



TENDER NOTIFICATION

Adichunchanagiri University is inviting Closed Tender for the Supply of Neurosurgical equipments for the Department of Neurosciences

1	Name of the work	Supply of Neurosurgical equipments for the Department of Neurosciences.
2	Tender documents available for download	21-10-2019 to 31-10-2019 up to 5:00pm.

Sl No	Anaesthetic Requirements for Neurosciences	Quantity (In No's)
1.	Anaesthesia Workstation (3 Gas system) with option of air, oxygen (N2O) & BIS Entropy	2
2.	Fibre optic Laryngoscope	1
3.	Video Laryngoscope	1
4.	Syringe Pumps	10
5.	Ventilators for ICU	4
6.	Infusion Pump	5
7.	Neuro OT Table	2
8.	Transport multipara monitor	1
9.	LED Head light with binocular loupe	1
10.	View Box (4 Film Viewer for OT)	2
11.	Blood Warmer	2
12.	Patient Warming Device	2
13.	Multipara patient Monitors	6
14.	Suction Machine	2
15.	Pneumatic Compression Device	2
16.	Neuro OT Trolley for Nursing Assistance	4
17.	Intravenous Stand	10
18.	Prone Head Rest Protector Silicone Gel & Prone Position Gel Sheet	2
19.	Revolving Stools	6
20.	Cardiac Tables	20
21.	Roller for Shifting	2
22.	Wilson Frame	2
23.	Intubation trolley	2
24.	Surgical Operating Stool	2



Neurosurgery Equipment's		
1.	Surgical diathermy with Bipolar Forceps	2
2.	CUSA	1
3.	Neuro Drill	1
4.	Surgical operating Microscope	1
5.	General Neurosurgical instruments	1
6.	C – Arm with DSA compatibility	1
7.	Head Fixation device	1
8.	Zero Suction Machine	2

1. ANAESTHETIC REQUIREMENTS FOR NEUROSCIENCES

1. Anesthesia Workstation with Patient Monitor

TECHNICAL SPECIFICATION

1. General Requirement

- a) Compact and modular, three gas Anesthesia workstation with an integrated ventilator for adult to infants and integrated airway monitor for airway pressures and volume.
- b) The machine should be suitable for low and minimal flow anesthesia application with compliance compensation of breathing ckt, fresh gas flow compensation/ decoupling.
- c) The machine should have 3 drawers.
- d) Should have interactive guided system test.
- e) Should have precise digital fresh gas settings of Air, N₂O and O₂, with a total fresh gas flow meter for indication.
- f) Should display virtual flow tubes.
- g) The anesthesia machine, inbuilt ventilator, vaporizer and patient monitor should be manufactured by same company to maintain uniformity of part and efficient after sale service.
- h) The system should have up to 2 Hrs. battery backup
- i) System should be US FDA/ European CE approved and conforms to EN 60601-2-13 (Requirement for safety and essential performance of anesthesia system)
- j) Should have Integrated LED workplace illumination.
- k) The machine should have highly maneuverable trolley with a central brake
- l) Should have integrated anesthesia gas monitoring module with automatic identification of agent with values display on patient monitor including MAC value.

2. Gas delivery system

- a) Should have pin index yokes for Oxygen & Nitrous Oxide besides separate connection for Central gas supply for Oxygen, Nitrous Oxide and Air.
- b) The machine should have pressure gauges for cylinders & central supply lines mounted on front of Anesthesia machine for better visibility. The gas connections should be non-interchangeable.
- c) The system should be suitable to use at minimal flow up to 700ml fresh gas setting.
- d) Automatic cutoff of N₂O by Oxygen pressure failure.



- e) Hypoxic guard for linear regulation of minimum oxygen concentration at 23% volume
- f) To ensure patient safety minimum Oxygen flow of 200 ml at low fresh gas flow settings even below total 500 ml fresh gas flow.
- g) Audible visual oxygen failure alarm.
- h) Emergency Oxygen flush at 30 – 70 L/min bypassing the vaporizer.
- i) In the event of complete power loss and battery failure it shall be possible to manually ventilate and deliver anesthetic agent.

4. Vaporizer

- a) Machine should have possibility to mount 2 quick mount type vaporizer for easy interchangeability and safety with interlock facility.
- b) Vaporizer for Isoflurane & Sevoflurane.
- c) Vaporizer should have extended delivery range from 0 to 6 Vol. %
- d) The vaporizer should require no calibration in its life time.

5. Breathing System

- a) Should have fresh gas de-coupled semi closed circle absorber system.
- b) Should have adjustable pressure relief valve from 5 to 75 mbar.
- c) Should have change over from Spontaneous to Bag ventilation with single step.
- d) The system should have leak and compliance test (including patient hoses upto the Y piece).
- e) Should have compact breathing system with approx. 1.7 Ltr. Volume capacity.
- f) Should have an external fresh gas outlet for connecting Magill or Bain's circuit

The system should have integrated breathing system warmer to prevent condensation in breathing system and patient comfort (to prevent delivery of dry fresh gases to lungs or mucocilliary transport of fresh gas)

h) The device should have port for anesthesia gas scavenging system.

7. Integrated Anaesthesia Ventilator

- a) The system should have inbuilt ventilator with electronically controlled and pneumatic or Piston driven technology.
- b) Should not require changing of bellows for adult & infants.
- c) Should have color TFT screen.
- d) Modes: Manual/Spont, Volume controlled, Pressure controlled, , SIMV/PS,
- e) The same ventilator should be capable to be upgrade to pressure support.
- f) Tidal Volume : 20 ~ 1400 ml
- g) PEEP : 0 ~ 20 mbar
- h) Breathing Frequency : 4 to 60 BPM
- i) I:E Ratio : 4:1 to 1:4
- j) Inspiratory pause : 0 – 50% of Ti
- k) Should have Desflurane compensation.
- l) Should be able to ventilate with atmospheric air, in case of total gas supply failure.

8. Integrated Airway monitoring and display of following parameters:

- a) Expiratory Tidal Volume
- b) Expiratory Minute volume
- c) PEEP, Peak & Mean and Plaetau airway pressure
- d) Frequency
- e) Waveform display for Airway pressure.



9. Adjustable high/low alarm limits with audio and visual alarms for the following:

1. Minute volume,
2. Airway pressure (incl stenosis and disconnect),
3. Insp oxygen concentration,
4. Audio power supply fail alarm,
5. Fail to cycle warning.

10. Machine should have RS 232 connectivity port

11. Scope of supply

- a) 3 gas Anesthesia machine
- b) Trolley with 3 drawers
- c) Writing surface
- d) Pin Index yokes for O₂ & N₂O
- e) Pipeline connections for all three gases
- f) Anesthesia ventilator
- g) Patient monitor
- h) Semi-closed breathing system
- i) Adult & Pediatric auto cleavable patient tubing
- j) Anesthetic mask size – Adult & child
- k) Vaporizer for Isoflurane & Sevoflurane
- l) Water trap – 12 nos. & sampling line – 10 nos.
- m) Central gas supply hoses (Color coded)
- n) Instruction for use

12. Specification for Anaesthesia Patient Monitor supplied with it

1. Should be suitable for adult, paediatric neonatal patients monitoring in fixed environment.
2. Should have 19" and above colour display with large fonts and provide access to minimum 8 and above waveforms.
3. Should have minimum ECG, NIBP, SpO₂, 2 IBPs, 2 Temperature, Anaesthetic Gas, BIS and Neuro Muscular Monitoring as standard. All other parameters should be through upgrades as pods/modules and software.
4. Should have Arrhythmia detection including life threatening arrhythmias such as VTACH , ASYST, VFIB as standard feature
5. Should have non-volatile graphic and tabular trending of all monitored parameters as standard for minimum 24 hrs.
6. Should have manual as well as automatic setting of screen format with selectable parameter priority & colour selection for parameter on screen.
7. Should have excellent cable management with as minimum as possible cables at monitor & patient end for maximum comfort to patient as well as user.
8. It should be US FDA approved for monitor as well as all the parameters.
9. Should have Defibrillator and ESU protection, ECG Sync, IABP interface (ECG and Arterial for triggering and deflation with a device delay of <20 millisecond)
10. Ready for wired networking.
11. Bed to Bed monitoring as standard
12. Should have manual as well as automatic setting of screen format,



- mini trend and should support min 10 different layout.
13. Simultaneously monitoring of Two IBP & two Temperature should be standard
 14. Demonstration of quoted model with all required capabilities is a must
 15. Should be provided with appropriate mounting system to mount on anaesthesia system

SHOULD HAVE FOLLOWING PARAMETERS ECG

-5 lead ECG monitoring with three leads of ECG waveform simultaneously monitoring.

