Sanjay GANDHI POST GRADUATE INSTITUTE OF MEDICAL SCIENCES RAEBARELI ROAD, LUCKNOW-226014.
PHONES: 0522-2494038
EMAIL: jdmm@sgpgi.ac.in, jdmmsgpgims@gmail.com

TENDER NOTICE

On-line offers are invited from Manufacturer / Authorized Importers/ Authorized distributors/ Dealers (Declared by Principal Firm only) **for the supply and installation of medical equipments & other capital items for various departments of the Institute and Apex Trauma Centre such as Sterilizers, Bioaesthesiometer, Anesthesia Workstations, Portable Echo Machines, Surgical Instruments, Ultrasounds, Endoscopes, Ga 68 Synthesizer, C-Arm, Neonatal & Pediatric Ventilators, Anterior skull base surgery Endoscopy Set with ICG, Video Nasopharyngo Laryngoscope with Stroboscope Narrow Band Imaging, ENT Workstation, Fluoroscopy Machine, Advanced 3D-4K Laparoscopic Endo Vision Camera System, 4K Ultra High Definition (with ICG) Laparoscopic Surgery Set, Craniotomy and Spine Instruments, Intra Op-Multidimensional Imaging System with Image guidance, C-Arm, Cavitron Ultrasonic Surgical Aspirator, Cool Radio Frequence Ablation, Difficult Airway Management Training and Demonstration System, Arthroscopy Simulator, etc.,** as per tender conditions, as stipulated in the tender documents. Tender documents duly filled will be submitted in two bid system i.e. technical bid and price bid.

The tenders will be published on GeM Portal. The offer will be accepted On-Line only on GeM portal with terms and conditions as mentioned in tender documents.

For detailed information like Name of Equipments, Date of Submission and opening of tender etc., you may please visit the GeM Portal. The name of equipment and specifications will also be available on our website **www.sgpgims.org.in** for reference only. The offer will be accepted On-Line only on GeM Portal with terms and conditions as mentioned in tender documents. **The prospective OEMs / authorized suppliers are requested to go through the list of equipments and specifications from the Institute's website and make sure that their relevant equipments / products are available on GeM Portal under relevant category as all the procurements are to be made from GeM Portal as per G.O. No.57/18-2-2024-97(ल0उ0)/2016 dated 26.11.2024 issued by the Chief Secretary, Govt. of U.P.**

The Director reserves the right to accept or reject any tenders in part or full without assigning any reason thereof. In case any legal dispute; the legal jurisdiction shall be court of law at Lucknow (UP), India.

Advt. No.:-I/ / JDMM/2025-26 **Director**

LIST OF MEDICAL EQUIPMENT AND SUPPORTIVE ITEMS FOR APEX TRAUMA CENTRE FOR F.Y. 2025-26

Sl. No.	Name of Department & Location		Name of Item	Quantity	Unit Cost (Rs. in lakhs)	Total cost (Rs. in Lakhs	Total Cost (Rs. in lakhs)
1	**Neurosurgery**	1	ECG Machine	1	1.70	**1.70**	
		2	Defibrillator	1	5.00	**5.00**	
		3	Video Laryngoscope	1	2.50	**2.50**	
		4	Craniotomy and spine instruments	1	150.00	**150.00**	
		5	ICP Monitor	2	8.00	**16.00**	
		6	Surgical Chair	2	3.50	**7.00**	
		7	Intra -OP- Multidimensional imaging System with image guidance	1	1100.00	**1100.00**	
		8	Electrical Drill System	1	12.00	**12.00**	
		9	OT Lights	3	50.00	**150.00**	**1444.20**
2	**Orthopaedic**	10	C Arm	1	120.00	**120.00**	
		11	DVT Pumps	3	2.00	**6.00**	
		12	Reamer Irrigator Aspirator System	1	30.00	**30.00**	
		13	Multipara Monitor	5	5.00	**25.00**	
		14	Blood Warmer	1	5.00	**5.00**	**186.00**
3	**Oral & Maxillofacial Surgery, ATC**	15	TMJ and Ramus condylar unit Arthroscopy instruments set	1	60.00	**60.00**	
		16	Instrument Set for Endoscopic Ramus Condylar Fixation	1	20.00	**20.00**	
		17	Accessories for an existing Microdrill and Saw System	1	5.00	**5.00**	**85.00**
4	**Lab Medicine ATC**	18	Hand mannequin	1	1.50	**1.50**	
		19	Phlebotomy Chair	1	1.50	**1.50**	
		20	Vein finder	1	5.00	**5.00**	**8.00**
5	**Forensic Medicine ATC**	21	Mobile LED OTLight	2	8.00	**16.00**	
		22	Dead Body Weighing Machine	1	1.75	**1.75**	**17.75**
6	**Trauma Surgery ATC**	23	Cavitron Ultrasonic Surgical aspirator	1	80.00	**80.00**	
		24	Mobile LED OT Light	2	8.00	**16.00**	
		25	Patient Recovery Trolley Bed	10	4.00	**40.00**	**136.00**
7	**Multi frequency ward (4th floor)**	26	Monitor (Cardiac)	5	3.00	**15.00**	**15.00**
8	**Microbiology Apex Trauma Centre**	27	Automated bacterial culture system (forty rack)	1	16.00	**16.00**	
		28	Binocular Microscope	2	5.00	**10.00**	
		29	Automated media pourer	1	20.00	**20.00**	**46.00**
9	**Physical Medicine & Rehabilitation**	30	Cool radio Frequency Ablation	1	100.00	**100.00**	
		31	Hockey j stick Probe	1	5.00	**5.00**	
		32	UST	1	5.00	**5.00**	**110.00**

10	**Anesthesia (ATC) OT**	33	Video Laryngoscope	1	32.00	**32.00**	
		34	Sequential Electrical Nerve Stimulation Device	2	3.00	**6.00**	
		35	High Frequency Chestwall Oscillation Device	1	8.00	**8.00**	**46.00**
11	**Advanced Skill Lab for ATC**	36	Difficult airway Management training and demostration system	1	130.00	**130.00**	
		37	Arthroscopy Simulator	1	350.00	**350.00**	
		38	Floor Microcope and its accessories	6	25.00	**150.00**	
		39	Microsurgical instruments set	6	2.00	**12.00**	
		40	Noiseless suction machine	6	1.00	**6.00**	
		41	Compatable recording system	1	7.00	**7.00**	
		42	3d printer FDM multicolur and monocolour	1 each	7.00	**7.00**	
		43	Image segmenter processing software	1	17.00	**17.00**	
		44	High end work station with touch screen and virtual reality glass	1	5.00	**5.00**	
		45	High speed drill and accessories	6	10.00	**60.00**	
		46	Display screen 40"	4	1.25	**5.00**	
		47	Head holder	6	0.50	**3.00**	
		48	AI software development unit	1	8.00	**8.00**	
		49	Hand mannequin	1	1.55	**1.55**	**761.55**
12	**Molecular Research Lab**	50	Biosafety Cabinet (Class II, Type A2)	1	6.00	**6.00**	
		51	Microcentrifuge	1	2.00	**2.00**	
		52	Gel Electrophoresis System with Power Supply	1	2.00	**2.00**	
		53	Vortex Mixer	1	0.50	**0.50**	
		54	Water Bath / Dry Heating Block	1	0.50	**0.50**	
		55	Micropipette Set (Set of 3)	1	2.00	**2.00**	
		56	Spectophotometer(microvolume or UV Vis)	1	12.00	**12.00**	
		57	Refrigerated centrifuge	1	6.50	**6.50**	
		58	PCR Machine (Thermal Cycler)	1	5.00	**5.00**	**36.50**
13	**Other Capital Items**	59	Misc. Items such as Office/ Hospital/ Lab Furniture, Computer, Printer, IT equipments, Refrigerators, ACs,UPS, Office Automation Equipment, Projectors, and any other Emergent Equipments, etc. and adjustment of shortfall amount in equipments.			**108.00**	**108.00**
					Total amount in Rs.	**3000.00**	**3000.00**

