 MHU cooling rate must be 10000W or more.
4.8. Additional beam filtration up to 0.9mm cu equivalent.
4.9. Automatic different filter sizes protocols at the table side.
4.10. System should be capable of delivering minimum 2500W continuous fluoro power with fluoroscopy Ma range minimum 180 or better .
4.11. Mention all advanced dose reduction features and should be provided as standard.
4.12. Automatic adaptive filtration should be available with 5 level filters as standard

## 5. MONITORS

### 5.1. EXAM ROOM

5.1.1. Total 3 or more nof 19'' LCD -TFT Medical grade monitors or equivalent in single monitor for live.& Reference ,stent enhancement images and vitals monitoring
5.1.2. Data display on monitor should also be available for arm, table geometry readings and system messages.
5.1.3. Monitor should be ceiling mounted with up/down movement and have capability of sliding view from left and right of the patients.
5.1.4. Facility for sharing some of the monitors for display of stent enhancement images, IVUS, FFR and EP should be possible.

## 5.2. CONSOLE ROOM

5.2.1. Total 2 or more no of 19''LCD-TFT Medical Grade monitors or equivalent in single monitor for patient registration & reporting , live and reference images or single moniros with equivalent .
5.2.2. An additional ordinary slave monitor for hemodynamic monitoring.

## 5.3. ALL MONITORS SHOULD BE MEDICAL GRADE HAVING

5.3.1. Flicker free, distortion-free
5.3.2. High resolution
5.3.3. High contrast
5.3.4. Wide viewing angle
5.3.5. Brightness at least 400cd/m2
5.3.6. Automatic gain, brightness control

## 6. IMAGE PROCESSING, STORAGE AND APPLICATIONS

6.1 At least 100,000 images on line in 1024 X 1024 matrix or equivalent (mention bit level) with immediate replay to be available in the main system hard disk(not reckoning the storage space in the CD station).
6.2. Images can be acquired at 3.75/7.5/15/30 images per second speed in fluoro acquisitions.
6.3. Images can be acquired at 7.5/15/30 images per second speed in cine acquisitions.
6.4. Pulsed fluoroscopy should be available at above frame rates.
6.5. Advanced image processing technique for
  6.5.1. Real time edge enhancement.
  6.5.2. Real time harmonization.
  6.5.3. Real time noise reduction and dose correction algorithms.
6.6. All above techniques must be applied real time in fluoro as well as acquisition .please conform .
6.7. Clinically validated QCA online in the exam room.
6.8. It should be possible to do QCA from table side.
6.9. It should be also possible to do QCA in the console room.
6.10. System should be capable of virtual collimation of the shutters and wedges in the last image to reduce the X ray dose .
6.11. System should be capable of measuring and displaying patient dose.
6.12. System should capable of storage and display of dynamic fluoro sequences.
6.13. System should be capable for printing /sending dicom images on the dicom printer/ laser camera.
6.14. Lower frame speeds of 1,2,4 or 6 images /sec or carotid/ renal /abdominal aortic application.
6.15. True on-line DSA at above selectable frame speeds.
6.16. System should be have road mapping facility wherein subtracted roadmap is superimposed on live fluoroscopy.

6.17. The system should have on-line & off-line coronary and left ventricular analysis program.
6.18. The software should have auto calibration facility for stenosis measurement with edge enhancement and geometrical and densitometry calculations.
6.19. The analysis should be possible from table side in the examination room and from the control room.
6.20. Selection of stent enhancement and the DSA should be possible from the examination room.
6.21. Virtual collimation, LIH ,auto adjustable cu filtration should be possible.
6.22. The system should have facility to visualize estimated local patient dose all along the exam.

6.23. Better stent viewing HW and SW to significantly improve localized stent visibility in addition to any in built software for stent visibility improvement .
6.24. The stent visualization tool should improved all and any kind of software, hardware, image processing tools for improving, enhancing or in any other way augmenting the visualization of stent shutters , visualization of stents relative to vessel wall for bifurcation, trifurcation, BVS scaffold viewing and should be the latest and mos technologically advanced version.
6.25. Stent viewing SW should have capability of showing fade-in fade out of lumen for better stent visibility in relation to coronary artery wall.
6.26. Real time noise reduction and dose correction algorithm.
6.27. System should be capable to give structured dose reports .
6.28. Fluro save software

## 7. SINGLE HEAD PRESSURE INJECTOR

7.1. Single head pressure injector of reputed make with 200nos. Of 100ml disposable sterile syringes sets should be provided.
7.2. Pressure 300psi with flow rate 0.1 to 10ml/s .
7.3. Volume 180ml .
Battery operation preferred .

## 8.HEMODYNAMIC RECORDER:

8.1 Hemodynamic recorder with FFR capability-minimum 2 invasive pressures and 12 channel ECG with SPO2 , NIBP ,respiration and cardiac output mesurements along with thermal /laser printing capability .
8.2 It should have a 12 '' or more display on the monitor carriage .

## 9. ACCESSORIES TO BE QUOTED WITH THE SYSTEM :

9.1. Suitable UPS and batteries with 15 minutes back up for complete system.
9.2. A ceiling suspended focus lamp with adjustable arm and removable handle for sterilizing should be provided.
9.3. A remote intercom facility between examination room and console room.
9.4. Lead apron light weight coat type-8 no.
9.5. Lead apron light weight skirt and vest type-8 nos.
9.6. Bismuth lead apron cap -8(weight less).
9.7. Thyroid shield 12 no.
9.8. Lead goggles 12 no.
9.9. Ceiling suspended radiation protection-1 no.
9.10. Table mounted lower body radiation protection.
9.11. Lead glass window 100 X 80 cms.

## 10. WORKSTATION AND ARCHIVING :

10.1. A state of the art stand alone workstation should be provided.
10.2. Facility for acquired images to be transferred to the workstation seamlessly with out interrupting the procedure
10.3. Workstation should be able to archive 1000 patient data and to upgrade in future if required to higher capacities with easy retrieval by name , date of procedure or cath number.
10.4. The system should be able to read CD /DVD from outside sources with QCA facility and

facility to transfer the scenes to the procedure room

10.5. DICOM 3 based CD and DVD recording for dynamic cardiac image recording on CD .

10.6. DICOM CD 's to have review software embedded for instent review in any PC .

## 11. OTHERS :

11.1. Other unique features if any to be quoted as optional.

11.2. OCT ,IVUS ,FFR integration should be possible . (scope of same to be quoted in both technical and financial bid)

11.3. Doctors, nurses and operators training at site by specialist from supplier

11.4. Scope of turnkey works with responsibility matrix to be mentioned (in technical bid only).

11.5. The scope should include details of site requirements and all pre-installation works to be done.

## MANDATORY DOCUMENTS ALONG WITH TECHNICAL BID

- ✓ Compliance statement with technical specification
- ✓ Product datasheet,
- ✓ Details of service division
- ✓ Sales authorization letter from Manufacturer.
- ✓ Details of installations
- ✓ Company representative shoud be signed in the purchase contract.
- ✓ AERB type approval certificate for Tube and Machine

## Other terms and conditions

- Standard Warranty of 2years
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
- The Model quoted must be latest and most advanced and spare and service must be available for at least
- 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time

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# 4 K LAPROSCOPIC UNIT

## I.4K CMOS Camera System with recording facility (External or Internal)

1. The system should be truly Digital 4K endoscopic video camera.

2. The system should have the minimum Resolution of 3840 x 2160 pixels, progressive scan and the consistent use of 16:9 format for Input & Output to guarantee genuine 4K TV.