-Should display 12 leads of ECG monitoring

-Range 15 to 300bpm

-Should display 12 leads of ECG by connecting 6/5 ECG lead wires (Reduced lead set algorithm) as standard feature

RESPIRATION

Through impedance pneumography/ Capnography method

-Should be supplied with Masimo SET technology with respective sensors

-By oscillometric principle of measurement with step wise deflation. adjustable time intervals from 2 – 240 minutes and adjustable alarm limits **IBP** Simultaneous

monitoring of 2 IBP's should be standard

Range: -50 to 400mmHg

Temperature - two temperature one core and second skin simultaneous monitoring.

Range: -5 to 50Deg C

***BIS**

***NMT**

Standard Scope of supply must include:

- Main unit – 1no
- 5/12 lead ECG Cable – 1 no
- SpO2 finger sensor with extension cable – 1 no
- Skin temperature Probe – 1 no
- Rectal / Esophageal temperature probe – 1 no
- NIBP Hose – 1 no
- Adult & Paediatric Cuff – 1 each
- IBP reusable cable for 2 IBP and 10 pcs disposable transducers
- Instruction for Use
- anaesthetic Gas Module with Sample Lines 100 & Water trap 12
- UPS/battery with 15min backup



2. Equipment Name: Laryngoscope

TECHNICAL SPECIFICATIONS

1. FLEXIBLE NASO-PHARYNGO LARYNGOSCOPE (Fiber optic Laryngoscope)
2. Should have a field of view of at least 75°.
3. Should have a depth of field from 3 to 50 mm.
4. The insertion tube should have maximum 3.5mm diameter or less.
5. Should have at least 130° upwards and 130° downwards angulations.
6. Should have a working length of at least 300 mm.
7. Should have a light guide illuminating system.
8. Should provide suitable light source.
9. Should be supplied with all standard accessories including storage box and list of standard accessories should be specified in the technical bid.

LIGHT SOURCE

1. Should be a halogen light source with minimum 150W light output with 5 spares.
2. Should have manual light intensity control.
3. Should have cooling system.
4. Should work with input 200 to 240Vac 50 Hz supply.
5. 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.

3. Equipment Name: Video Laryngoscope

TECHNICAL SPECIFICATIONS

1. Should be a video laryngoscope convenient for tracheal intubation.
2. Should have a camera for live Image capturing
3. Should have LED light illumination
4. Should have color Image display facility LCD/TFT display
5. Should have provision to insert all sizes of endotracheal tube
6. Should have a provision to introduce all sizes of suction catheters
7. Should have water proof protection
8. Should be supplied with rechargeable battery and provision for re-charge.
9. Should have a battery backup facility of minimum 1hr.
10. Should have all blade sizes/adjustable for adult and paediatric laryngoscopy. If the blades are disposable, should supply 50nos. Of blades compatible for both adult and paediatric along with each unit.



11. Should have safety certificate from a competent authority CE/FDA(US)/STQC CB certificate/STQCS 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.

4. Syringe Pump

TECHNICAL SPECIFICATIONS

1. Should be easy to use and nurse friendly.
2. Should have automatic syringe size and model detection
3. Should have large format LCD/TFT display.
4. Should have a minimum flow rate range from 0.1 – 1200 ml/hr for 50ml syringe, 0.1 – 100 ml/hr for 20ml syringe and 0.1 – 60 ml/hr for 10ml syringe.
5. Syringe range from 20-50/60 ml.
6. Should have a flow rate accuracy of $\pm 2\%$
7. Should have a bolus rate up to 1000ml/hr for 50 ml syringe.
8. Should have automatic and manual bolus.
9. Should have at least 3 levels of programmable occlusion pressure.
10. Should have automatic bolus reduction system to avoid accidental bolus delivery after occlusion incident.
11. Should have a rechargeable battery with back up time of minimum 3 hours.
12. Pump must trigger following alarms with visual indication:-
 - i. Occlusion Pressure Alarm
 - ii. KVO or 3 min pre- alarm
 - iii. Syringe empty and volume infused alarm
 - iv. Internal malfunction and Battery Charge Low Alarm v. Syringe disengaged and incorrectly placed alarm
 - vi. Alarm loudness control. vii. No mains
 - viii. Line disconnected (rapid pressure drop).
13. Should work with input 200 to 240Vac 50 Hz supply.
14. 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



6. Equipment Name :Ventilator ICU

TECHNICAL SPECIFICATIONS

I. Ventilation modes

1. Paediatric mode.
2. Controlled mode.
3. Asst. Controlled mode.
4. Pressure Controlled Ventilation.
5. SIMV/V and SIMV/P.
6. Bipressure Ventilation.
7. CPAP and PEEP.
8. Facility for Non-Invasive ventilation
9. Plateau Facility

II. Ventilation parameters: -

1. Tidal volume - 200 – 2000 ML (Adult patient). a. 50 to 300 ML (Paediatric PC mode).
2. Respiratory rate - 5 – 100 BPH.
3. Pressure - 0 – 100 cm H₂O.
4. Inspiratory Peak Flow - 4 – 100 l/min.
5. Minute volume - 1 – 30 l/min.
6. Oxygen Concentration - 21 – 100 %
7. Inspiratory pause - 0.1 – 5.5 sec.
8. PEEP/CPAP - 30 cm H₂O.

III. Standard Accessories (with each machine): -

1. Patient circuit(Adult reusable) - 2 complete set.
2. Patient circuit (Paediatric reusable) - 1 complete set.
3. Nebulizer Ultrasonic one - Complete set.
4. Humidifier - 1 No.
5. O₂ Pressure Regulator with hose - 1 No.
6. AIR Pressure Regulator with hose - 1 No
7. 5 meters (conversion kit)
8. Hose for O₂ connection with connector - 5 mts.
9. Hose for compressed air with connector - 5 mts.
10. Test lung - 1 No.



IV. **Features:** -

1. Back up mode for apnea.
2. Full alarm system for all ventilator settings and monitored values.
3. Monitor with LCD/TFT (10" or higher size) graphical display for real time simultaneous display of two waveforms. Should display minimum 3 graphs and 2 loops and may not simultaneously
4. Monitoring of both patient data and set values should be possible with trend facility.
5. Direct access to vital settings
6. Transducer should be sterilizable and reusable.
7. PEEP valve should be built in.
8. Patient circuit should have a separate inspiratory and expiratory limb.
9. 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.

V. **Pneumatic Gas Sources:**

1. In case of compressor failure it should also be operable with compressed air / oxygen supply of 45 to 60 psi..

VI. **Power Source:** -

220/240 V Ac 50 Hz supply.

Internal battery (maintenance free) with 1 hour minimum operating time for the ventilator

Vii. **Mounting**

Trolley/Cast mounting for easy transportation

7. **Infusion Pump**

TECHNICAL SPECIFICATIONS

1. Should be operated on drip rate Peristaltic finger pump method.
2. Should compatible with most of the IV set (macro/micro drip sets).
3. Should have the following flow rates.
4. IV Set ml/hr drops/min
15 drops/ml 3~450ml/hr 1~100drops/min
20drops/ml 3~450ml/hr 1~100drops/min
60drops/ml 1~100ml/hr 1~100drops/min



5. Should have a flow rate accuracy of $\pm 10\%$ and drip rate accuracy of $\pm 2\%$.
6. Should have a volume infused display from 0 to 999.9ml.
7. Should have a purge and KVO facility.
8. Should have a audible and visual alarm for occlusion pressure, air alarm, door open, empty, low battery.
9. Should have a LCD display with backlight and graphical display of infusion
Should have a minimum 2hr battery back up at highest delivery rate.
10. Should work with input 200 to 240Vac 50 Hz supply.
11. 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

7.NEURO OT TABLE

TECHNICAL SPECIFICATIONS

Specifications for Motorized Electro Hydraulic & Operating Table for Neuro Surgery

- Should provide warranty of 3 years and AMC of 5 years.
- Should be BIS/ISO/European CE certified approved with 4 digit notified body number/USFDA approved.
- All the firms are required to submit their catalogue along with tender/quotation clearly marking the quoted item and No. with a highlighter.
- Each company should quoted all instruments.
- All the items under a particular serial no. will be purchased together from a single manufacturer.
- Product quality certificate required.