Sl.No-42

FDM(Fused Deposition Modelling) Printer (1)

Fused Deposition Modelling is the process which involves the use of thermoplastic material that reaches melting pointandisthenforcedout,viaextrusionnozzle,tocreatea3Dobjectlayerbylayer. The general specification of machine is as below-

PRINTING	MECHANICALANDDIMENSION	ELECTRICAL	SOFTWARE
ExtruderQuantity 1	**PrinterDimension** 550*490*570mm(21.7*19.3*22.4IN)	**PowerInput** AC100-240V, 47-63Hz	**Software** Flash Print
NozzleDiameter 0.4mm	**Screen** 5–7-inchtouchscreen with all necessary function	**Power** 500W	**FileInputFormat** 3MF/STL/OBJ/ FPP/ BMP /PNG / JPG / JPEG files
MaximumExtruder Temperature 240°C(464°F)	**NetWeight** 30 - 35 kg	**PowerOutput** 24V,20.8A	**FileOutput Format** GX/G
Print Speed 30-200 mm/s	**GrossWeight** 35-40kg	**Connectivity** USBcable,USB stick, Wi-Fi, Ethernet, Flash Cloud, Polar Cloud	
Maximumplatform Temperature 120°C(248°F)	**Spool** External		
FilamentCompatibility PLA,ABS,PETG etc.	**RunningNoise** 55dB		
FilamentDiameter **1.75mm(0.069IN)**	**Working Environment** 15-30°C (59-86°F)		
Print Volume 275*250*300mm (11*9.8*11.8IN)			
LayerThickness **0.1mm-0.4mm**			
Print Precision **±0.2mm**			

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Trauma Centre
226014

Multicolor FDM 3D printer (1)

Itisa multicolorFDMprinterwhichcanprintup to16colors interchangeably and max of 4 colors at a time.
Itshould printbyfusingthefilamentlayerbylayerwhilemeltingthesameviaaheated nozzle on the controlled temperature platform bed.

Build Volume	256x256x256mm3
Print Precision	±0.2mm
Layer Thickness	0.1mm-0.5mm
Maxhotendtemp	300degCelsius
Nozzlediameter	0.2mm,0.4mm, 0.6mm, 0.8mm
Filamentdiameter	1.75mm
Nozzletemperature	300degCelsius
Maxbuildtemperature	100degCelsius
Maxaccelerationoftolhead	20mpersec2
Chambermonitoringcamera	1280x720/0.5fpstime lapse supported
Maxtoolhead speed	500mmper sec
Running Noise	<55dB
Connectivity	Bluetooth,wifi,USBcable
AvailableMaterials	PLA,PETG,TPU, PVA,PET,ABS, ASA,PA,PC etc.
Power supply	Standard electrical supply
Working Environment	15-30°C

REMARK:
All the essential accessories required to complete the system should be provide by the bidder. The bidder should certify the completeness and functionality of the system in all respect.

WARRANTY:
As per institute rules and regulations.

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Image segmenter Processing software

S NO.	SPECIFICATION	DETAILS
1	**Segmentation**	CreateandeditsegmentationsfromDICOMimagesusing manual(paint,draw etc),semi-automatic (thresholding, regiongrowing,interpolation etc)andautomatictools.
2	**ImageEditing**	Changeorientation,applyfilters,cropimages,organize images,imageregistration,Image alignment
3	**View**	All the views – axial, coronal and sagittal along with 3D model,Visualisationindefinedplane,3drender,patient coordinate system, Cross sectional views, adjust transparency
4	**3D Tools**	3dcontourmappingon2D,smoothen3d models
5	**Measure**	Distance,angle,dia,area,volume,distanceoversurface, Hounsfieldvalue/density,textannotation
7	**Import**	CT,CBCTandMRI,3DSTL,OBJ
8	**Export**	DICOMimages,NRRDformat,3Dvolumemesh,STL,OBJ
9	**Licensingand Maintenance**	Softwareshouldbevalidformin 5yearsfromthedateof installation. ItshouldhaveallthefreeupgradesfromOEMduringthe activelicense period.
	Remark-	All the essential accessories required to complete the system should be provide by the bidder. The bidder should certify the completeness and functionality of the system in all respect.
	Warranty:	As per institute rules and regulations

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

High End Workstation

Adesktopwiththebestpossibleconfigurationsintermsofcomputationalspeed, graphics,memory,andothercriticalparameters,shallbeprovidedforday-to-day segmentation and designing activities on the medical data.
Agenericconfigurationcanbereferredtoas below.

OperatingSystem	Windows10orabove/ Latest mac
Processor	InterCore i7 or higher
Memory	16GBRAMorhigher
HardDrive	Minimum 1TB
Graphics	NVIDIA(min.8GBGDDR6)orequivalent
Display	24"ormore
Ports	Headphone,USB,LAN,HDMI
Remark-	All the essential accessories required to complete the system should be provide by the bidder. The bidder should certify the completeness and functionality of the system in all respect.
Warranty:	As per institute rules andregulations

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Sl. No. 37

(18)

SPECIFICATIONS FOR ARTHROSCOPY SIMULATOR

Technical Specification

The system should have interdisciplinary interchangeable platform (e.g Arthroscopy. Gynaecology, Urology & Laparoscopy)-same platform can be used to train Arthroscopy, Gynaecology, urology & Laparoscopy by adding various surgical modules in future.