## II.4K Camera Head

1. 4K Camera Head resolution 3840x2160 pixel, 3 chip or equivalent 1/3" CMOS progressive Scan minimum 50HZ at least with 3 freely programmable camera head buttons and optical zoom lens of 2x dynamic optical/digital zoom range.
2. The system should have special features:
a) Should optimize image quality & Digital Source Sampling this maximizing 4K image transmission.
b) The system should have Optical Zoom/Digital zoom to enhance the quality of Image size & cross specialty standardization of the camera system, regardless of the telescope used
c) The system should automatically optimize all settings. The system should be ready to-use as soon as it is connected to the camera control unit.

## III. 4K Camera Control Unit

1. AGC: Microprocessor controlled

2. The system should be have the following features:

- Camera system should have at least three camera buttons to control the various functions of the camera from the camera head.
- Should have the facility to add fiberoptic filter

3. All the camera head button functions can be also controlled by the keyboard/touch screen from a non sterile field.

4. Video outputs- HDMI/DVI/3G HD SDI/12G HD SDI

5. HDMI/DVI/3G HD SDI/12G HD SDI Connecting Cable

6. Power supply — 220-240 VAC 50/60 HZ

7. Should have safety certificate from a competent authority CE issued by a notified body registered in European commission / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL for camera system.

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## IV. **Medical Monitor**

1. Medical grade 55" or more 4K Flat panel Monitor.
2. Maximum screen resolution 3840 x 2160 pixels, Image format 16:9
3. Video inputs : HDMI/DVI/3G HD SDI/12G HD SDI
4. Video outputs : HDMI/DVI/3G HD SDI/12G HD SDI
5. Power supply 220 - 240 VAC, 50/60 Hz
6. User-friendly Endoscopic video trolly or equivalent should be supplied along with the unit
7. Should have safety certificate from a competent authority CE issued by a notified body registered in European commission / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL for monitor

## V **Recording Device**

1. 4K Image capture facility with External / Inbuilt recording ; Should supply the necessary storage Hardware - External or internal hard disk / USB drive of at least 2 TB (better preference will be given for higher storage capacity)-along with.
2. Should be able to take video and still images during surgeries.
3. The system should support to take still images from recorded video footages

## **VI. Cold Light Source:**

1. Should have LED Light source
2. Long lamp life of minimum 30,000 hrs
3. Standby mode
4. Universal jaw assembly to adapt any make of fiber optic cable
5. Fibre optic light cable with straight connector size 4.8mm or above ,length 250cm or above.
6. Heat – Resistant
8. Adjustable brightness control
9. Should have light intensity indicator.
10. Should have safety certificate from a competent authority CE issued by a notified body registered in European commission / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed

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electrical and functional safety test report from ERTL for Light source

**VII. Electronic Insufflator**

1. Electronic insufflator of minimum 45 litres of high flow/minute
2. Soft approach pressure control for safe recovery of abdominal pressure.
3. Audio visual alarms
4. Should be supplied with in-let and out-let gas tubing, Universal Wrench and tools required, Sterile Filter package of 10 pieces.
5. Should work with input 200 to 240Vac 50 Hz supply.
6. Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL for Insufflator. Copy of the certificate / test report shall be produced along with the technical bid.

**VIII. Telescope -** High definition Straight forward Telescope 0 degree& 30 degree , Enlarged view, Diameter 10 mm, length(30-35) cm, Autoclavable, Fiber optic light transmission incorporated.

**IX. Telescope** High definition Straight forward Telescope 0 degree, Enlarged view, Diameter 5 mm, length(30-35) cm, Autoclavable, Fiber optic light transmission incorporated.

**MANDATORY DOCUMENTS ALONG WITH TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative shoud be signed in the purchase contract

**Other terms and conditions**

- Standard Warranty: 2 years
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost

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- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concept of Digital 4K Laparoscopy system. Only a single model of such system should be quoted.
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment / Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Warranty of 2 years should cover all parts of the unit including Telescope (except the Physical damage)
- Should have to mention the camera head weight

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## ANAESTHESIA WORK STATION

1. The workstation should have a built-in anesthesia ventilator with pressure, volume controlled, SIMV, Pressure support with apnoea backup& CPAP MODE
2. Support neonate, pediatric and adult patients.
3. Should be electronically controlled, pneumatically operated
4. Gas mixing type: Please specify
5. Should provide with adult and pediatric reusable and autoclavable light weight tubing breathing circuit.
6. Should be able to deliver a tidal volume from 5ml to 1200ml.
7. Should have a battery backup for 1 hour with low battery alarm and over charge protection.
8. Should have monitoring facility of airway pressure, tidal volume, frequency and oxygen concentration.
9. Should have pressure Volume and flow volume loops.
10. Should have display of at least 12 inches for set parameters and for measured parameters.
11. Should have automatic self test and leak test.
12. Anesthesia machine should be with 3 gas supply system (O2, N2O, Air) with pipeline connections and reserve cylinder yokes.
13. Gas cylinder (pin indexed) yokes with sturdy clamping bars for easy handling.
14. Should supply pin index yokes for connecting cylinders each for O2, N2O and air through pipeline.
15. Regulator two each for O2 and N2O. N2O should be activated only with oxygen on flow.
16. Should have pressure gauge for all gas inlets including central lines mounted on the front panel for easy visibility.
17. Should have audible alarm for O2 failure.
18. N2O supply should cut off if O2 supply fails. (Anti-hypoxic guard).
19. Oxygen and Nitrous oxide should be linked either mechanically or pneumatically to ensure a minimum of 25% oxygen delivery at all times to avoid delivery of hypoxic mixture
20. The anesthesia machine should have a master control ON/OFF switch.
21. Provision to mount any two selectable vaporizer with interlocking facility to allow use of only one vaporizer at a time.
22. Iso-flurane vaporizer of newer generation having specifications equivalent to tech 7 type to be provided.
23. Non-return cum pressure relief valve when pressure exceeds 120cmof H2O
24. Should have only one common gas outlet.
25. Should provide with oxygen flush switch.
26. Circle absorber with corrugated reusable breathing circuit for closed circuit system with each unit. It should be autoclavable. It should be with ventilator selector switch and circle on/off switch.
27. Should have low flow anesthesia technique.
28. Mention Fresh gas flow setting from 100ml/min to 12 Ltr/min.
29. It should have the indicator to show the efficiency of fresh gas setting while used in Low flow and minimal flow.