A Motorized Electro Hydraulic & Operating Table

- 1 Constructed of stainless steel and other high quality materials
- 2 Should be capable of most patients positioning for a weight load up to 500 kg in normal orientation and min 270kg all articulations
- 3 Should have stable Stainless Steel base and column with four large swivel antistatic castors
- 4 Should have self-compensatory 4 electro hydraulic powered floor locks with 4mm of floor compensation

B TABLE TOP

- 1 Fully radiolucent table top with motorised back section and motorised Trendelenburg and reverse Trendelenburg, lateral tilts and up-down column movements.
- 2 Table should have inbuilt kidney elevator which can be operated through remote, powered sliding of 450 mm, 225 mm, towards head and 225 mm



towards toe.

- 3 Four sections/segments with uro cut
- 4 Detachable head section and leg section reverse patient orientation should be possible.
- 5 Sitting positions should be achieved through remote control and capability to store and save the position. The table should have at least up to 8 programmable memory.
- 6 Integrated ALS sensor in the table to prevent collision of the column movement and when collision is detected the hand control should vibrate and screen displays the collisions at the same movement.
- 7 The Table should have return to level function with one press of the button on remote
- 8 Side rails on both sides for attaching accessories/clamps
- 9 Mattress pad 2" thick (latex free) for correct and comfortable positioning of patients at the joint areas between different segments, with cut-out on seat position of the table top to
- 10 Mattress to be fully radiolucent, antistatic, detachable, impermeable to fluids, easily cleanable.

C Technical data :

- 1 Motorised longitudinal sliding 450 mm 225 mm towards head and 225 mm towards toe height adjustment lowest height min. 610-660 mm and upper height min. 1100-1150 mm or more.
- 2 Trendelenburg / Reverse Trendelenburg :30 degree/30 degree or more
- 3 Lateral tilt +/- 20/20 deg .
- 4 Back Rest- - 40/+80 Deg
- 5 Kidney bridge - 110mm-120 mm
- 6 Head section adjustment -80/+80 Degree or more
- 7 Leg section adjustment 0 to -105 deg.
- 8 Overall length with head plate – 2030 mm
- 9 Width of table - 560mm
- 10 Flex/reflex: 140 deg/10 deg

D OPERATION SYSTEM :

- 1 Electrically driven on 220 to 240 V, 50 Hz AC mains
- 2 In built rechargeable battery backup with a capacity to operate the table for 1weeks in case of mains AC power failure. The battery status should be indicated on both Base and Hand control through LED
- 3 Hand control can be corded/remote and should have feedback LEDs.
- 4 Manual override (Battery Powered Auxiliary control switches) operation for critical table movements in case of power/ hand control failure or on hand control loss. The over ride system should have following back up movements up/down, Trend/Rev Trend, Rt/Lt Tilt, Floor Locking

E Standards

- 1 The table should be having BIS/ISO/US FDA /CE (European directive) certification 93/42
- 2 The equipment should be designed to comply with existing international standards in terms of safety and performance i.e.



Underwriters Laboratories (UL) standard 60601-1 2nd edition as certified by ETL
IEC 60601-2: 2001, Electromagnetic compatibility as certified by ETL
IEC 60601-1: 1993, 2ND EDITION, 1995, Electrical safety, as certified by ETL
IEC 60601-2-46-1st Edition, as certified by ETL
CE Marked to Medical Device directive, 93/42/EEC

- 3 Table should be IPX4 Compatible
- 4 All technical specifications accepted in the compliance statement must be supported by printed literature from the firm.

Standard Accessories

Headrest with Cushion	1
Pair of standard leg support with cushion	1
Flexible Anaesthesia screen with Clamps	1
Simple Arm board with clamps	2
Patient Strap	1

Neuro Surgery Accessories

Neuro Adapter	1
Base Unit for Neurological headrest system	1
Neurosurgical Skull Clamp Headrest	1
Swivel adapter	1
Neurosurgical Horse shoe Headrest Adult	1
Neurosurgical Horse shoe Headrest Paediatric	1
Adult Skull reusable pin set of 3	1
Paediatric Skull pin set of 3	1
Attachment for sitting position	1
Clamps as required for attaching all accessories above	1

all material made up of neurosurgeries accessories should be radiolucent and compatible for intra op CT and MRI

8. Transport Multiparameter Monitor

TECHNICAL SPECIFICATIONS

- 1 Portable and Light weight preferably <10kg Should have TFT/LCD display with at least 10.4 inches with 4 wave forms and numeric display simultaneously. The waveforms should be user selectable.
- 2 Transport Monitor is required to monitor vital parameters of patients during Capability of storage of patient data and printing of patient reports. Transport monitor should be portable and light weight and should monitor vital parameters



of patients. transportation to and from OT; Emergency; Trauma ambulances etc.
Should be compact & portable with carrying handle

- 3 Monitor should have in built Lithium-ion type battery for 4 Hrs continuous operation in case of mains failure.
- 4 Should have keys for quick access to main functions.
- 5 Should be able to monitor ECG, SpO₂, NIBP, Respiration Rate, ETCO₂ & Temperature for adult, paediatric and neonatal patients
- 6 3 or 5 Lead ECG monitoring with lethal arrhythmia recognition capability and ST analysis
- 7 Respiration & Apnea alarm
- 8 Manual, Auto and STAT mode for NIBP monitoring and ranges should be 20 to 230 mmHg.
- 9 Pulse Oxymeter (SpO₂) with Plethysmograph & Pulse strength indicator with variable pitch with change in SpO₂
- 10 Side-stream Capnography with display of CO₂ wave form & digital values (ETCO₂, FiCO₂, RR).
- 11 Should have separate volume control for beep sound for QRS and alarm sound.
- 12 The display setting should have at least 4 user defined setups variable as per applications for flexible use of the monitor in various clinical environments.
- 13 Monitor should have networking options
- 14 Should have separate volume control for beep sound for QRS and alarm sound.
- 15 Should provide following accessories
 - Microstream / Side stream ETCO₂ disposable kit for adult-25 nos, paediatric & Neonatal – 2 nos. each
 - Reusable adult 3 or 5 lead ECG cable set – 2 nos.
 - Reusable adult and pediatric SpO₂ finger probes – 1 each
 - Disposable SpO₂ probes for neonatal use- 10 nos.
 - NIBP cuffs for standard Adult, Obese Adult, Child and infant – all 1 each

9. Equipment Name: Head Lamp with LED Light Source

Technical Specification

1. Head Light
 1. Intensity of the light should be 1,75,000 lux or more
 2. It should have double lens system with Y-fiber optic light cable with a minimum length of 280 cm or more



3. Illuminated area should be adjustable from 20-80 mm with a minimum working distance of 40 cm
 4. Focus handle of the headlight should be removable and sterilizable
 5. It should consist of fully adjustable headband with headlight holder and cross band with forehead cushion
2. Light Source
1. Should be LED cold light source
 2. Light intensity should be adjustable
 3. Power : 150 W or more
 4. Power supply : 100-240 VAC, 50/60 Hz
 5. The unit should comply with international standards such as FDA/CE or equivalent

10.SPECIFICATION OF LED VIEW BOX FOUR FILMS

Technical Specification

1. Ultra Thin X-ray Film illuminator using LED Lamps.
2. The Thickness should be 25mm – 30mm.
3. It should be suitable for viewing 14” x 17” films.
4. It should have LED lamps having life-span of more than 100,000 hours.
5. It should have easy insertion & removal of the films.
6. It should have homogeneous illumination & having luminance of more than 1200 cd/m².
7. It should have separate On-Off function & separate rotary continuous adjustable brightness control for each panel.
8. It should have auto on/off function with insertion and removal of films.
9. It should have fully electronic continuous brightness control, with adjustment range of approximately 90%.
- 10.It should be directly connectable to power supply without any external adaptor.
- 11.It should have Flicker free high frequency light for reduction of eye strain.
- 12.It should have external fuses for protection against power surge.
- 13.Manufacturer/Item should be ISO/FDA certified.

11.BLOOD WARMER

Technical Specification

I. Specifications for Blood Warming and Infusion Set:

- 1.Intended for use in operation theatre and ICU to deliver normothermic and warm blood and fluids at a very high infusion rate
- 2.Fast flow fluid infusion system
- 3.Fluid warming integrated
- 4.Air detection system integrated- ultrasonic air detection technology preferable
- 5.Automatic stoppage of flow when air is detected
- 6.Minimum 500 ml/minute flow



- 7.Rigid pressure chambers should accommodate standard blood and crystalloid bag (one litre bag optional)
- 8.Providing a constant pressure for rapid infusion
- 9.On/Off toggle switch to quickly and easily pressurize chambers
- 10.Dual bag connection facility
- 11.Pole mounting facility/wheel facility
- 12.Touch buttons for control
- 13.All consumables for the equipment should be provided for 20 usage.