- Supply and Installation of Arthroscopy Simulator on Turnkey Basis with One week Training from Expert with Continuous Support for curriculum design and upgrade.
-

General requirements

1. Should be a virtual reality simulator specifically designed to train fundamental arthroscopy skills, arthroscopy of the knee and the shoulder joints:
- Should be designed to train basic arthroscopy skills
- Should be designed to train diagnostic skills
- Should be designed to train surgical interventions
- Should contain healthy anatomies as well as various pathologies
2. The training simulator should be based on a platform which is designed to:
- Support FAST, knee and shoulder arthroscopy modules
- Should be extendable to further applications such as ankle and Hip arthroscopy in future
- Should be extendable to further disciplines in gynecology, urology, Laparoscopy
- change from one modality to the next within less than 5 minutes
3. The Arthroscopy training simulator should be based on tactile feedback provided by an anatomical replica of the joint structure which provides tactile sensation in combination with electro-magnetic tracking of real surgical tools.
4. A highly realistic high fidelity virtual reality image stream is provided containing all relevant anatomical structures, pathologies, complications and simulation of intraarticular fluids.

System platform requirements

1. Should have an application specific system cart provided with a height adjustable touch
2. Screen computer monitor, lockable PC security cabinet and large storage drawer. The integrated
3. Touch screen should be :
   - Rotatable to allow for dominant, non dominant hand training.
   - At least 23' format
   - Have integrated speakers
4. Cart should allow for easy access to audio and video output ports.

Dr. Pulak Sharma

5. Cart should have lockable casters.
6. System should contain a high end PC with:
   - Minimum 3.5 GHz CPU
   - Minimum 1TB HD
   - High performance graphics board

Knee module requirements

1. Arthroscopy simulator should be based on a realistic anatomical replica of the knee containing all relevant joint structures (Femur, Tibia, Cruciate Ligaments, Patellar Tendon, Patella, Meniscus).
2. Knee model should provide realistic touch sensation of bones, ligaments and meniscus when the structures in the anatomical replica are touched with tools.
3. Knee model should provide the following degrees of freedom (tracked by a sensor system and represented in the simulation):
   - Knee flexion / extension
   - Varus / valgus movements
4. Knee model should be height adjustable.
5. Knee model should provide 4 portals for entry of Arthroscope or tools.
6. Knee module should optionally provide the user the possibility to define the position of the portals.
7. Change of portals should be possible without restarting the simulation.
8. Arthroscopy simulator should allow any tools to be inserted and used in any portal in any case.

Knee and Shoulder larthroscopy simulator software requirements

1. Should contain at least 9 knee arthroscopy, at least 10 shoulder arthroscopy and at least 6 hip arthroscopy basic skill training modules for various, standardized procedures.
2. Should contain didactic training for all the relevant procedures
3. Should contain at least 14 diagnostic knee arthroscopy, at least 6 diagnostic shoulder arthroscopy and at least 4 diagnostic hip arthroscopy cases featuring different patients with differing anatomy and pathologies.
4. Should contain at least 11 surgical knee arthroscopy, at least 3 surgical shoulder arthroscopy and at least 3 surgical hip arthroscopy cases for various patients and various different, standardized procedures.
5. Should contain diagnostic cases where pathologies are shown randomly
6. Should contain an interactive evaluation form that allows users to report the findings of the diagnostic tour.
7. Concepts of ACL reconstruction module should contain a comprehensive theoretical teaching module.
8. Concepts of ACL reconstruction module should contain a case specifically designed to learn the anatomical and kinematic concepts and the consequence of typical malpositionings.
9. Concepts of ACL reconstruction should contain at least 4 different patient cases with different ACL ruptures in case of knee ACL reconstruction.

Dr. Pulak Sharma
Professor

Shoulder module requirements

1. Arthroscopy simulator should be based on a realistic anatomical replica of the shoulder joint containing all relevant joint structures (Humerus, Scapula, Glenoid, Clavicle, Acromion, Labrum, Biceps Tendon).
2. Shoulder model should provide realistic touch sensation of bones and ligaments when the structures in the anatomical replica are touched with tools.
3. Shoulder model should provide the following degrees of freedom (tracked by a sensor system and represented in the Simulation):
   - Humerus axial rotation
   - Humerus translation

4. Shoulder model should provide at least 4 portals for entry of Arthroscope or tools.
5. Shoulder module should optionally provide the user the possibility to define the position of the portals.
6. Change of portals should be possible without restarting the simulation.
7. Arthroscopy simulator should allow the user to insert the scope in any of the portals available to perform the cases.
8. Arthroscopy simulator should allow the user to switch between glenohumeral space and subacromial space during a patient case without the need to restart the patient case.
9. Shoulder module should support beach chair as well as lateral decubitus position. Change between positions should require no tools and take less than 30 sec to do.

Ankle module (Optional in future) requirements

1. Arthroscopy simulator should be based on a realistic anatomical replica of the hip joint containing all relevant joint structures.
2. Ankle model should provide realistic touch sensation of bones and ligaments when the structures in the anatomical replica are touched with tools.
3. Ankle model should provide the following degrees of freedom (tracked by a sensor system and represented in the Simulation:

- dorsiflexion
- plantar flexion,
- the model enables joint distraction

4. The ankle joint should be features both anterior and posterior access, and the patient should be treated in prone and supine positions.
5. Hip module should optionally provide the user the possibility to define the position of the portals.
6. Change of portals should be possible without restarting the simulation.

Arthroscopy simulator should allow the user to insert the scope in any of the portals available to perform t

Tools requirements:

1. No configuration or calibration should be required by the user.
2. Original arthroscopy instruments should be used, maintaining feel and functionality.
3. Original instruments should include shaver, arthroscope, punch and hook.
4. Original instruments shall be freely used without external limitations or restrictions on range of movement or orientation.
5. Open / close state of the valves on the arthroscope should be tracked.
6. Arthroscope camera should support 0deg, 30deg and 70deg optics.

Dr. Pulak Sharma
Professor
Orthopaedic

7. The shaver shall provide tactile sensation and realistic vibration during operation.
8. The punch should be based on a real punch hand piece and open and close similar to an original punch / grasper.
9. Simulation should contain straight, left and right bent punch and grasper – switchable through touch screen controls.
10. Tools should be easily interchangeable without the need to restart the simulator.
11. No robotic haptic interface should be required.

5. General software requirements

5.1. The software platform should be capable of handling or upgrading to multiple diagnostic and surgical modules similar to the hardware platform (urology module).

5.2. Should visually mimic a real procedure as closely as possible including features such as liquid flow, acoustics, tactile feedback, blood loss, tissue interaction etc.

5.3. Acoustic feedback should include operating room background sounds and sound of tools during operation as appropriate.

5.4. Should contain predefined didactic courses for users with different experience levels.

5.5. Should contain the possibility to design own courses with own scoring based on all patient cases available in the simulator.

5.6. Should include fluid handling via the valves on the hysteroscope / resectoscope into the simulation: The fluid simulation should react to open / close state of the valves on the scope.