30. Should have a facility to connect the passive scavenging system.
31. Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid.
32. Should have a provision for mounting monitors on top of the machine and with drawers& working platform
33. Should have fiber wheels and Foot brakes.
    Standard circuit : Adult and pediatric , Jackson-Rees : 2 Nos, Reusable
34. Reservoir bag (2liters): 3 nos. with each machine.
35. AMBU bag: 1 no. with each machine.
36. Pressure regulated valve with 5 meter hose and connector (conversion kit) for oxygen should be provided with the machine.-2 no
37. Should be supplied with driver gas hoses with necessary attachments (colour coded).
38. Should be supplied with necessary attachments to use the breathing circuits Jackson-Rees, and closed circuit.
39. Should work in 220-240Vac 50 Hz input supply.
40. The Anesthesia machine and ventilator should be from same manufacturer.
41. The Model quoted must be latest and most advanced and spare and service must be provided for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
42. Standard warranty : 2 YEARS
43. AMC and CAMC Rate should be quoted in the price bid for 8 years after warranty period
44. Please attach a copy of
    (1) CE & FDA certificate if any
    (2) Compliance statement with technical specification
    (3) Product datasheet
    (4) Details of service division
    (5) Sales authorization letter from Manufacturer.
    (6) Details of installations
    (7) Company representative should be signed In purchase contract

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## Battery Operated – Operation Theatre Drill System for Orthopedics

1. Should consist of a Modular Hand – Piece that can connect to various attachments
2. System should be robust to sustain all the orthopedic procedures of Trauma,
3. All attachment fit to modular Hand-piece by means of quick change mechanism
4. Modular Hand - Piece & Attachments must sustain autoclave
5. Power Drive, a single hand- piece for DRILLING / REAMING
6. Modular Hand- Piece should be incorporate BLDC motor to deliver desired torque & reduce wear & tear.
7. Modular Hand-Piece to incorporate the latest dual – rotor- mechanism for effective torque for all procedures.
8. Modular Hand -Piece should have Forward / Reverse & SAFE mode.
9. The following attachments of specifications mentioned should work as standard rotary attachments
   a) Cannulated Drill Device (with cannulated of 4.1mm & diameter to accommodate between 0.8 to 6.35 mm designed to work at a speed of minimum 0-700 rpm with facility of instant reverse).
   b) Reaming Device (with cannulated of 4.1mm, accommodates reamers designed to work at a speed of minimum 0-260 rpm with facility of instant reverse) with AO type coupling.
   c) Quick coupling drilling attachment with a speed of 0-700rpm with instant reverse.
10. Batteries should be Lithium ion for maximum charge.
11. Dual port battery charger indicating the battery status.
12. For Battery Operated system :Supply through rechargeable batteries, should have option to accept both aseptic & sterilizable batteries and accommodate two batteries for charging simultaneously.
13. Instrument should have International Standard Safety requirement - CE mark.
14. Company should be ISO Certified.

## MANDATORY DOCUMENTS ALONG WITH TECHNICAL BID

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations

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- Company representative shoud be signed in the purchase contract

**Other terms and conditions**

- Standard Warranty should be for 2 years
- Warranty of 2 years should cover all parts of the unit including battery (except the Physical damage)
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.

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# MRI Compatible Ventilator

- Should be MRI Compatible machine with no ferrous elements
- Electronically operated with battery backup minimum 30 minutes
- Dedicated for Adult, pediatric and neonate patients
- Should be suitable for up to 3 tesla MRI Environment
- 2-50 BPM
- Should have SIMV,CMV mode & PEEP,PRVC pressure support ,NIV,NCPAP
- Tidal volume: 2-2000mL or more
- PEEP 0 to 20 cm H2O or more
- Provision for 21-100% oxygen
- Built in disconnect ,Power failure, low pressure & high pressure alarms with audio visual indications
- Should be supplied with necessary accessories to connect to patient of all ages
- Should be supplied in a all inclusive carry suitcase for easy portability
- Locally available service personnel
- Weight less than 50 kgs
- Should have apoea backup

**Others**

1. The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time. AMC and CAMC Rate should be quoted in price bid for 8 years
2. Standard warranty : 2 years
3. In case of failure of Equipment, standby arrangements must be provided within 48 Hours.
4. Additional items to be supplied from the company : Reusable breathing tubing - 2 Nos
5. Should have safety certificate from a competent authority CE issued by a notified body registered in the European commission / FDA (US)/ STQC CB Certificate/ STQC S Certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate/ test report shall be produced along with the technical bid.

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**Technical specifications of Medical Equipment**

Please attach a copy of

- CE & FDA certificate if any
- Compliance statement with technical specification
- Product datasheet
- Details of service division
- Sales authorization letter from Manufacturer.
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# 4 D Echocardiography

MAKE : Please specify
Model : Please specify
Manufacturing country : Please specify
Year of Launch : Please specify

1. Should quote only the latest and most technologically advanced system with minimum 40 lakh channel please specify the number of channels :
2. Should be capable of single beat data acquisition with accelerated full volume architecture platform
3. Dedicated 4D platform, preferably software-based
4. Should be supplied with software for Pre & post-analysis.
5. Future upgradability through software
6. Should have post-processing capabilities for gain, B mode, sweep speed etc
7. Should have multiple lines acquisition with rapid frame rates of more than 2800 frames/second. These frame rates should be applicable for B Mode, color flow, and color tissue Doppler
8. Coded/pulse harmonic imaging should be possible
9. Digital beam former technology with high definition imaging
10. There should be a broad-angle at least 90 degrees.
11. Should have an ergonomic design with one or 2 touch control panel
12. At least 22-inch flat-panel type LCD / LED monitor with tilt, swivel & float options