II. Operational Requirements:

- 1.The Blood Warming and Infusion Set should be user friendly, safe to use
- 2.Demonstration of the equipment is a must.

III. Standards, Safety and Training:

- 1.Should be FDA or CE or BIS approved product.
- 2.Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements. (or equivalent BIS Standard)
- 3.Manufacturer/Supplier should have ISO certification for quality standards.
- 4.Certified for meeting IEC60601-2-24: Particular requirements for the safety of infusion pumps and controllers
- 5.Should meet IEC 529 Level 3 and 4 (IP3X)(spraying and splashing water) for enclosure protection, water ingress.
- 6.Electrical Safety Classification Class I/II, Type CF and Internally powered equipment.

IV Power Supply

- 1.Power input to be 220-240VAC, 50Hz fitted with Indian plug

V. Documentation

- 1.User Manual and Service manual in English must be provided.

VI Installation, Commissioning and Testing,.

- 1.The equipment and all accessories should be transported, installed, tested and commissioned at the site.

IX Warranty and After Sales Service:

- 1.The Equipment including all accessories including bought out items should be under WARRANTY for a period of THREE YEARS after successful commissioning.
- 2.All spare parts and consumables should be available with supplier or principals for a period of at least 10 years.



3.Should have local service facility.The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.

2.All Essential Spare parts / Consumables rates to be given separately which may be frozen for next 10 Years.

1.Suppliers should have made a large number of installations, within the last five years, in the country in reputed institutions and preferably in Government Hospitals with a proven track record of excellent after sales support for this system.

12.PATIENT WARMERING DEVICE

Technical Specifications

1. Microprocessor Based
2. Unique Temperature Control System
3. High Air Flow
4. Alarm indicator for Over Temperature and Under Temperature
5. Hose end Temperature Digital Display
6. In built Air Filter
7. Disconnect indicator
8. Elapsed Time Displa
9. Floor mountable or IV pole mountable
- 10.Accessories : 5 Nos. of blanket

13 Multi parameter Monitor with Capnogram

Technical Specification-Multiparameter monitor with Capnogram (Various)

- 1 Should have TFT/LCD display with at least 10.4 inches with 4 wave forms and numeric display simultaneously. The waveforms should be user selectable.
- 2 Should be compact &portable with carrying handle
- 3 Monitor should have in built Lithium-ion type battery for 4 Hrs continuous operation in case of mains failure.
- 4 Should have keys for quick access to main functions.
- 5 Should be able to monitor ECG, SpO₂, NIBP, Respiration Rate, ETCO₂ & Temperature for adult, paediatric and neonatal patients
- 6 3 or 5 Lead ECG monitoring with lethal arrhythmia recognition capability and ST analysis
- 7 Respiration & Apnea alarm
- 8 Manual, Auto and STAT mode for NIBP monitoring and ranges should be 20 to 230 mmHg.



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Microstream / Side stream ETCO₂ disposable kit for adult-25 nos, paediatric & Neonatal – 2 nos. each

Reusable adult 3 or 5 lead ECG cable set – 2 nos.

Reusable adult and pediatric SpO₂ finger probes – 1 each

Disposable SpO₂ probes for neonatal use- 10 nos.

NIBP cuffs for standard Adult, Obese Adult, Child and infant – all 1 each

14.SUCTION APPARATUS

TECHNICAL SPECIFICATIONS

1. Rating of Motor- continuous
2. Suction Bottle Capacity- 2 x 2000 ml minimum (with safety valve)
3. Guage- 0 to 760 mm Hg
4. Pump- Oil lubricates rotary pump
5. Suction Tubings- ID 7 mm, 5m long and non-collapsible.
6. Should have air tight lids.
7. Should have a noiseless Operation
8. Should provide filter to absorb moisture and water particles entering into the rotor.
9. Should have an external provision for topping up of lubricant.
10. Should be well-designed, cabinet made of mild steel powder coated
11. Should bear ISI mark
12. Volt- 230 V ac

15.Equipment :DVTSCP Pump (Pneumatic compression device)

Technical Specification

1. Should consist of DVT pump & DVT sleeves/garments



2. Should provide sequential, circumferential, gradient pneumatic compression around the ankle, calf & than thigh from below to upwards.
3. Should have different compression level at all the points
4. Pressure range from 30 mm HG-130 Hg with therapeutic pressure & highest pressure for foot cuff
5. Should be portable, light weight weighing between 2-3 kg
6. Should operate on power 220-240 Vac, 50Hz
7. Cycle duration should be max 60 sec with cycle time approx 11-12 secs for inflation
8. Should have single leg usage option if needed
9. Alarm should be audible
10. Should have adjustable bed mount which attaches easily and securely to most foot boards
11. Should be supplied with required disposable garments at least 25 pair each knee, thigh & 10 foot cuffs that is compatible with device
12. Garments should be high class fabric incorporating bladder geometry that evenly conforms & distributes pressure without kinking tube attachment for connection to device
13. Integrated battery backup of 6-8 hrs of Li-ion type
14. 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
15. Rates of disposable garments should be quoted separately which should be valid for 3 years

16.SURGICAL HYDRAULIC CHAIR

Technical Specifications:

Features And Benefits:

- Dual density foam seat and adjustable backrest offer maximum support and positioning
- Optional versatile-positioning padded armrests



- The ideal surgeon's stool for maximum clinical performance
- Choose a seat configuration suitable for personalized comfort

Standard Features:

- Front-end locking system
- Adjustable contoured backrest
- Dual density foam cushions for seat and backrest
- Foot-controlled, hydraulic, three-spindle base
- Thermoformed plastic hood
- Teardrop or wedge seat

Optional Features:

- Saddle seat
- 2" (5 cm) riser kit
- Multi-position wrist rest /armrest
- Height Range : High 28.5" (72 cm) Low 21" (53 cm)
- Height Range With Riser Kit: High 30.5" (77.5 cm) Low 22" (56 cm)
- Seat Cushion Style : Teardrop Wedge Saddle



NEUROSURGERY EQUIPMENT

Technical Specification

1. Equipment Name: Cautery/ Surgical Diathermy Machine

1. All units/ items including accessories should be Indian Standard certified (BIS)/USFDA and European CE certified.
2. Should be able to operate with Indian Standard Mains Supply Power – 220 – 240 Volts AC, 50 Hz
3. 5-year warranty & 5 year CMC (wherever applicable) should be included with provision of supply of spare parts items for next 10 years
4. Principal Company should have registered Office and Service Network in India, preferably Central India for better service support.
5. User manuals should be in English. Provision of trained manpower support for at least for initial 3 months after installation or up to a period when the staff/technicians at AIIMS Raipur are trained in handling, storage and proper sterilization methods of supplied equipment has to be ensured by the bidder.
6. Compliance statement should be submitted in a tabulated and point wise manner.
7. Price of essential consumables should be fixed for next 5 years.
8. Customized Imported Trolley/s for main unit/s, as well as Suitable customized storage/sterilization cases for attachments or bipolar forceps, should be supplied in adequate number even if not separately asked for. (These should be from the manufacturer of accessory only- non customized trolley /containers from other manufactures will not be accepted).
9. Unit/s must be Microprocessor controlled H.F. Unit/s with high power efficiency rating.
10. Dedicated Diathermy unit for Neurosurgery and Micro-neurosurgery- submit the list of reputed users in India and performance report including after sale service.
11. Should have Monopolar and Bipolar output. The system should come with irrigation system providing precisely measured irrigation to support the surgeon in bipolar coagulation & bipolar cutting.
12. If any manufacturer has only bipolar unit with integrated irrigation then a separate Monopolar unit with all accessories and customized trolley, all of which is Indian Standard Certified (BIS)/USFDA & ECE certified should be supplied along with.
13. Monopolar should have different mode like Cut, Blend, Soft and Spray facility, bipolar should have cut, coagulation.
14. Output should be 300 watts or better (Monopolar) and 80 watts or better (Bipolar) output.
15. The micro setting of bipolar should be between 1 – 10 watt or similar with an increment of 1 watt.
16. Display should be digital
17. It should have user-defined, programmable profiles.
18. Should have Alarm and Error Display Facility for Safety of Patient and
19. Operator Accessories to be supplied- Indian Standard (BIS)/USFDA & ECE certified