5.7. Should contain complications such as bad view and bleeding. Trainees can learn how to deal with such complications.

5.8. Should display outside view of the anatomical structure and the tools as appropriate:
- Outside view should be customizable by the user by selecting different view planes
- Outside view should optionally show the correct tool positions as a didactic aid

5.9. Should provide a step-by-step task list to guide the user through the procedures.

5.10. Should assess the patient'sasappropriatecomfort.

5.11. Should contain and store feedback reports after each procedure including movies.

5.12. Should generate printable feedback reports.

5.14. Should be able to handle various users and store videos of the performances for each user with easy access for the administrator. Administrator should have to ability to view and export all the user information for a single case.

Dr. Pulak Sharma
Associate Professor
Speciality of Orthopaedic
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Microbiology (ATC)

Sl. No. 27 (59)

1. Automated blood culture system

Specifications

1. Systemshouldhaveagitationforoptimizedrecoveryoftheorganism.
2. It should be fully automated. Upgradable walk-away continuous monitoring and random-access system.
3. DetectionprincipleshouldbebasedonsensitivefluorescentTechnologyorsimilar.
4. Systemshouldhaveaminimumof 40 samplepositionsandcanbeupgradedon-siteupto 160 samples as and when required.
5. Systemmustsupportlabqualitycontrolrequirementsforautomatedanalysisofblood volume monitoring.
6. Systemshouldhavethefacilitytogenerateautomatedreportsreadytobeanalyzedandsent to various departments.
7. It should have more than 30 algorithms to monitor growth patterns in the case of positive samples.
8. System should have enhanced visual indicators both inside and outside the instrument in the form of different colored LEDs to indicate exact station-available, ongoing, positive, and negative anonymous.
9. System should support special resin-based media for Antibiotic Neutralization for optimized recoveryfromvariouspatientswhoareundertreatmentantibioticneutralizationdevices must have a proven record of neutralization at Trough. Mid and peak level in the blood specimen proof source to be submitted.
10. Instrumentshouldhavethefacilityforentering thepatient'snameand sampleaccession numberusing a bar code reader from abarcoded format.
11. Systemshouldprovidetheoptionofloadinganyculturebottleanywherewithoutany softwareinterventioninordertogetthebottleloadedintheinstrumentroundtheclock.
12. SystemshouldhaveautoQualitycontrolandcalibrationfacilitytoavoidanymanualdaily maintenance.UserinterventionforroutineQC/calibrationshouldnotberequired.
13. Systemshouldsupportspecialmediaforprocessingpediatricsamplesandlow-volume sterile body fluid samples.
14. Systemshouldsupportspecialmediaforoptimalrecoveryofyeast,fungi,and mycobacterium from blood samples.

Dr. Sangram Singh Patel
Associate Professor
Dept. of Microbiology
Apex Trauma Centre
Lucknow-226014

54

15. Mediashouldnothaveanymaskingeffectforeasierinterpretationof Gramstainingof positiveisolate.
16. Shouldhavespecialsupplementforenhancedfrothlowvolumesterilebodyfluid.
17. Mediabottles shouldbefullycompatiblewithfamiliarandwidelyusedVacationerHolder without the needfor a special adapter to improve workflow and safety.
18. Systemshouldbecapableofbi-directionalinterfacingwithLIS/HIS(Laboratory/Hospital InformationSystem).

Dr. Sangram Singh Patel
Associate Professor
Dept. of Microbiology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Microbiology (ATC) Sl.No. 29

3. Automated Pourer Stacker

Technical specifications

1. Thesystemmusthave apouringspeedofupto750platesperhour.
2. Thesystemshouldhavea stackertoautomaticallydispenseemptyplasticpetridishes.
3. Thesystem shouldautomaticallyopenandclosestackedpetridishesforthefilling
4. Thetubeusedforfillingshouldbeautoclavableaftereverycycleoffilling.
5. Thesystem shouldhavetheoptiontocreateandstoreprograms andshould be programmed andcontrolled via an easy-to-use software.
6. Thesystemshouldbe-equipped withanin-builtUVlampformaintainingsterile conditions during thepouring of media in petri plates.
7. Theplateshouldnotbeopenformorethan5 seconds during fillingto avoid aero biocontamination.
8. Thesystemshouldhaveflexibilitytoprocesseither55mm,90 mmplates.
9. Dispensingranges are from 1 to 50 ml
10. Thesystemshouldhavepossibilitytopourinbi-plates.
11. Plates cooling system: standard (integrated)
12. Multilingual graphic screen: should be there
13. Thesystemshouldbeprovidedwiththepoureralongwiththesystem.

Dr. Sangram Singh Patel
Associate Professor
Dept. of Microbiology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

(ATC) Microbiology Sl. No. 28

53

2. Upright Microscope

Technical specifications

1. **Frame:** Ergonomic design microscope with modular frame. On-site upgradable to step-wise motorization (like motorized 6-positions or higher DIC nosepiece, motorized 7-positions or more universal condenser, motorized 6-positions or higher fluorescence turret, motorized stage, motorized focusing, etc) and DIC.
2. **Optical System**: Infinity corrected optical system.
3. **Observation Tube**: Should be trinocular wide field, FN 22, three way light path distribution (100:0, 20:80/50:50& 0:100) for simultaneous viewing and imaging of the specimens, inclined at 30 degree or less for improved observation efficiency, provided with paired widefield eyepieces.
4. **Eyepieces** of at least 10X magnification, with diopter adjustment facility with field of view of 22mm or higher.
5. **Transmitted illumination**: The microscope should have an ergonomic stand with at least 14-16 Watt or better LED transmitted light source, LED Light source should be equivalent to or better than 100 WattHalogen Microscope frame. Led light with 30 watt Microscope Frame will not be considered.
6. **Nose Piece**: Six or more position objective nosepiecewith DIC/ polarizer attachment slot
7. **Condenser**: Swing out Achromatic condenser (NA 0.9), for 1.25X–100X (swing-out: 1.25X–4X)
8. **Stage**: X and Y rectangular mechanical stage motion control on right hand side with capacity to hold two slide glasses at a time. The stage should be ceramic coated.
9. **Objectives:**
    - i. Plan Achromat 4X/5X (N.A. 0.10 or more),
    - ii. Plan Achromat10X (N.A. 0.25 or more),
    - iii. Plan Achromat20X (N.A. 0.40 or more),
    - iv. Plan Achromatwith40X (N.A. 0.65 or more),
    - v. Plan Achromat 100 X oil (N.A. 1.25 or more)
10. Microscope should be European CE certified, BIS and FDA approved which should be available on FDA website.
11. The supplier should provide reference (5 numbers) of the quoted model in articles published in peer reviewed journals.
12. The supplier should give purchase order along with Installation and Performance certificate for the quoted model in at least 5 Government/ National Institutes in the country.
13. If asked it is mandatorily to arrange demonstration of the quoted model within a week of the submission of the tender for technical evaluation.