13. The system should be capable of the following imaging and operating modes
    a. Real time anatomical m Mode and curved m Mode.
    b. Dual focal zones should be available
    c. White zoom-on line & offline
    d. Read zoom online and offline
    e. Advanced stress echo package with automatic report generator with flexible protocols for physical and pharmacologic stress with 2 minute continuous capture
    f. Live 3D imaging (4D) single beat full volume data acquisition with high frame rates with storage of volumetric data. Automatic tissue optimization should be possible
    g. Should be capable of Quantization of tissue Doppler.
    h. Latest Software for speckle tracking for LV,RV, and LA
    i. Strain and strain rate imaging should be available
    j. Sector, linear and multi plane, and live 3D (4D) trans - esophageal imaging should be available

k. 2D, M Mode, color M Mode
l. Color flow Doppler imaging
m. Fully steerable pulsed Doppler
n. Fully steerable continuous wave Doppler
o. Tissue Doppler with high frame rates & 2D strain imaging
p. Digital cine replay of all imaging and Doppler with measurements and calculations
q. Full measurement and analysis capability
r. Digital image storage and patient archive with true scanner frame rates

14. The system shall have contrast-specific imaging capability with LV specification and myocardial perfusion echo. It shall support a contrast specific user interface with commonly used controls

15. The system should be able to
    a. Trace, calculate and display the perimeter of a displayed structure, with incremental erasing of perimeter trace
    b. Trace, calculate, and display the area of a displayed structure
    c. 3D qualification and 3D viewing, cardiac 3D advanced quantification, cardiac 2D quantification, region of interest calculation, automated intima-media thickness, and strain quantification
    d. Cardiac biplane volume measurements based on simpsons biplane method in 2D and 2D fractional area change

16. Live 3D (4D)
    a. Easy selection of volumetric data with automated cropping
    b. Multi optional volume acquisition
    c. Automated Dynamic LVEF, RV, and LA calculation
    d. 4D stress/i-rotate to be available
    e. Miniaturized beam former with a small footprint
    f. Simultaneous display of the volume and multiplanar views
    g. The system shall provide live 3D color flow rendering with the ability to crop, rotate, suppress color, suppress B&W image, suppress the baseline and change gains
    h. The system should support full-screen display of all 3D views including X, Y & Z MPR views and simultaneous display of thumbnail views on the same system display monitor
    i. Volume rotation in all planes must be supported
    j. The 3D/4D imaging with preferably single probe capability probe should support all modes like 2D, M Mode, CW, PW, CFM. PW, CW and TVI

k. Triplane imaging should be possible(Online/offline)

l. Multidimensional stress echo should be possible

m. Multi slice imaging 12 slices should be possible

n. The system should support automated strain quantification for LV, LA, RV

o. The system should support automated heart model technology to calculate 3D volume, EF of both LA , LV

17. Should have 4D viewing technology like True vue / Flexi light software

## ESSENTIAL ACCESSORIES

1. Single Crystal Active Matrix Phased Array Probe With smallest footprint and Bandwith 1.5 – 4 Mhz With Field Of View at least 90 Degree or better
2. Pediatric trans thoracic probe – phased array band width 3 - 8.0 Mhz
3. Neonatal probe with a frequency of 5 to 10 Mhz or better
4. Curved array probe bandwidth 1.6 - 5.0 MHz
5. Active matrix 4D volume phased array probe bandwidth 1.5-4.0MHz field view 90 degrees and depth of field 30cm (Live 3D trans thoracic adult transducer)
6. Adult Transesophageal active-matrix phased array live 3D and 2D probe 3.0-7.0 MHz field of view 90 - degree depth of field 20cm.
7. Paediatric Transesophageal active-matrix phased array 2D probe 2.0-7.0 MHz field of view 90-degree depth of field 20cm.
8. Should supply external original licensed workstation of latest specification available in the market
9. Should be provided with suitable UPS for the unit and should include warranty and CAMC Period

## IMAGE MANAGEMENT

1. The system should be able to store patient images, loops in the hard disk drive of 500 GB or more
2. The system should have an inbuilt CD/DVD writer and USB port
3. Should have supplied with A4 Colour laser printer and should include warranty and CAMC Period

## TECHNICAL SUPPORT

1. Operating manual
2. Power supply 230+-15%, 50Hz.
3. Should provide suitable online pure sine branded UPS with one hour back up and which should include in warranty and CAMC Period

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**Technical specifications of Medical Equipment**

- Standard Warranty:2years
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment / Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Necessary trainings should be provided for Doctors, User department staff and Biomedical staff at free of cost.

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**Technical specifications of Medical Equipment**

## Portable Ultrasound Color Doppler Echocardiography system

MAKE : Please specify
Model : Please specify
Manufacturing country : Please specify
Year of Launch : Please specify

1. State of the art and all digital beam former purpose Portable Ultrasound Color Doppler Echo cardiography system
2. System should weight not more than 8 kg with battery
3. System should be preferably spill proof and fluid resistant for easy to clean and disinfect
4. System start up time- off to on not more than 30 second.
5. Architecture: all digital broadband
6. Should have dual imaging
7. Should have zoom capability
8. Should have dynamic range & gain
9. Should have S-Video (in/out)/ HDMI for record & playback.
10. Should have RGB or DVI output to external LCD display
11. Should have composite Video output (NTSC/PAL) or HDMI to Video printer or external LCD display.
12. Should have minimum of 1 USB port for data transfer
13. Should have integrated speakers
14. System should work both in AC power and battery
15. System should have minimum battery backup of 1 hour on fully charged condition.
16. System should be compatible for TEE/TOE, and should support both in A/C Mains and in battery
17. AC: Universal power adaptor:110-240VAC, 50/60 Hz input
18. The system should have facility to store images in a hard disk of capacity more than 500 GB

II. The equipment must be capable of operating in B mode, M Mode, color Doppler, pulsed wave and continuous wave modes. It must support transducers with linear, phased array and curved array formats. Further, it must include a fully array of measurement and calculation packages. The specific requires for this equipment are the following;

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1. Beam Former: universal digital broadband former accepting routine phased array sector, convex, and linear probes
2. Monitor: should have high-resolution medical grade monitor not less than 15" with adjustable display contrast
3. Digital processing channels: at least 1000 channels or better preference will be given for more
4. Gray Scale: System should have a minimum of 256 gray levels with system dynamic range to be at least 100 Db
5. Display modes: with B, 2B, M, PW, HPRF/CW and color Doppler with power Doppler, Tissue Harmonic should be available on convex and phased array probes, steering on color / PW modes on linear probe should be available
6. Cine review: standard cine memory providing minimum 200 frames on 2D mode and up to 60 seconds Doppler cine
7. System should be capable of handling 2-15 MHZ multi frequency imaging with independent selection of 2D/ Color/ spectral Doppler
8. Image optimization on B and M modes: System should have the following:
    a. Up/down & right/left image rotation
    b. Multiple steps of edge enhancement settings
    c. Up to 25cm depth.
    d. Levels of persistence

9. Measurements and calculations
    a. System should have at least 4 calipers with depth information and extensive, customizable measurement and report packages
    b. Distance, area, % stenosis on B mode
    c. Distance, Time, Heart Rate, slope on M mode
    d. Velocity, acceleration time, slope, PI, RI, S/D Ratio with Auto Doppler on Doppler mode
    e. Should have needle visualization
    f. Biopsy guided needle for Curvelinear should be supplied along with the unit

10. Transducers:
    a. Should have multi frequency, broad brand, linear array 6-12 MHZ or better transducer for vascular, musculoskeletal, nerve and superficial imaging
    b. Should have multi frequency, broad brand phased array transducer 2-5 or better MHZ or better for cardiac, abdominal and obstetrics imaging.