20. Should have standard Accessories Monopolar Handle, Cables, Foot Paddle, Bipolar Forceps , Cable, Neutral Plate, Cable and Electrodes, irrigation unit, (if not integrated) should have standard Accessories like power cord, pressure cut off & tube set.
21. Sterile Monopolar Cautery pencils with attached leads- 100 units and Reusable type handles are quoted then quote at least 3, reusable sterilizable handles with push buttons, tips and 6 reusable connecting cables with appropriate plugs.
22. Reusable patient contact electrode-10
23. Loop Monopolar electrodes tips of different sizes- 5 each (size 6mm, 12mm, 16mm dia.)
24. Autoclavable reusable bipolar cables- 10
25. Sterile Irrigation tubing sets- 100
26. Bipolar forceps + storage container/s
27. Insulation coating should be robust & impact resistant.
28. Exposed tip should not be more than 8mm unless necessitated by forceps working design (allowed in few forceps only).
29. Plug should preferably be flat-pin type and should be self cleaning to ensure proper & reliable electrical contact.
30. Tips should ensure high precision grasping of tissue.
31. In bayonet type forceps, geometry should be optimized for use under operating microscope so that maximum view of the surgical site should be obtained. The fingertip handling should be safe and precise.
32. Customized Storage container from the same manufacturer with mesh tray and silicon receptacles for these should be provided in appropriate number; forceps without appropriate storage container will not be accepted.
33. Bayonet shaped, insulated, irrigation bipolar forceps, small size working length about 70 mm or similar.
34. Tip size pointed 0.2 mm - Qty 1,
35. Tip size fine: , 0.7 mm – Qty 1
36. Tip size standard: 1.3 or similar – Qty 1 (Total 3)
37. Bayonet shaped, insulated, irrigation bipolar forceps, total length about 90 mm or similar
38. Tip size pointed 0.2 mm – Qty 1,
39. Tip size very fine: 0.4 mm – Qty 1
40. Tip size fine: 0.7 mm – Qty 1
41. Tip size standard 1.3 mm or similar – Qty 1 (Total 4)
42. Standard, Yasargil type, insulated, bayonet shaped bipolar forceps small size working length 50-60 mm or similar, tip size 1-1.3 mm(Total 2)
43. Bayonet shaped, insulated, irrigation bipolar forceps, long size with ring tip, working length about 115 mm or similar tip size- 4/5 mm or similar (Qty-1)
 - i. (Total-1)
44. Standard, Yasargil type insulated, bayonet shaped bipolar forceps- medium size, working length 75-80 mm or similar, total length 190-200 mm
45. Tip Size fine 0.6-0.7 mm Qty- 1
46. Tip Size fine 1-1.3 mm Qty- 1
 - i. (Total 2)
47. Standard, Yasargil type insulated, bayonet shaped bipolar forceps- long size, working length- 95-100 mm or similar, total length 210-220 mm
 - a. a)Tip size fine 0.6-0.7 mm Qty-2 (Total-2)



48. Standard, Yasargil type insulated, bayonet shaped bipolar forceps- extra long
49. size, working length- 130 mm or above, total length about 250 mm, tip size fine 0.6-0.7 mm or similar Qty-1 (Total-1)
50. Non stick type, insulated, bayonet shaped, working length about 100mm tip should be curved, Tip size about 0.6– 0.7 mm or similar Qty- 1 each (up and down curved tips). (Total-2)
51. Non stick type, insulated, bayonet shaped, total length about 70 mm,
52. Tip size about 0.6-.07mm or similar Qty- 1,
53. Tip size 1 mm or similar Qty -2. (Total 3)
54. Non stick type, insulated, bayonet shaped, working length about about 100 mm,
55. Tip size about 0.6-.07mm or similar Qty- 2
56. Tip size 1 mm or similar Qty-1 (Total 3)
57. Standard type, insulated, straight shape,
58. Length about 120 cm , tip size 0.9 mm or similar Qty -1
59. Length 150 – 160 mm, tip size 0.9 mm or similar Qty -2 (Total 3)
60. Appropriate Equipment cart/ Trolley/s from the same manufacturer for easy mobility of diathermy unit should be provided.
61. Any other accessory essential for proper use or maintenance of equipment for at least 100 cases should be provided.
62. 95% up time guarantee should be assured. In case down time exceeds 5%, penalty in the form of extended warrantee, double the number of days for which the equipment goes out of service, will be applied.
63. Specs for irrigation pump:
64. The unit should be peristaltic roll pump with continues type of operation
65. The unit should have option to activate via foot switch or control panel of the unit or via synchronized electro surgery unit
66. The unit should have provision to adjust Flow rate of the unit using 3 quick activation buttons (Pre-set values of 30, 50, 80 %)
67. The unit should provide only irrigation solution from NS bottles directly for flushing in the advanced procedures to maintain sterility.
68. The unit should work as stand alone, as well as synchronized with the electro surgery unit.
69. The unit should have maximum flow rate of 500 ml/ min
70. The unit should be Indian standard(BIS)/US FDA approved and should compile all IEC norms

2. Equipment Name: Cusa Ultrasonic Tissue Ablation System

Technical Specification

Sl.No.	Description	Qty.
1	CUSA Console containing : Foot switch, Cooling reservoir. Contamination Guard, in-service Video featuring user friendly control panel guide with simplified hand piece and manifold tubing, laparoscopic mode for effective Minimal invasive procedures.	1 No.



2	<p>Unique tissue select feature allows surgeons the freedom to choose the selectivity of tissue fragmentation, maximizes tactile feedback, enabling the surgeon to avoid vital structures, offer Greater control and precision. For dissection near delicate structures. Pumps run at lower values to reduce noise in the OR. Enters a quiet "resting" state when not in use. Power maximum amplitude. Provides maximum suction power to increase tip/tissue Coupling and fragmentation ability.</p>	1 Set
3	<p>Tip Torquing Set</p> <p>36KHz Straight Hand Piece</p> <p>Lightest hand piece of any ultrasonic aspirator system Providing delicate control.</p> <p>Magnetostrictive technology utilized for increased Surgeon confidence and reliability.</p> <p>Curved tips provide greater visibility under an operating Microscope.</p> <p>Selection of nine tips for a wide variety of surgical Applications.</p> <p>CEM™ nosecone available to provide simultaneous or independent activation of ultrasonic and electrosurgical Functions.</p> <p>Complete disassembly of the hand piece for cleaning with No inaccessible channels to trap tissue.</p> <p>Steam serializable hand piece reduces turnaround time and is in compliance with industry standards.</p> <p>Redesigned colour coded packaging provides easy Identification of tips and manifold tubing.</p>	1 Piece
4	36 KHz Standard Tip – 1.98 mm inner Diameter, 4.57 cm length.	4 Pieces
5	36 KHz Tubing Set.	6 Pieces
6	36 KHz Sterilization Case.	1 Piece
7	Contamination Guard (2 Nos. per Box)	1 Box
8	2000ml suction receptacle, reusable	2
9	CEM Nosecone to be used with all the tips as Electrocautery- 36KHz CEM Nosecone	



3.Equipment Name: Electrical drill (Neuro Drill) For Spine And Brain

Technical Specification

1. Should be a versatile powered system, having cranial & spine, applications
2. Should have in built user friendly interactive menu and illustrative help guide
3. Should have large Touch screen monitor
4. The various parameters should be able to adjust either from touch screen panel or from the multifunction foot switch
5. Should be able to connect multiple hand pieces at a time like Neuro Drills (up to 75000RPM),
6. Console should recognize the various hand pieces and automatically adjust the settings accordingly
7. Should have inbuilt pumps each for Irrigation (5Cc / Min to 100Cc / Min)
8. Should have multifunction ergonomically designed foot control with light emission for easy identification
9. Should be able to control Speed / Mode, Forward / Reverse toggle, Active hand piece change from the Foot control itself
10. Should have the provision to mount the console on various sizes of IV pole
11. Should have the option of work without foot paddle
12. Should have two pumps to control irrigation
13. Attachments and Accessories:
14. Should have 9cm, 10cm - 1 No. each
15. Craniotomy Attachment (Adult) – 1 No.
16. Craniotomy Tools
17. Adult Cutter- 5 Nos. each
18. Tools (Burs) for 10 cm
19. Ball Regular (Cutting) – 4 mm, 5 mm – 1 No. each
20. Ball Diamond – 4 mm, 5 mm – 1 No. each
21. Tools (Burs) for 9 cm
22. Acron 6 mm, 7.5 mm – 1 No. each
23. Ball Regular (Cutting) - 5 mm bur – 1 No. each

4.HIGH END NEURO SURGERY OPERATING MICROSCOPE SPECIFICATIONS

Technical Specification

1. Powerful apochromatic system with zoom system, ratio 1:6.
2. Overall magnification range should be Not Less than upto 18.2x, with 10x / 12.5x push-in widefield eyepiece.
3. Variable working distance range from 200-500mm
4. Stereo co-observation tube attachment should not move when the microscope is repositioned during the surgery.
5. Symmetrically configured face-to face attachment
6. Microscope should provide two channel illumination design to reduce shadowing in deep cavities.
7. Variable spot illumination should be integrated into the microscope
8. Microscope should have an electronically controlled iris diaphragm facility
9. Microscope should have facilities to link the focussing mechanism and illumination intensity enabling automatically to control the brightness.