Dr. Sangram Singh Patel
Associate Professor
Dept. of Microbiology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Sl. No: 50 (6)

1. Biosafety Cabinet (ClassII,TypeA2)

a. **Type:**ClassII,TypeA2biosafetycabinet

b. **Filtration:** Equipped with HEPA (High-Efficiency Particulate Air) filters that remove particles,includingbacteriaandviruses,with99.99%efficiency.Thesefiltersensurethat harmful airborne pathogens are effectively filtered out, creating a safe work environment.

c. **Airflow:**Maintainsaninwardairflowvelocityofapproximately100feetperminute.This ensures that air flows towards the operator and into the cabinet to prevent contaminantsfromescaping.

d. **Construction:**Theinteriorismadefromstainlesssteel,whichisnon-corrosiveandeasily sterilized, crucial for maintaining cleanliness and sterility in the cabinet.

e. **Lighting:**EquippedwithUVgermicidallampsandfluorescentlighting.TheUVlightis used for decontaminating the working area when the cabinet is not in use, and the fluorescent lighting provides adequate illumination for the workspace.

f. **Workspace Dimensions:** Typically 4 feet wide, providing ample room for handling biologicalspecimens,reagents,andotheritemswithinacontrolledsterileenvironment.

g. **SafetyFeatures:**Ensuresprotectionfortheoperator,theenvironment,andthe experiments themselves. By creating an aseptic environment, the biosafety cabinet is essentialforworkingwithpathogenicorganisms,cellcultures,andsensitivemolecular biology procedures such as tissue culture, PCR, and enzyme assays.

2. Microcentrifu

Orthopaedic Sl. No. 10 (81) (82)

SPECIFICATION FORHIGH END C-ARM WITH FLAT PANEL

A. SHOULD BE OF INTERNATIONAL STANDARD, US FDA & CE APPROVED

B. State of the art system with high frequency X-ray generator, Flat panel system and Suitable high resolutiontwinflat screen monitor.

C. **Generator**(Broad numerical ranges are mentioned below , acceptable level of variations will be allowed)

1. 40 KHz, High frequency and micro processor controlled withmaximum
2. High frequency X-ray Monoblock of 3or more
3. Fluoroscopy KV range-40KV to 110KV
4. Fluoro range -0.2mA to 6.0mA
5. Snap shot -40 to 110 kV, up to 20mA
6. Pulsed fluoroscopy -upto 20mA or more
7. Pulse rate: 1, 2, 4, 8, 12.5, 25 pulses / sec

D. X-ray tube (Broad numerical ranges are mentioned below , acceptable level of variations will be allowed)

1. Stationary anode X-ray tube with focal spot around 0.6
2. Tube housing should be powered by integrated with advanced heat management system and withheat capacity around 1million HU and cooling rate around 30 Khu / min .
3. Max. Anode heat content be 45 KHU or more with anode heat dissipation around 600W

E. Collimator

1. Iris collimator with +/- 90 deg rotation. It should be a virtual collimation without radiation.
2. System may have Intuitive TFT touch screen user interface on the C-arm

F. FLAT PANEL DETECTOR(Broad numerical ranges are mentioned below , acceptable level of variations will be allowed)

1. Flat panel detector size be 23x23cm or more
2. Detector Resolution be 1.5 k * 1.5 k or more
3. DQE must be 79% or more for better performance
4. LASER positioning device integrated
5. Pixel pitch : 135 µm or less
6. Detector type CMOS to be preferred .

G. Monitor:(Broad numerical ranges are mentioned below , acceptable level of variations will be allowed)

1. 27" split monitor or 19" dual monitor should be provided
2. Brightness ratio $\geq$ 1000 cd / m^2or more
3. Contrast ratio : 1000 cd / m^2

H. The following Digital Image Processing functions should be possible.

1. Image storage capacity should be 100,000 images
2. Digital image processing: up to 32 bit

Dr. Pulak Sharma
Associate Professor
Speciality of Orthopaedic

I. In Real time

1. Edge enhancement at 5 levels in real-time
2. Windowing and step windowing
3. Digital image rotation and reversal without radiation.
4. Stack filter (last image hold) : 5 levels

J. Post processing function

1. Edge enhancement at 5 levels
2. Windowing
3. Zooming at 3 levels in
4. Image rotation
5. Grayscale inversion.
6. Mosaic archiving with atleast 16- image mosaic display for Patient based data management should be possible

K. MECHANICAL SPECIFICATION(BROAD NUMERICAL RANGES ARE MENTIONED BELOW , ACCEPTABLE LEVEL OF VARIATIONS WILL BE ALLOWED)

1. All C-arm movements for every position should be fully counterbalanced
2. Orbital rotation be -120 deg / +45 deg
3. C-Arm vertical free space be 85 cm or more
4. C-arm depthbe72 or more
5. Horizontal movement - 200mm
6. Vertical movement 50 cm or more and should be motor driven
7. Panning motion $\pm$ 10°
8. Steering and Braking lever may have parallel movements of the mobile for movement in all direction.

L. Facility for printing of Intra operative images should be available , preferably thermal printers .

M.Interface and DICOM Software for Storage should be available

Others:

1. Quoted model must be US-FDA Approved and European CE Certified.
2. The C-arm unit should be AERB approved. AERB certificate should be provided and shouldbeapprovedbyCDSCO(MD-15)
3. At least 2 components from X-Ray tube, Generator, mechanical components should be from the same manufacturer.
4. The quoted model should already be installed in the India. Bidders must provide a list of institutions of repute in India (preferably government institutes) whee the quoted units have been installed.
5. The vendor should provide a letter of satisfaction from the reputed institutions where the quoted models have been installed.
6. Five years comprehensive unconditional onsite warranty should be provided for the entire unit including X- Ray tube, image intensifier, all quoted items, including accessories.
7. Also quote for CMC (all items as in above warranty clause) for 5 Years after warranty period.
8. Up time guarantee 95% should be provided.
9. Catalogue & product datasheet of all items including X-Ray tube, image intensifier should be attached.