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c. Should have convex probe (2-5 MHZ) or better
d. Should have a hockey stic probe with a frequency 7 to 12 MHZ or better

III. Should have safety certificate from a competent authority CE issued by a notified body registered in European commission / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid

1. Standard Warranty :**2 years**
2. AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
3. The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
4. The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
5. The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
6. In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
7. Necessary trainings should be provided for doctors, user department staff at free of cost

**MANDATORY DOCUMENTS ALONG WITH TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative should be signed in the purchase contract

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**Technical specifications of Medical Equipment**

# OCT Machine

1. The system should have an imaging engine that is based on the fiber optic technology.
2. The system should have wireless FFR measurement capabilities.
3. It should utilize catheter that emit near infra red light to produce high resolution real time images.
4. Should have two monitors plus remote video output for multiple sightlines.
5. The system should have an integrated drive-motor and Optical Controller (DOC).
6. Should have an isolation transformer.
7. Should have a computer, a keyboard, and a mouse.
8. CPU with high end DAS card for faster 3-D data acquisition speed
9. 22*CD/DVD RW dual player DVD RAM drive for faster image management.
10. DICOM compatibility
11. Should be supplied with 2 numbers of OCT Catheter and 2 number of pressure wire at free of cost along with machine.
12. The rate of one OCT Catheter and one pressure wire should be offered in the BOQ and the same will be considered for L1 calculation. The price for the same shall be fixed for 3 years from the date of price bid opening.

II. The system should allow the user to :

1. Acquire, save and subsequently retrieve images for review. Real-time 3D image Re-construction of lumen and vessel
2. Immediate and accurate lumen boundary detection and Lumen Profile Display
3. Stent planning workflow with automated minimum lumen area and percent stenosis measurements
4. Automatic lumen detection on every frame
5. Profile of mean diameter or lumen area across pullback
6. Automatic marking of MLA frame
7. User-defined proximal and distal reference frames
8. Automated display of reference frame area and diameters, distance between references, % AS & %DS
9. Automated measurements mode for calculations for stent sizing
10. Seamless integration of FFR and OCT with guided workflows for exceptional ease-of-use
11. Should allow user for easy orientation on Angiography
12. Allow to acquire and review images in L-Mode (lateral view).
13. Overlay color maps to optimize contrast resolution.
14. Enlarge a defined area of interest (zoom).

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15. Make measurement and calculations of % Diameter stenosis
16. Add text annotations.
17. Play back and edit images with a full range of playback and editing capabilities.
18. Export still images and movies in raw OCT format or in standard AVI, TIFF, JPEG,BMP, or DICOM formats.
19. Import OCT format images and review and edit them with full OCT review and edit capability.
20. Perform basic file management functions.

III. The imaging Parameters of the system should be:

1. Maximum frame rate: Up to 180 fps
2. Longer pullback of up to 75 mm and up to 540 frames
3. Faster pullback speed up to 36 mm/sec
4. Allows user to do high resolution imaging for online real time 3-D re-construction
5. # of lines per frame: 500
6. Scan diameter:10 mm
7. Axial Resolution: 15 microns Powered by TCPDF

## MANDATORY DOCUMENTS ALONG WITH TECHNICAL BID

1) Compliance statement with technical specification
2) Product datasheet,
3) Details of service division
4) Sales authorization letter from Manufacturer.
5) Details of installations
6) Company representative shoud be signed in the purchase contract.

## Other terms and conditions

- Standard Warranty : **2 years**
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts

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**Technical specifications of Medical Equipment**

- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Necessary trainings should be provided for doctors, user department staff at free of cost

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**Technical specifications of Medical Equipment**

# Neuro Drill

**Electric Drill Console**

1. The electric drill system should be designed for cranial, spine, and skull base, surgery applications, complete with console, footswitch, Drill motor Hand Piece, and attachments.
2. Console should be able to connect multiple hand pieces at a time like Neuro Drills (Up to 75000 RPM), Saw systems (Reciprocating ,Oscillating and sagittal) & Debrider Hand piece
3. Console should recognize different hand pieces automatically.
4. System should have multi-function foot switch capable of operating in both ON/OFF and Accelertion modes.
5. Console should have irrigation pumps integrated to it with irrigation speed adjustments (5Cc/Min to100Cc/Max) through touch of a button.
6. There should be provision to operate the system with an emergency switch in the console / hand switch, In case of failure of foot switch.
7. Should have large Touch screen monitor
8. Should have multifunction ergonomically designed foot control
9. The various functions like speed/mode, forward/reverse selection of Active hand piece change etc. Should be able to adjust either from touch screen panel or from the multifunction foot switch.
10. Should have user friendly interactive menu and illustrative help guide.

**High Speed Drill Hand Piece:**

1. Should be ergonomically designed electrical Drill system with high Torque more than 40 mN-m and power not less than 120W.
2. Speed should be variable from 10,000 to 75,000 rpm
3. Motor should have thin integrated non detachable cable at hand piece side and only one end free to connect to the console.
4. Weight of the drill should not be more than 90 gms to avoid fatigue during prolonged surgeries and length should be minimum 9.75 cm with a diameter not exceeding 1.55 cm.
5. No Lubrication or seal should be required to run the motor.
6. Should have burs with distal bending for trans nasal surgeries and proximal bending burs for Minimal invasive spine surgeries with irrigation facility.
7. Rate to be offered as per above specification:
    1. Electrical Console with two pumps-1 No
    2. Multifunction foot switch – 1 No

3. High Speed Drill Motor – 1 No
4. Cleaning brush -01 No
5. Angled attachment 14.0 cm long- 1 No
6. Craniotomy Attachment Adult size- 1 No
7. Straight attachment 9.0 cm long -1 No
8. Perforator Driver -1 No
9. Straight attachment 7.0cm long -1 No