10. Robotic motorized X/Y adjustment for lateral/front-to- back movement of the microscope body in all directions.
11. Laser based Autofocus system
12. One touch Auto Balance of Microscope and suspension system
13. Microscope should have inbuilt 3-Chip camera HD of the same make .
14. digital recording system, offering HD recording facilities
15. Microscope should have an intelligent internal cable management including the light guide, offering highest ease in movement of the microscope in the OR
16. Handgrips programmable to each user's needs
17. Large color High Definition Touch screen as central user interface with video output, Tiltable and rotatable facilities of the High Definition Touch screen, With Graphic user interface
18. Integrated patient data management, Should be operated via touch screen.
19. Data exchange via USB,
20. Automatic saving of all data such as photos, stills, videos of an particular patient once entered in the patient directory of the microscope system via touch screen
21. Microscope should have an Advanced MultiVision display for any digital data, Navigation information, video image injection, onscreen display and system information. completely integrated into the microscope eye piece, without any external modules
22. Optional DICOM interface for patient data exchange such as images, videos, patient directory- directly from microscope systems to Hospital network should be possible.
23. Microscope should be upgradable to Intra operative Fluorescence package such as Vascular fluorescence , Vascular flow analysis, Tumor Fluorescence (Blue 400 or Yellow 560).
24. Intra operative fluorescence modules must not change shape or building height of the microscope or add external weight
25. Should have Intraoperative Fluorescence Like Yellow 560 or Vascular Fluorescence ICG.

5. LIST OF GENERAL INSTRUMENTS FOR NEUROSURGERY

Sl.No.	DESCRIPTION	Qty
	CRANIOTOMY SET	
1	Perforated Tray 18"X12"X 6.5"	1
2	Sponge Forceps, straight, serr, 10"	2
3	Backhaus Clamp, 5¼	6
4	Knife Handle, #3	1
5	Knife Handle, #4	1
6	Knife Handle, #7	1
7	Mayo Scissors, straight, 6¾	1
8	Mayo Scissors, curvedt, 6¾	1



9	Metz Scissors, curved, 7"	1
10	Frazier Dural Scissors	1
11	Operating Scissors, straight, S/B, 5½	1
12	Adson Dressing Forceps, 5	1
13	Adson Dressing Forceps, 1x2, 5	1
14	Cushing Dressing Forceps, serr, 6"	1
15	Cushing Tissue Forceps, serr, 8"	1
16	Cushing Bay Dressing Forceps, 7¾	1
17	Cushing Bay Tissue Forceps, 7¾	1
18	Halsted Mosquito Forceps, straight, 5	4
19	Halsted Mosquito Forceps, Curved, 5	6
20	Dandy Scalp forceps, serr	12
21	Devilbiss Rongeur with blade	1
22	Luer rongeur, curved, 6"	1
23	Lempert Rongeur, curved 8"	1
24	Zaufal-Jansen rongeur 6"	1
25	Stille-Luer rongeur, straight 9"	1
26	Stille-Luer rongeur, angled 9"	1
27	Spurling IVD Rongeur, straight,7" 1mm	1
28	Spurling IVD Rongeur, straight,7" 2mm	1
29	Spurling IVD Rongeur, straight,7" 3mm	1
30	Spurling IVD Rongeur, up, 7" 1mm	1
31	Spurling IVD Rongeur, up, 7" 2mm	1
32	Spurling IVD Rongeur, up, 7" 3mm	1
33	Up Cutting punch 1mm	1
34	Up Cutting punch 2mm	1
35	Up Cutting punch 3mm	1
36	Up Cutting punch 4mm	1
37	Weitlaner Retractor, sharp, 6 1/2"	1
38	Jansen Mastoid Retractor, blunt	1



39	Cushing Vein Retractor	1
40	Cushing Decompression retractor	1
41	Penfeild Dissector No.1	1
42	Penfeild Dissector No.2	1
43	Penfeild Dissector No.3	1
44	Scoville Brain Spatula, small	2
45	Scoville Brain Spatula	1
46	Cushing Spatula Spoon, 6 ³ / ₄	2
47	Davis Brain Spatula, ³ / ₄	2
48	Cushing Wide Sharp Elevator	2
49	Frazier Dural Separator	1
50	Spinal Curette, straight,	1
51	Spinal Curette, straight,	1
52	Spinal Curette, straight,	1
53	Spinal Curette, straight,	1
54	Cobbs Spinal elevator 8mm	1
55	Cobbs Spinal elevator 10mm	1
56	Cobbs Spinal elevator 13mm	1
57	Cobbs Spinal elevator 19mm	1
58	Cushing Perforator	4
59	Cushing Burrs	8
60	Hudson Cerebellar Extender	1
61	Hudson Brace Frame	1
62	Adson Drill Guide	1
63	Gigly Saw	4
64	Gigli saw Handle, loop	2
65	Gigly Saw Guide, straight	2
66	Frazier Dural Hook	1
67	Dandy Nerve Hook, straight	1
68	Frazier Tube, angled, 4½, 9, FR	1



69	Cone Ventricular Needle, 16G	1
70	Cone Ventricular Needle, 18G	1
71	Adson Dural Needle Holder, 6"with tc tip	1
72	Mayo-Hegar Needle Holder, 8" with TC Tip	1
73	Bowl 5"	5

BURR HOLE SET

Sl.No.	DESCRIPTION	Qty
1	Perforated Tray 15"X 12"X 6.5"	1
2	Dissecting Forceps,Standard,1x2,16cm-6 1\4"	1
3	Dissecting Forceps,Standard,Non-Tooth,16cm-6"	1
4	Dissecting Forceps,Adson,1x2,12cm-4 3\4"	1
5	Dissecting Forceps,Adson,Non-Tooth,12cm- 5"	1
6	Dissecting Forceps, Cushing, Bayonet, Non-Tooth,- 7 "	1
7	Blade/B.P Handle,12.5cm-5",# 3	1
8	Blade/B.P Handle,13.5cm-5 ",# 4	1
9	Blade/B.P Handle,16.5cm-6 1\2",# 7	1
10	Micro Dissector,Penfield,18cm-7",#1	1
11	Probe, With Dissector,Watson-Cheyne,13cm—5 1/8"	1
12	Probe, With Dissector,Watson-Cheyne,18cm-7"	1
13	Elevator, Howarth, Sharp/Blunt,21cm-8 1/2",1/1	1
	Suction Cannula, Fergusson, With Finger Cut-Off	
14	And Stylet,2.5mm,19cm-7 1/2"	1
	Suction Cannula, Fergusson, With Finger Cut-Off	
15	And Stylet,3mm,19cm-7 1/2"	1
	Suction Cannula, Fergusson, With Finger Cut-Off	
16	And Stylet,4mm,19cm-7 1/2"	1
	Suction Cannula, Fergusson, With Finger Cut-Off	
17	And Stylet,5mm,19cm-7 1/2"	1
18	Sponge Holding & Dressing Forceps, 20cm-8"	1



19	Towel Clip,Backhaus,13cm-5 1\8" / 5 1/2"	4
20	Artery Forceps,Mosquito,Curved,12.5cm-5"	4
21	Artery Forceps, Rochester-Pean,C d,16cm-61/4"	4
22	Boys-Allies,5x6,15cm-6"	2
23	Artery Forceps,Kocher,Straight,20cm-8"	2
24	Needle Holder, Mayo-Hegar, T C Tip,18cm-7"	1
25	Needle Holder, Debakey, T C Tip,15cm-6"	1
26	Scissors,Metzenbaum,Curved,15cm-6"	1
27	Scissors ,Jameson,Cuverd,18cm-7"	1
28	Scissors,Metzenbaum,Straight,18cm-7"	1
29	Scissors, Mayo-Noble, Straight, Broad, 7"	1
30	Retractor, Hand Held, Langen beck, 21cm-8, 1/2",30 X 7mm	2
31	Retractor, Hand Held, Langen beck, 21cm-8 1/2",30X, 10mm	2
32	Retractor, Self Retaining,Weitlaner,Blunt,3x3,13cm-5 1/8"	2
	Elevator, Freer, Double Ended, Sharp/ Blunt,	
33	6.5mm, 19cm-7 1/2"	1
34	Bone Punch,Kerrison,45deg,Up,2mm,18cm-7"	1
35	Bone Rongeur,Lempert,Str,20cm-8"	1
36	Trachea Retractor ,4 Tooth, Blunt ,18cm-7"	1
37	Hudson Brace Frame	1
38	Hudson Brace Extension	1
39	Hudson Brace Burr Conical	8
40	Hudson Brace Perforator	4