Dr. Pulak Sharma
Associate Professor

Sl.No - 41

Compatible recording system

- It should capture and store 4K/HD video and still images from surgical microscope, endoscope and other compatible medicalimaging systems
- Images captured with it can be used for patient records, training or educational purposes.
- It should be compact, portable recorder is suitable for use in hospital operating rooms, medical imaging centres, surgical centres, clinics, doctor's offices and similar healthcare environments.
- It should offers a long time recording on its internal hard disk drive Recorded videos can be exported to an external USB hard drive, flash memory or CIFS server via hospital networks for storage, sharing and teaching purposes.
- It should comply medical safety standards and is optimised for medical applications. This equipment is intended for use by qualified medical professionals only.
- Compliance with Medical Safety Standards:
- The video footage shouldbe recorded simultaneously in 4K and 2K (Full HD) with facility of Down-conversion from the captured 4K video.
- Video files should be recorded simultaneously onto the internal hard disk drive and an external USB HDD, USB flash drive or network server. This will shortens the workflow, with no need to export or copy videos to an external device after recording on the internal HDD.
- The recorder's should have capacity of 4TB disk drive.
- There should be three image quality settings (Standard/High/Best)
- Recorded data can be uploaded over the hospital network from the operating room to a computer using CIFS (Common Internet File System) for convenient centralised storage and sharing.
- It should have 3/3.5" colour LCD screen allows current input image and status, playback images and recorder settings to be reviewed without the need for an external display
- It should be Designed for easy integration a medical cart, the space-saving recorder should be slim and light

Recording features-	
Recording Video Format	MPEG-4 AVC/H.264
Recording Audio Format	LPCM, AAC LC
Recording File Format	XAVC S, MP4
Recording media	Internal HDD (4TB) External USB Storage Network (CIFS) DVD-R BD-R/BD-R DL BD-RE/BD-RE DL
Input resolution	4096x2160, 3840x2160
Recording solution	3840x2160, 1920x1080
Recording Bit Rate (4k)	150Mbps (Best) 100Mbps (High) 60Mbps (Standard)

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Centre

Recording Bit Rate (HD)	24Mbps (Best) 18Mbps (High) 12Mbps (Standard)
3D recording	Line by Line Top and Bottom
Recording Standards-	
SD Video Standards	525i59.94 NTSC, 625i50 PAL
HD video standard	720p50, 720p59.94, 720p60 1080i50, 1080i59.94, 1080i60, 1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50,1080p59.94, 1080p60 1080PsF23.98, 1080PsF24, 1080PsF25,1080PsF29.97, 1080PsF30
4k video standard	4Kp23.98 DCI, 4Kp24 DCI, 4Kp25 DCI, 4Kp29.97 DCI, 4Kp30 DCI
Supported HDMI format	525i59.94 NTSC, 625i50 PAL, 720p50, 720p59.94,720p60, 1080i50,1080i59.94, 1080i60, 1080p23.98, 1080p24, 1080p25, 1080p29.97,1080p30, 1080p50, 1080p59.94, 1080p60, 2Kp23.98 DCI, 2Kp24, DCI, 2Kp25 DCI, 2Kp29.97 DCI, 2Kp30 DCI, 2160p23.98, 2160p24, 2160p25, 2160p29.97, 2160p30, 4Kp23.98 DCI, 4Kp24 DCI, 4Kp25, DCI, 4Kp29.97 DCI, 4Kp30 DCI
Connectors-	
Input Connectors	3G-SDI (BNC type) (4) AUDIO (Stereo mini jack) (1) MIC (Stereo mini jack)(1) AC Inlet (3-pin) (1)
Output connectors	3G-SDI (BNC type) (4) HDMI (Type A) (1) AUDIO (Stereo mini jack) (1)
Other interface	USB 3.0 (Type A) (2) USB 2.0 (Type A) (4) USB 2.0 (Type B) (1) Network (RJ-45, 1000 Base-T/100 Base) (1) REMOTE RS-232C (D-sub 9-pin) (1) REMOTE contact switch (stereo mini jack) (4)Equipotential
Media slot	Disc slots 2 x SD card slots 1 x USB-C 3.0 expansion port for external recording of SD, HD, 2K DCI, Ultra HD and 4K DCI
Other features-	
Media Format	Can format media to Ex FAT (Windows/Mac) or HFS+ (Mac) filesystems
Power requirement	100 V to 240 V AC, 50/60 Hz
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)

Dr. Pawan Kumar Verma
Associate Professor
of Neurosurgery
Centre
-226014

Operating humidity	20% to 80% (Maximum wet-bulb temperature: 30 °C (86 °F)) (no condensation)
Storage and transport temperature	-20°C to +60°C -4°F to +140°F
Supplied accessories	CD-ROM, Infrared remote control unit (RM- M010) (1)
Storage and transport pressure	700 hPa to 1060 hPa
Dimensions	330.0 x 150 x 400 mm (including longest protrusions) 12 1/8 × 4 5/8 × 13 in. (including longest protrusions)
Weight	6+-2 kg
Compliance with medical safety standards	Yes
Remark-	All the essential accessories required to complete the system should be provide by the bidder. The biddershould certify the completeness and functionality of the system in all respect.
Warranty:	As per institute rules and regulations

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

(PMR) (ATC) Sl. No. 30 (31)

2. Advanced Radiofrequency Machine for pain procedures

[Cooled Radio-frequency Ablation Machine]

Description of Specifications: Advanced Radiofrequency Machine for pain procedures

1. The Equipment should be useful for standard RF ablation & Cooled RF ablation for treating chronic pain of nerve origin
2. RF generator must support Bipolar RF for Biacuplasty procedure
3. The RF machine must have separate quad cool pump assembly to treat cooled RF related muscle / nerve origin chronic pain pathology.
4. RF must have water cooled probe.
5. **The equipment should have following features in a single unit**
   a) Standard RF
   b) Pulsed mode
   c) Cooled RF
   d) Bipolar Mode
6. The system should have customizable treatment profiles for quick access. Minimum 15 treatment profiles can be added and deleted as per user convenience.
7. The system should be able to record clinical logs for the past therapies. Minimum 120 procedure logs should be supported.
8. The system should support individual probe control before and during treatment. Start and Stop function for individual probe with respect to temperature and time.
9. The system should automatically extend procedure time if Set Temp does not reach allotted ramp time.
10. The system should view display Ramp Time, time at Set Temp, and total procedure time in graph form.
11. The system should have demo mode for Cooled, Standard, Bipolar, Trandiscal, Pulsed and Stimulation mode for users to review.
12. The system should be able to test pump unit, upgrade software and enable live output.
13. The system should display warning with numeric code and actionable error message.
14. **Screen Display**
    - The equipment should have LCD color touchscreen.
    - Should display graphical interface in Real-time, display impendence, temperature, time and voltage independently.
15. **RF energy**
    - For Standard RF
    - For Bipolar RF
    - For pulse RF

Standard Temperature & Time duration:

- Temperature display 80-degree C and time 90seconds
- Temperature display 40-degree C and time 15 minute
- Temperature display 42-degree C and time 90 seconds

Dr. Siddharth Rai
Associate Professor

SOA

- For Cooled RF
- Temperature display 60-degree C and time 2:30 minutes

16. **On insertion of RF Cable**, the equipment should recognize the
    - Standard RF probes
    - Bipolar probes for discogenic Pain
    - Cooled RF
    - Should have automatic mode to recognize various cables for minimal manual operation.