**Tools & Blades**

1. Tool for Craniotomy -5 Nos
2. 3 mm ball fluted & diamond 14 cm Long – 2 Nos each
3. 4 mm ball fluted & diamond14 cm Long – 2 Nos each
4. 5 mm ball fluted & diamond 14 cm Long – 2 Nos each
5. 5 mm Acorn Tool 14 cm Long- 2 Nos
6. 3 mm ball fluted & diamond 9 cm Long – 2 Nos each
7. 4 mm ball fluted & diamond 9 cm Long – 2 Nos each
8. 3 mm Cutting bur 9 cm long – 2 nos
9. 5 mm Cutting bur 9 cm long – 2 nos
11. Irrigation tubing -5 Nos
12. Perforator Bit -1 No
13. Suture hole drill bit -2 Nos

Should have safety certificate from a competent authority CE issued by a notified body registered in the European commission /FDA (US)/ STQC CB Certificate/STQC S Certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate/ test report shall be produced along with the technical bid

**MANDATORY DOCUMENTS to be submitted along with the TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative should be signed in the purchase contract.

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**Technical specifications of Medical Equipment**

## Other terms and conditions

- Standard Warranty : **2 years**
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Necessary trainings should be provided for doctors, user department staff at free of cost

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**Technical specifications of Medical Equipment**

## Light source

1. Should have LED Light source
2. Long lamp life of minimum 10000 hrs or equivalent
3. Bulb life counter / life indicator on light source
4. Standby mode
5. Universal jaw assembly to adapt any make of fiber optic cable
6. Fibre optic light cable with straight connector size 4.8 mm or above, length 250cm or above.
7. Heat Resistant
8. Adjustable brightness control
9. Should have Light intensity indicator.
10. Should have safety certificate from a competent authority CE issued by a notified body registered in European commission / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL for Light source

**MANDATORY DOCUMENTS to be submitted along with the TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative should be signed in the purchase contract.

**Other terms and conditions**

- Standard Warranty : **2 years**
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Necessary trainings should be provided for doctors, user department staff at free of cost.

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**Technical specifications of Medical Equipment**

# ENT Drill

## I. Electric Drill Console

1. The electric powered drill system for cranial, spine, and skull base, applications
2. Console should be able to connect multiple hand pieces at a time like Neuro Drills (Up to 75000RPM), Saw Systems (Reciprocating, Oscillating and Sagittal) & Debrider system.
3. Console should recognize different hand pieces automatically.
4. System should have multi function foot switch capable of operating in both ON/OFF mode and Accelerator mode.
5. Should be able to adjust the irrigation levels of bur or blade with the touch of a button.
6. There should be provision to operate the system with an emergency switch in the console / hand switch.
7. Should have inbuilt pump for Irrigation
8. The various functions like Speed / Mode, Forward / Reverse Selection of Active hand piece change etc. should be able to adjust either from touch screen panel or from the multifunction foot switch
9. Should have multifunction ergonomically designed foot control
10. Should have user friendly interactive menu and illustrative help guide.

## II. Microdebrider Hand Piece -2 nos

1. The Debrider Hand piece should be able to operate in forward at speeds up to 11000 or better rpm and 5000 rpm in oscillating mode.
2. The Debrider Hand piece should be capable of accepting various types of blades and burs.
3. Hand Piece should have straight internal suction path.

## III. High Speed Drill Hand Piece: 2 nos

1. Should be ergonomically designed electrical Drill System with high Torque more than 40 mN-m and Power not less than 120W.
2. Speed should be variable from 10,000 to 75,000rpm.
3. Motor should have integrated non detachable cable at hand piece side and only one end free to connect to the console.
4. Weight of the drill should not be more than 100 gms to avoid fatigue during prolonged surgeries and length should be less than 9 cm with a diameter not exceeding 1.8 cm
5. No Lubrication or seal should be required to run the motor
6. Trans-nasal burs have irrigation facility.

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**Technical specifications of Medical Equipment**

**IV. Unit should include :**

1. Electrical Console with pumps -1 No.
2. Multifunction Foot Switch – 1 No.
3. High Speed Drill Motor – 1 No.
4. Cleaning brush -01 no
5. Angled attachment 14.0 cm long – 1 no.
6. Craniotomy Attachment – 1 No
7. Straight attachment 9.0 cm long- 1 No.
8. Perforator Driver- 1No.

**V. Tools & Blades**

1. Tool for Craniotomy – 5 Nos.
2. 3 mm ball fluted & diamond 14 cm Long – 2 nos each
3. 4 mm ball fluted & diamond 14cm long– 2 nos each.
4. 5 mm ball fluted & diamond 14 cm Long – 2 nos each.
5. 5 mm Acorn Tool 14 cm Long – 2 nos each
6. 3 mm ball fluted & diamond 9 cm Long – 2 nos each
7. 4 mm ball fluted & diamond 9cm long– 2 nos each.
8. 4mm straight Tricut blade – 2 No.s
9. 3 mm cutting bur 9 cm – 5 no.s
10. 5 mm cutting bur 9 cm - 5 no.s
11. Adult 40 degree blade – 2 No.
12. Irrigation tubing – 5nos
13. Perforator Bit- 1

**VI.** Should have safety certificate from a competent authority CE issued by a notified body registered in the European commission / FDA (US)/ STQC CB Certificate/ STQC S Certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate/ test report shall be produced along with the technical bid.

**VII.** Warranty should be 2 years for Console and Hand pieces (High speed drill and Micro-Debrider) and attachments.

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**MANDATORY DOCUMENTS to be submitted along with the TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative should be signed in the purchase contract.

**Other terms and conditions**

- Standard Warranty : **2 years**
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the upgradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Necessary trainings should be provided for doctors, user department staff at free of cost

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**Technical specifications of Medical Equipment**

# Various equipment for Gastroenterology Department

**A. High definition video processor with Multi ( 3 or more )LED Light source**

a) Should have HD video output or equivalent technology

b) NBI / FICE / iScan or equivalent colour enhancement technologies

c) Should have resolution up to 1980x 1080 ( HD ) pixels or above and better preference will be give for better resolution

d) Should have color correction function.

e) Light source should have automatic / manual brightness control

f) Should have minimum 3 year warranty for LED Module

h) Processor & light source should have ultrasound endoscopes compatibility.

**B. Monitor**

a) Should be high definition medical grade monitor.

b) Should be of 24" or more size

c) Should have provision for accepting DVI/HDMI, HD SDI,RGB, S-Video and composite video signal.