Rhoton Micro Set

Sl.No.	DESCRIPTION	Qty
1	Perforated Tray 18"X 12"X 6.5"	1
2	Round dissector Small	1
3	Round dissector Medium	1
4	Round dissector Large	1



5	General Purpose Elevator Small	1
6	General Purpose Elevator Large	1
7	Spatula Dissector Small	1
8	Spatula Dissector Medium	1
9	Spatula Dissector Large	1
10	Semi-Sharp Hook 90°	1
11	Blunt Hook 90°	1
12	Semi-Sharp Hook 45°	1
13	Straight Point Needle	1
14	Micro Curette Small	1
15	Micro Curette Large	1
16	Tear drop Dissector straight	1
17	Tear drop Dissector 90°3mm	1
18	Tear drop Dissector 90° 5mm	1
19	Tear drop Dissector 45°4mm	1
20	Tear drop Dissector 45° 8mm	1
21	Forceps Extra Fine 3mm tip	1
22	Forceps fine 7mm tip	1
23	Scissors straight Tip 7"	1
24	Scissors Curved tip 7"	1
25	Needle holder Curved Fine 5mm tip 7"	1
26	Needle Holder Straight .9mm tip 7"	1
27	Needle holder curved .9mm tip 7"	1
28	Micro Tissue Forceps 1x2 teeth 7"1.0mm tip 7"	1
29	Micro dressing Forceps Serrated 7" 1.8mm tip 7"	1
30	Yasargil Micro Suction 1.7mm	1
31	Yasargil Micro Suction 2.5mm	1
32	Yasargil Micro Suction 3.5mm	1
33	Yasargil Scissors Str 7"	1
34	Yasargil Scissors cvd 7"	1



35	Yasargil Scissors Str 9"	1
36	Yasargil Scissors cvd 9"	1
37	Yasargil Needle holder Str 7"	1
38	Yasargil Needle holder Str 9"	1
39	Yasargil Needle holder Cvd 7"	1
40	Yasargil Needle holder Cvd 9"	1
41	Yasargil forceps fine tip 7 1/4" .9mm	1
42	Yasargil forceps fine tip 9" .9mm	1
43	Yasargil Tumour Grasping cup 8 3/4" 3mmØ	1
44	Yasargil Tumour Grasping cup 8 3/4" 5mmØ	1
45	Yasargil Tumour Grasping Serrated 8 3/4" 3mm	1
46	Yasargil Tumour Grasping Serrated 8 3/4" 5mm	1
47	Bayonet Forceps 7" 1mm	1
48	Bayonet Forceps 7" 2mm	1
49	Bayonet Forceps 7" 3mm	1
50	Bayonet Forceps 7" 4mm	1
51	Frazier Suction 2mm	1
52	Frazier Suction 3mm	1
53	Frazier Suction 4mm	1
54	Frazier Suction 5mm	1
55	Beckman Adson Retractor 12"	2
56	Beckman Adson Retractor 10.5"	2
57	Jansen Mastoid Retractor	1
58	Weitlaner Retractor, 5"	2
59	Shunt tunneller Adult	1
60	Shunt tunneller Adult Peadiatric	1

NEURO EVD SET

Sl.No.	DESCRIPTION	Qty
1	Perforated Tray 15"X 12"X 6.5"	1
2	B.P Handle No:3	1



3	Dissecting Forceps Non Toothed	1
4	Dissecting Forceps Toothed	1
5	Artery Forceps Cvd 6"	2
6	Needle Holder 6" Tc	1
7	Sponge Holder	1
8	Brain Cannula With Stillet	2
9	Self Retaining Retractor-Mastoid Jansens	2
10	Metzenbaum Scissors Str 8"	1
11	Artery Forceps Str 6"	2
12	Mosquito Forceps Cvd	2
13	Mosquito Forceps Str	2
14	Gallipot	3
15	Kidney Tray 8"	1

VP SHUNT

1	Perforated Tray 15"X 12"X 6.5"	1
2	Bp Handle No 3	1
3	Bp Handle No 4	1
4	Bp Handle No 7	1
5	Artery Forceps Curved 6"	6
6	Artery Forceps Straight 6"	6
7	Mosquito Forceps Curved	6
8	Mosquito Forceps Straight	6
9	Allies Forceps	4
10	Needle Holder 6" Tc	2
11	Needle Holder 8" Tc	2
12	Mayo Scissors Curved 8"	2
13	Mayo Scissors Straight 8"	2
14	Metzenbaum Scissors Curved 8"	2
15	Thumb Forceps Toothed 6"	2
16	Thumb Forceps Nontoothed 6"	2



17	Thumb Forceps Toothed 8"	2
18	Thumb Forceps Nontoothed 8"	2
19	Sponge Holder	2
20	Bowl Big	1
21	Bowl Small	2
22	Gallipot	1
23	Kidney Tray	1
24	Bayonet Forceps Toothed Medium	1
25	Bayonet Forceps Nontoothed Medium	1
26	Bayonet Forceps Toothed Long	1
27	Bayonet Forceps Nontoothed Long	1
28	Towel Clip	12
29	Tunneler Adult	2
30	Tunneler Paediatric	1
31	LB RETRACTOR 3.5 Cm X 1cm	2
32	Lb Retractor Paediatric	2
33	Brain Cannula- 16 G	1
34	Brain Cannula -18 G	1

MICRO INSTRUMENTS SET

1	Perforated Tray 15"X 12"X 6.5"	1
2	Tear Drop Dissector STR 45°4mm	1
3	Yasargil Micro Suction 1.7mm	1
4	Yasargil Micro Suction 2.5mm	1
5	Yasargil Scissor 9"Str	1
6	Frazier Suction 4mm	1
7	Round Dissector Medium	1
8	Bayonnted Penfield Dissector No . 2	1
9	Micro Instrument Tray	1



	LAMINECTOMY SET	
1	Perforated Tray 15"X 12"X 6.5"	1
2	Sponge Holder	1
3	Towel Clip 4"	4
4	Towel Clip 6"	4
5	B.P Handle 3,4,7 No	3
6	Disecting Forcep Tooth 6"	3
7	Disecting Forcep Non Tooth 7"	2
8	Needle Holder 9"	1
9	Needle Holder 6"	2
10	Needle Holder 7"	1
11	Needle Holder 8"	1
12	Penfield Disector 1,2,3,4 No	4
13	Nerve Root Retractor (Eye lid retractor angled)	3
14	Hammer	1
15	Mosquito Artery Forcep (Curved) 5"	2
16	Mosquito Artery Forcep (Straight) 5"	2
17	Artery Forcep (Curved) 6"	2
18	Artery Forcep (Straight) 6"	5
19	Cockers 8" cvd	2
20	Allis Forcep 6"	1
21	Allis Forcep 8"	1
22	Kerrison punch Upcut 1mm 45 degree	1
23	Kerrison punch Upcut 2 mm 45 degree	1
24	Osteotom (Curved)	1
25	Osteotom (Straight)	2
26	Kerrison Punch 2mm 90 degree upcut	1
27	Kerrison Punch 4 mm 90 degree upcut	1
28	Kerrison Punch 3 mm 45 degree upcut	1
29	Kerrison Punch 2mm 45 degree upcut	1



30	Kerrison Punch 4 mm 45 degree upcut	1
31	Kerrison Punch 3 mm 90 degree upcut	1
32	Bone Cutter 9" (90 Degree angled)	1
33	Laminectomy Retractor Articulating	2
34	Nibbler (Curved) 9" Cvd 7 MM	1
35	Nibbler (Straight) 9"	1
36	Bionet Forcep	1
37	Ring Curret	3
38	Cloward retractor with 10 blades	1
39	Hemi laminectomy Retractor	1
40	Kidney tray 10"	5