17. **Impedance measurement, Stimulation, RF output:**
    - The impedance measurement should be in the range of 1- 3000 ohms
    - Impedance can be measured in before and during lesion in "Lesion mode", before "stimulation mode" and during cooled RF in Auto temperature mode.
    - Stimulation voltage mode: 0.00-10 V, 0.01 V increment
    - Current mode: 0.00-10 mA, 0.01 mA increment.
    - Stimulation rate: 1-Shot, 2, 5, 10, 20, 50, 75, 100, 150, 180 and 200 Hz
    - Stimulation pulse duration: 0.1, 0.2, 0.5 and 1.0 MS
    - RF energy: 460 KHz
    - Maximum Power: 80W

18. **Software Shutdown Limits During RF Delivery or Stimulation (Safety features):**
    - Measured Impedance: < 25 Ω or > 3,000 Ω
    - Measured Temperature: < 15°C, > 100°C

19. **Certification/ Standards of Equipment's:**
    - The system should have CSDCO Registration in India for assuring trusted supply of consumables.
    - The equipment must be ISO, CE & USFDA approved.
    - Equipment must have supporting clinical papers and trials performed on the machine with outcome of the clinical trials.
    - Operational manual should be provided with the equipment.
    - Parent company should provide undertaking of suppling the probes and cannula for 10 years from the date of Installation of machine.
    - Parent company should not increase the prices of probes and cannula more than 10 % each year.
    - Parent company should give written agreement to supply the standby machine with 5 working days in case of any problem or issue with the machine installed in the hospital. Fail to do so, company will be liable for penalty and blacklisting from the state government.

20. **Demonstration before Purchase: at the cost of Bidder/ company**
    - The demonstration of Machine is must before opening of purchase bid.

21.

a) R. F. Machine (Advanced Cooled Upgradable Generator) 1no
b) Connecter cable for Trans-discal Biacuplasty procedure 1no
c) 4 Channel Standard RF 1no
d) 4 Channel Cooled RF

Dr. Siddharth Rai
Associate Professor
Speciality of Physical Medicine & Rehabilitation
Apex Trauma Centre

e) Peristaltic Quad Pump to perform multi Cooled RF. This needs to be operated in conjunction to the RF generator. 1no

1no

22. **The equipment is to be supplied with consumables:**

- RF split grounding Pad 10no
- Standard RF flexible probe 100mm length, Reusable 1no
- Standard RF flexible probe 145mm length, Reusable 1no
- Standard RF Cannula supporting 100mm length, 5 mm active tip 10no
- Standard RF Cannula supporting 100mm length, 10 mm active tip 10no
- Standard RF Cannula supporting 145 mm length,10 mm active tip 10no
- Knee Procedure Cooled RF kit - 75mm probe length, with 4mm active tip 1no
- Lumber-Facet/SI procedure Cooled RF kit - 150 mm probe length, with 4mm active tip 1no
- Biaculoplasty kit- 150mm probe length, with 6mm active tip 1no
- Hip Joint procedure Cooled RF kit - 100 mm probe length, with 4mm active tip 1no

23. **Training and support:**

- Parent Company should provide technical training support to the user department.
- The Parent company shall provide training in India at cost of parent company/ supplier firm on regular interval to at least two deputed staff members of the department.
- The training is to be arranged at reputed government training center or at the Centre where machine is being used for pain relief procedures.
- The training accommodation & to & from travel cost expenditure is to be at the supplier / parent company end.
- During initial period & after training, the company should provide authorized person to assist the staff of dept. in using the machine for the RF procedures/ cases as & when required.
- Service engineer available with each & every authorize distributor end.

Dr. Siddharth Rai
Associate Professor
Speciality of Physical Medicine & Rehabilitation
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Neurosurgery. Sl. No. 04

(41)

Craniotomy and Spine Instruments

~~Micro-neurosurgical instruments for Cranium and Spine~~

Cranial surgery instrument set

Sl. no	Product	Quantity
	Sponge Forceps, straight, 245 mm (9 5/8"), oval, serrated, fenestrated, box lock, with ratchet, non-sterile, reusable	5
	Towel Clamp, curved, 115 mm (4 1/2"), non-perforating, blunt	20
	Surgical Scissors, straight, standard, sharp/blunt, 145 mm (5 3/4")	5
	Dissecting Scissors, curved, delicate pattern, blunt/blunt, 175 mm (6 7/8")	5
	Tissue Forceps, straight, medium, 1 x 2 teeth, 145 mm (5 3/4"), jaw width: 1.50 mm	5
	Micro Tissue Forceps, straight, delicate, 1 x 2 teeth, 175mm (6 7/8"), jaw width: 1.40 mm	5
	Dressing Forceps (Tweezers), straight, bayonet-shaped, serrated, 200 mm (7 7/8"), work. length: 85mm, jaw width: 2.20 mm	5
	Hemostatic Forceps, curved, 125 mm (5"), delicate, serrated	5
	KOCHER Hemostatic Forceps, straight, 140 mm (5 1/2"), 1 x 2 teeth	5
	HALSTED Hemostatic Forceps, curved, 185 mm (7 1/4"), delicate, serrated	5
	Needle Holder, straight, 180mm (7"), jaw: width 0.4 mm pitch of serration	5
	Needle Holder, straight, 150 mm (6"), jaw: width 0.4 mm pitch of serration	5
	Caspar X-long cervical retractor with blades	2
	FREER Elevator (Dissector), curved, 185 mm (71/4"), double ended, sharp/blunt, jaw width: 4 mm/4 mm	2
	FERGUSSON Suction Cannula, 215 mm (8 1/2"), curved, 45 °, 12FR, 4 mm, rigid, cylindrical, work. length: 130 mm	4
	CASPAR Bone Curette, #000, straight, 220 mm (8 3/4"), sharp, rigid, jaw width: 3.60 mm, peek handle	2

Dr. Ashutosh Kumar M.S., M.Ch. Assistant Professor Department of Neurosurgery S.G.P.G.I.M.S., Lucknow

Dr. Kamlesh Singh Bhaisora Associate Professor Department of Neurosurgery Centre

Ashutosh Kumar M.S., M.Ch.