**C. Video Gastroscope**

a) Should have a minimum field of view of normal 140° or better

b) Minimum Visible distance 5 mm or less, maximum 100 mm

c) Should have insertion tube diameter of 10 mm or less

d) Should have bending angle of 210 °/90 ° [up/down] & 100°/100° [right/left] minimum.

e) Should have a working channel of 2.8 mm or more

f) Working length should be 1050mm or more

g) Scope should be equipped with mega pixel camera, of latest CMOS/ HD CCD technology.

h) Should have optical magnification with multi zoom/Dual zoom/Optical zoom

i) Should have close focus observation capability up to 5mm or less

j) Should have built in water jet.

k). Should have Co2 compatibility

i ) Should have one touch connector for easy connection

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**Technical specifications of Medical Equipment**

**D. Video Colonoscope**

a) Should have a minimum field of view of normal 170° or better

b) Minimum Visible distance 5 mm or less, maximum 100 mm

c) Should have insertion tube diameter/ distal end diameter of 13.2 mm or less

d) Should have bending angle of 180°/180° [up/down] & 160°/160°[right/left] minimum.

e) Should have a working channel of 3.7 mm or more

f) Working length should be 1680 mm or more.

g) Scope should be equipped with mega pixel camera of latest CMOS/ HD CCD technology

h) Should have optical magnification up to 135 times with multi zoom function.

i) Should have optical magnification with multi zoom/Dual zoom/Optical zoom

j) Should have anti slip insertion tube with gradual stiffness/ variable Stiffness for more comfortable insertion

k) Should have built in water jet.

l) Should have Co2 compatibility.

m) Should have one touch connector for easy connection

**E. Video Duodenoscope -ERCP -ADULT : Should have following specifications**

a. Lighter and possess high resolution image quality.

b. Should have locking mechanism for this elevator

c. Narrow Band Imaging (NBI) / iScan /FICE or equivalent colour enhancement technologies

d. Slim 11.6 mm or less insertion tube

e. Wide 4.2 diameter channel

f. Scope ID function

g. Three or more remote control switches on control body.

h. Compatible with leakage testing device with its air flow and pressure regulation through light source's air pump / through scope - Manual or Electronic

i. Should have Co2 compatibility.

Specifications Sub-specifications Duodenoscope Optical System

- ✓ Field of view 100°
- ✓ Direction of view backward side viewing 5° or more
- ✓ Depth of field 4-60 mm Insertion Section- Distal end outer diameter 13.7mm or less
- ✓ Insertion tube outer diameter 11.6 or less

- ✓ Working length 1240mm or more
- ✓ Instrument Channel Channel inner diameter 4.2 mm or better
- ✓ Bending Section Angulation range Up: 120° Down: 90° Right: 100deg or more Left: 90°

**F. Video Colonoscope : PAEDIATRIC**

a) Should have a minimum field of view of normal 140° or better

b) Minimum Visible distance 4 mm or less

c) Should have insertion tube diameter/ distal end diameter of 10 mm or less

d) Should have bending angle of 180°/180° [up/down] & 160°/160°[right/left] minimum.

e) Should have a working channel of 3.2 mm or more

f) Working length should be 1680 mm or more.

g) Scope should be equipped with mega pixel camera of latest CMOS/ HD CCD technology

h) Should have optical magnification up to 135 times with multi zoom function.

i) Should have optical magnification with multi zoom/Dual zoom/Optical zoom

j) Should have anti slip insertion tube with gradual stiffness/ variable Stiffness for more comfortable insertion

k) Should have built in water jet.

l) Should have Co2 compatibility.

m) Should have one touch connector for easy connection

**G. Small Intestinal Videoscope : Single Baloon**

a) Should have a minimum field of view of normal 140° or better

b) Minimum Visible distance 4 mm or less,

c) Should have insertion tube diameter of 10 mm or less

d) Should have bending angle of 180 °/180 ° [up/down] & 160°/160° [right/left] minimum.

f) Working length should be 1050mm or more

g) Scope should be equipped with mega pixel camera, of latest CMOS/ HD CCD technology.

h) Should have optical magnification with multi zoom/Dual zoom/Optical zoom

i) Should have close focus observation capability up to 5mm or less

j) Should have built in water jet.

k). Should have Co2 compatibility

i ) Should have one touch connector for easy connection

J ) NBI/FICE/iScan or equivalent colour enhancement technologies

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**H. Small Intestinal Video scope : Double Balloon**

a) Should have a minimum field of view of normal 140° or better

b) Minimum Visible distance 4 mm to 100 or less,

c) Should have insertion tube diameter of 10 mm or less

d) Should have bending angle of 180 °/180 ° [up/down] & 160°/160° [right/left] minimum.

f) Working length should be 1050mm or more

g) Scope should be equipped with mega pixel camera, of latest CMOS/ HD CCD technology.

h) Should have optical magnification with multi zoom/Dual zoom/Optical zoom

i) Should have close focus observation capability up to 5mm or less

j) Should have built in water jet.

k). Should have Co2 compatibility

i ) Should have one touch connector for easy connection

J ) NBI / FICE / iScan or equivalent colour enhancement technologies

**I. Trolley & accessories**

i. Should be supplied with suitable trolley with hanger

ii. Trolley should have at least 5 power sockets to connect the processor, monitor etc.

iii. Should provide Water Leakage Tester - 1 No

iv. Should provide a Carrying Case

v. Should provide a ETO cap

vi. Biopsy Foreceps Disposable-20 Nos(for video gastro scope and colonoscope each)

vii. Biopsy channel cap-20 Nos (for video gastro scope and colonoscope each)

**MANDATORY DOCUMENTS to be submitted along with the TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative should be signed in the purchase contract.