ANTERIOR CERVICAL TRAY

S.NO	DESCRIPTION	QTY
1	Perforated Tray 15"X 12"X 6.5"	1
2	K. Dish 500ml	2
3	S. S. Bowl 500 Ml	2
4	S. S. Bowl 100ml	2
5	Sponge Holder 10"	2
6	Towel Clips 5"	4
7	Bp Handle 3	1
8	Bp Handle 4	1
9	Bp Handle 7	1
10	Adson Toothed	1
11	Adson Non-Toothed	1
12	Dissecting Forceps Toothed 6"	1
13	Dissecting Forceps Non-Tooth 6'	1
14	Bayonet Forceps Toothed 8"	1
15	Bayonet Forceps Non-Toothed 8'	1
16	Dissecting Scissors Cvd 6" Mitz	1



17	Dissecting Scissors Cvd 7" Mitz	1
18	Dissecting Scissors Str 7" Mayo	1
19	Suture Cutting Scissrs Str 7" Mayo	1
20	Pen Field Dissector No: 1 - 5	4
21	Periosteum Elevator Cvd 1/2" Cvd 6"	1
22	Periosteum Elevator Cvd 1/2" Str 6"	1
23	L. B. Retractor 1/2" X 2cms	2
24	L. B. Retractor 1" X 2cms	2
25	S. R. Retractor 3x4 Prongs 6"	1
26	Vertibral Retractor	1
27	Mosquito Artery Cvd	4
28	Mosquito Artery Str	2
29	Artery Cvd 6"	4
30	Artery Str 6"	2
31	Right Angle 6"	1
32	Allies 6"	4
33	Needle Holder 6" Fine Tip	2
34	Needle Holder 6" Heavy	1
35	Needle Holder 7" Fine Tip	1
36	Kerrison Punch 1, 2, Mm	2
37	Disc Rongeur 1 - 2mm Plain Tip	2
38	Disc Rongeur 1 - 2mm Casper Tip	2
39	Curette Spinal	4
40	Bone Nibbler Fine Str	1
41	Bone Nibbler Fine Cvd	1
42	Bone Nibbler Heavy Str 8"	1
43	Cobb's Elevator Long	1
44	Bone Punch Small/ Medium	1
45	Mallet Light Weight 7"	1
46	Cidex Tray	1



6.C.ARM 2d & 3d Mobile Imaging System

Technical Specification

Should be a Versatile compact with facility to allow unobstructed positioning and enhanced ease

of operation in operation theatre. The system with flat panel and 3D to have following with better mechanics:

1.X-RAY GENERATOR

The Generator should be Mono block with high frequency or more with microprocessor controlled.

2. GENERATOR OUTPUT

MAXIMUM OUTPUT : 25 kW or above

3. OPERATING VALUES

Pulsed Fluoroscopy:

kV Range : 40 to 120 kV

mA range : 1.5 to 250mA

pulse rate : 1,2,4,8,1 2.5,25 pulses per second

Digital Radiography

kV Range : 40 to 120 kV

mAs range : upto 250mA

4. Filtering:

It should have Total filtering : ≥ 4.3 mm Al, including 0.1mm cu

5. Collimator system:

Dedicated pre collimator for FPD

Collimator Rotation: $\pm 90^\circ$

Iris Collimator: 50 to 280mm diameter

Slot Collimator: 50 to 280mm diameter

Virtual Collimation without radiation

6. Flat Panel Detector system

Field Size : 29.5 cm x 29.5 cm or more

Detector Matrix should be of 1 K X 1 k pixels or more.

Anti scatter grid: 70 lines / cm / grid ratio 8:1

Laser localizer integrated in the detector housing



Flat panel should be integrated with the distant control as a safety measure for the patient and collision prevention. When approaching an object, the motorized movement should slow down and movement should stop immediately before entering a defined safety zone. Should Detects patient as well as instruments

7. Monitors:

Monitors should be of High resolution & High brightness twin flat screen monitors

Screen size : 18 inch or better

Resolution : 1280X1024 pixels or better

Viewing Angle (Horizontal & Vertical) : 170°

Tilt Range : ±10°

Contrast Ratio : 600:1

The following real-time and post processing digital processing functions should be possible

Edge enhancement filter.

Zoom 3 levels (post processing)

Windowing and step windowing

Digital image rotation and reversal should be possible without radiation

Recursive filter at 4 levels

Grayscale inversion

Digital Shutters (Image cropping)

Digital measurement functions (post processing)

System should be capable of doing 3D imaging and therefore should be available with 3D IMAGE ACQUISITION SOFTWARE FOR 3D VISUALIZATION

3D WORKSTATION

With Resolution 320 voxel or more

Slice planes, axial, sagittal , coronal

Anatomical programs to determine ideal noise reduction, pulse width, etc. specific to anatomy should be possible

Digital memory with storage capacity of atleast 100,000 images or more and Digital Image processing upto 32 bit should be possible

Should include the following

Wireless Multifunctional Dual Plus foot switch with programmable configuration.

Measurement functions

DVD-RW drive



8. User Interface:

TFT touch screens should be available on C-arm stand and should be synchronized with TFT monitors on the monitor cart

Intuitive icons for easy use

Resolution : 640X 480 pixels

Multi lingual user inter face

9 . INTERVENTIONAL PACKAGE

Cine Mode: Image acquisition up to 25 f/s or more.

Real time DSA software should be provided for DSA real time image subtraction with remasking, Pixel Shift, landmarking, road mapping.

- Multifunctional programmable footswitch (preferably wireless) with functionality for radiation release, switching operating modes as well as storage of the last image.

Image display/ processing: the following functions should be provided.

- Digital zoom / magnification.
- Digital image rotation. Left/right and top/bottom image reversal
- Automatic image parameter selection with provision to change over to manual selection.
- Contrast/Brightness control, Positive/negative image inversion, Edge enhancement functions should be provided.
- Cine loop and last scene / image hold and also preferably saving of fluoro loop.
- Image annotation facility, measuring of distances and angles.

Dimensions & Mechanics:

C-arm should have the following motorized movements with joystic control

Vertical travel : > 40 cm or more

Horizontal travel : > 25 cm or more

Orbital Rotation should be available

Angulation : $\pm 215^\circ$

Focus image receptor distance : 105cm

C-Arm vertical free space: 80cm or more

C-Arm depth : 65 cm or more

Should be CE & FDA approved

Should have installed atleast 2 systems of same offered model

Should have Type approval for AERB



7. Neuro Head Frame

Technical Specification

Sl.No.	Description	Qty In Nos.
1	Head frame should be able to fix any make OT Table in the operation theatre	
2	It should have good range of movement for extension and flexion with ball and socket joint.	
3	It should have Light weight semicircular frame with steel inserts to hose 4 nos. of head pins which should freely move on its axis	1
4	Main head frame should hose self retaining retractor arms, Scalp hook retractors, Patty holder, Instrument receptacles and Arm rest	
5	Self retaining retractor arms – minimum length should not be less than 400mm and Autoclavable	2
6	Malleable Spatula with sizes – 2mm/4mm/6mm/8mm/10mm with minimum length of 200mm (Autoclavable)	1 (each size)
7	Scalp hook retractor with adjustable length (Autoclavable)	6
8	Patty holder (Autoclavable)	1
9	Arm rest support with height and angle adjustable (Autoclavable)	2
10	Instrument receptacle (Autoclavable)	2
11	Head pins - Sizes: Adult /Medium/pediatric with minimum of 125 mm length.	4 Nos. (each size)
12	Horse shoe attachment – width adjustable with Gel pad and traction attachment (Adult and Paediatric)	1
13	universal keys (Autoclavable)	2
14	Should be provided with Sterilisation box with proper silicon paddings	2



8.Zero Pressure Suction Machine

TECHNICAL SPECIFICATION

- smallest digital system with integrated suction, no compromise on patient mobility and safety with full electronic monitoring which helps in reduction of treatment time
- system; diaphragm pump 2 canister sizes 2 tubing's
- container size 0.8l/0.3l
- tubing (material, length, diameter), pvc, single, double 1 1.5m
- noise level: 42.5 dba/1l flow/2.5kpa (internal meas)
- max flow: 5l/m
- duration of battery: min 4hrs max 10 hrs
- power: 20w
- classification: class IIA
- weight: 1kg
- size 95 x 170 x 235 mm
- monitoring functions digital
- internal memory of pump : upto 4 weeks
- data transfer to pc : data cable
- integrated alarm system.

Note: The Sealed tender should be addressed to “The Registrar, Adichunchanagiri University, B.G. Nagara – 571448, Nagamangala Taluk, Mandya District, Karnataka” on or before 31/10/2019.

Dr. C.K. Subbaraya
Registrar

Adichunchanagiri University
B.G. Nagara-571448