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## Other terms and conditions

- Standard Warranty : **2 years**
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the upgradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.
- Necessary trainings should be provided for doctors, user department staff at free of cost

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**Technical specifications of Medical Equipment**

# Bipap Ventilators

MAKE : Please specify
Model : Please specify
Manifacturing country : Please specify
Year of Launch : Please specify

1. NIV for adults and pediatrics.
2. Light weight, small, user friendly and quiet device.
3. Should have the following modes. S -T (spontaneous - timed), CPAP (Spontaneous), T (Timed), PAC (Pressure Assisted Control)/ PC (Pressure Control), Volume Assured Pressure Support (VAPS).
4. Should incorporate latest algorithms for leak compensation and synchronization.
5. Should have color screen display for real time monitoring of minute volume/ tidal volume, respiratory rate, percentage of leak, I:E ratio, Delivered IPAP and EPAP.
6. Should be able to display real time flow and pressure curves / values simultaneously and the Ti bar graph.
7. Should include user adjustable alarms and essential non adjustable fixed alarms for patient safety.
8. Should include alarms for leak, power supply failure, apnea, patient circuit disconnection, occlusion, low internal battery etc. and should have adjustable alarms for minute volume, high/low pressure, RR, apnea.
9. Should have oxygen port to accept flow up to 15 l/min of oxygen to achieve a high FiO2.
10. Should provide and maintain optimal humidification at patient desired temperature regardless of ambient humidity changes throughout night.
11. Pressure range: IPAP- 4/ 2-40 cm H2O, EPAP-2/4-25cm H2O.
12. Pressure support 0-30cmH2O.
13. Respiratory rate 5-40bpm or more.
14. Rise time upto 600msec.
15. Inspiratory time upto 3sec or more.
16. Flow/ auto trigger and cycle settings.
17. Air outlet should be 22mm taper compatible with ISO 5356-1:2004.
18. Machine should be fitted with electrostatic fibre mesh air filter.
19. Should have built in internal battery for minimum 2 hrs of back up and should have capability to add optional external battery

20. NIV ventilator to be supplied with patient ckt 2nos, air inlet filters, power supply pack, reusable face mask standard 3 sizes (Small, medium and Large) 2 pieces each, Oxygen connector, Fio2 Monitoring accessories.
21. Power supply input 100-240v ac.
22. Should have safety certificate from a competent authority CE issued by a notified body registered in European commission / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid.

**MANDATORY DOCUMENTS to be submitted along with the TECHNICAL BID**

- Compliance statement with technical specification
- Product datasheet,
- Details of service division
- Sales authorization letter from Manufacturer.
- Details of installations
- Company representative should be signed in the purchase contract.

**Other terms and conditions**

- Standard Warranty : **2 years**
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the upgradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
- The Model quoted must be latest and most advanced and spare and service must be available for at least 10 years which means company will be responsible for maintaining the equipment all 10 years in full working conditions at least 95 % Up time
- In case of failure of Equipment/Accessories/ Instruments, standby arrangements must be provided within 48 Hours.

Necessary trainings should be provided for doctors, user department staff at free of cost

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## LASER for UROLOGY & GASTROENTEROLOGY

MAKE : Please specify
Model : Please specify
Manifacturing country : Please specify
Year of Launch : Please specify

- A dedicated, user friendly and advanced 60 W Thulium laser for Urology - stone surgery & Gastro enterology with wavelength of 1900 to 2100 nm
- Should be able to fragment calculi of any size in the bladder, pancreatic, ureter or kidney and any impacted stone fragment.
- Should be able to do Stone fragmentation & Dusting.
- Should be able to ablate superficial bladder tumors, urethral &ureteral tumors.
- Should have power output of 60 watts or more
- Should be supplied with a Foot switch
- Should have repetition rate of 2500 or better
- Should have Energy per Pulse of 0.2 - 6 Joules or better
- Should have adjustable pulse width.
- Should have Green aiming beam of 5mW at 532nm, adjustable intensity settings.
- Should have a Touch Screen Color Display and should rotate 360 Degrees.
- Should have a closed loop, self-contained water to air exchanger cooling system.
- Should be able to use with 200-240 VAC 50/60Hz
- Should have safety certificate from a competent authority CE issued by a notified body registered in the European commission / FDA (US)/ STQC CB Certificate/ STQC S Certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate/ test report shall be produced along with the technical bid.
- Equipment should supply along with the following accessories and also should offer rates separately for each item in the price bid
    a) 550 Micron Reusable, Flexible Fiber-5 Nos
    b) 365 Micron Reusable, Flexible Fiber -3 Nos
    c) 200 micron Reusable, Flexible Fiber -2 Nos
    d) 550 Micron Stripping and cleaving (set)- 1 Nos
    e) 365 Micron Stripping and cleaving (set) -1 Nos
    f) 200 Micron Stripping and cleaving (set) -1 Nos

g) Fibre Inspection Scope -1 Nos

h) Fibre Cutting Scissors -1 Nos

i) Laser Safety Glasses -3 Nos

- Standard Warranty:2years
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.
- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
- The Equipment should be the state of the art design, incorporate all the latest facilities and modern concepts
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**MANDATORY DOCUMENTS TO BE SUBMITTED ALONG WITH TECHNICAL BID**

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## Reusable fiber optic Uretero – Renoscope

MAKE : Please specify
Model : Please specify
Manifacturing country : Please specify
Year of Launch : Please specify

- Should be a flexible, Reusable fiberoptic Uretero – Renoscope with Continuous Irrigation.
- Outer diameter of the shaft should be between 6 Fr. - 9 Fr. or equivalent
- Should have an instrument channel between 3 Fr. to 4.5 Fr. or equivalent
- Should have 680mm ±20mm working length or equivalent
- Should have a ceramic liner in the distal end of the working channel to protect it from thermal or electro cautery damage.
- Should have angle of view between 800- 900 field of view with eyepiece adjustment or equivalent
- Should have minimum angle of deflection 250-275 up & down or equivalent
- Should have active defection mechanism.
- Should be supplied with gas sterilization valve.
- Should be waterproof and fully immersible in solution.
- Should be adhering to sterilization method with ETO, FO gas.
- Should be able to connect with stryker,storz etc,, make console
- Should be supplied with the following accessories of compatible sizes.

    a. Grasping Forceps (Stone Basket) - 2 No's
    b. Ureteroscopy pathfinder – 5 No's
    c. Pressure compensation cap - 1 No's
    d. Leakage Tester - 1 No's
    e. Cleaning Brush - 1 No's
    f. Carry Case - 1 No's
    g. Access sheath – 2 No's

- Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid.

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## Flexible Uretero scope

MAKE : Please specify
Model : Please specify
Manufacturing country : Please specify
Year of Launch : Please specify

- Field of view 110 or equivalent
- Line of vision 0 degree or equivalent
- Depth of view : 2 mm -50mm or equivalent
- Should be digital CMOS Imager
- Deflection of tip : >270 degree up and down or equivalent
- Diameter 7.5 fr or equivalent
- Working channel: 3.3 fr or equivalent
- Working length : 670mm or equivalent
- Should have the following functions for control unit : white balance , brightness control image capture, video capture etc. & can be used with storz and stryker monitors
- Video connections: SDI/DVI/HDMI
- Power requirements: 100 V Ac-240 v ac
- Frequency: 50 Hz

- Standard Warranty:2years
- AMC and CMC rates after warranty period should be quoted in price bid for next 8 years.

- The plat form should be able to accommodate all the up gradations required later (as when required) to add on more and more special features with no additional cost
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