	KERRISON Bone Punch, fully-detachable, straight, 130°,upwards cutting, 180 mm (7"), width: 1 mm, open. width: 8 mm, footplate: thin, black	2
	KERRISON Bone Punch, fully-detachable, straight, 130°, upwards cutting, 180 mm (7"), width: 2 mm, open. width: 8 mm, footplate: thin, black	2
	KERRISON Bone Punch, fully-detachable, straight, 130°, upwards cutting, 180 mm (7"), width: 3 mm, open. width: 8 mm, footplate: thin, black	4
	KERRISON Bone Punch, fully-detachable, straight, 130°, upwards cutting, 180 mm (7"), width: 5 mm, open. width: 8 mm, footplate: thin, black	2
	KERRISON Bone Punch, fully-detachable, straight, 130°, downwards cutting, 180 mm (7"), width: 2 mm, open. width: 8 mm, footplate: thin, black	2
	KERRISON Bone Punch, fully-detachable, straight, 130°, downwards cutting, 180 mm (7"), width: 3 mm, open. width: 8 mm, footplate: thin, black	2
	KERRISON Bone Punch, fully-detachable, straight, 130°, downwards cutting, 180 mm (7"), width: 5 mm, open. width: 8 mm, footplate: thin, black	2
	Rongeur, detachable, straight, 180 mm (7"), smooth, blade length: 10 mm, jaw width: 1.50 mm	2
	Rongeur, detachable, straight, 180 mm (7"), smooth, blade length: 10 mm, jaw width: 3 mm	2
	Round Bowl, height: 41 mm, diameter 83 mm, 160 ml	6
	Kidney Tray, 250 mm, 9 3/4", width: 158 mm, height: 42 mm, 500ml	6
	Micro Scissors, straight, sharp/sharp, 120 mm (4 3/4"), round handle, blue	2
	Micro Scissors, straight, sharp/ blunt, 120 mm (4 3/4"), round handle, blue	2
	KOCHER-LANGENBECK Retractor, 215 mm (8 1/2"), jaw depth: 35 mm, jaw width: 8 mm	4
	Bone Rongeur, straight, 360 mm (14 1/4"), blade length:17 mm, jaw width: 7 mm	2
	Micro Needle Holder, straight, 210 mm (8 1/4"), jaw: tungsten carbide coated, round handle, with ratchet	2
	Micro Dissector, slightly curved, 230 mm (9"), round handle, tip: blunt, jaw width: 1.70 mm, work. length: 115 mm	2

Kamlesh Bhaisora
Associate Professor
Neurosugery
Centre
-226014

Ashutosh Kumar
Professor
Neurosurgery

	YASARGIL MICROFORM Micro Scissors, straight, delicate, bayonet-shaped, sharp/sharp, 225 mm (8 7/8"), flat handle	2
	YASARGIL MICROFORM Micro Scissors, curved upwards, bayonet-shaped, sharp/sharp, 225 mm (8 7/8"), flat handle	2
	YASARGIL MICROFORM Micro Dressing Forceps, straight, bayonet-shaped, smooth, 220 mm (8 3/4"), work. length: 95 mm, jaw width: 0.60 mm	2
	Dressing Forceps (Tweezers), straight, bayonet-shaped, serrated, 200 mm (7 7/8"), work. length: 85mm, jaw width: 2.20 mm	2
	GIGLI Hook handle for saw	4
	OLIVECRONA Wire Saw, 400 mm (15 3/4"), diameter 1.20 mm	4
	METZENBAUM (BABY) DUROTIP® Dissecting Scissors, curved, delicate pattern, blunt/blunt, 145 mm (5 3/4")	6
	Tissue Forceps, straight, medium, 1 x 2 teeth, 145 mm (5 3/4"), jaw width: 1.50 mm	4
	Dissecting Scissors, curved, heavy pattern, chamfered blades, blunt/ blunt, 170 mm (6 3/4")	4
	VOLKMANN Retractor (Rake), 220 mm (8 3/4"), 4 prongs, jaw depth: 8.50 mm, jaw width: 19 mm, semi-sharp	4
	Galea Hook, large, 2 prongs, sharp	4
	HUDSON Brace for drill	2
	HUDSON Extension piece for drill	2
	HUDSON, 16mm perforator	2
	HUDSON Spherical burr, 16 mm diameter	2
	Twist drill, 2 mm diameter	2
	Scalpel handle hdl no.3	2
	Scalpel handle offset 210mm no.3	2
	Micro scoop str sharp230mm	2

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Trauma Centre
Lucknow-226014

Dr. Ashutosh Kumar
M.Ch.
Assistant Professor
Dept. of Neurosurgery
S.G., Lucknow

	Micro scoop ang sharp 230mm	2
	Vessel dilator d:0.5mm 125mm	2
	Vessel dilator d:1.0mm 125mm	2
	DIADUST MICRO NEEDLE HOLDER RD HDL 120mm	2
	Diadust Mic Ndl Hdl Rd Hdl w/o lk 160mm	2
	Diss.fcpsdia.ctd plateau 180mm	2
	Diadust micro ring forceps 1mm str.185m	2
	Sensation microfcp .5mm bay str 70/190m)	2
	Sensation microfcp .9mm bay str 70/190m	2
	Sensation microfcp .5mm bay str 90/210mm	2
	Sensation microfcp .9mm bay str 90/210mm	2
	Mic.scissors rd hdl 25°s/b 165mm	2
	Micro scissors s/b 25° angled 165mm	2
	De bakey cv duct scissor 220mm	2
	Jacobson vessel knifef/fd361r 95mm	2
	Handle chuck f/fd362r 105mm	2
	Micro scissors rd hdl 25°s/b 165mm	2
	Micro scissors s/b 25° angled 165mm	2

All the cranial set instruments should be US/FDA approved and made by the same manufacturer.

Dr. Kamlesh Singh Bhadoria
Associate Professor
Dept. of Neurosurgery
Trauma Centre
Lucknow-226014

Dr. Ashutosh Kumar
M.Ch., M.Ch.
Assistant Professor
Neurosurgery
Lucknow

Spine Surgery Instruments Set

Basic Instruments Set

- It Should Have A Telescope Of Diameter 4Mm 0 Degree With Working Length 170- 180Mm Along With A Sterilization Box With Silicon Connection For Locking Of Sheath.
- It Should Have A Telescope Of Dia 4Mm 30 Degree With Working Length 170- 180Mm Along With A Sterilization Box With Silicon Connection For Locking Of Sheath.
- It Should Have Jet Flow Scope Sheath Along With Obturator Of Dia 5-6 Mm For 0 Degree Telescope With Working Length 120-130 Mm With Push Button For Locking Mechanism.
- It Should Have Jet Flow Scope Sheath Along With Obturator Of Dia 5-6 Mm For 30 Degree Telescope With Working Length 120-130 Mm With Push Button For Locking Mechanism.
- It Should Have A Dilator Of Dia 4Mm, Length 220-230 Mm.
- It Should Have A Dilator Of Dia 6Mm, Length 200-210 Mm.
- It Should Have A Dilator Of Dia 6Mm, Length 160-170 Mm.
- It Should Have A Dilator Of Dia 8Mm Length 180-190 Mm.
- It Should Have A Dilator Of Dia 8Mm Length 140-150 Mm.
- It Should Have A Dilator Of Dia 10Mm, Length 160-170 Mm.
- It Should Have A Semi-Tube Dilator Of Dia 10Mm, Length 50-60 Mm.
- It Should Have A Semi-Tube Dilator Of Dia 10Mm, Length 90-100 Mm.
- It Should Have A Dilator Of Dia 10 Mm, Length 110-120 Mm.
- It Should Have A Semi-Tube Dilator Of Dia 12 Mm, Length 60-70 Mm.
- It Should Have T Type Retractor Of Dia 5Mm, Length 155-160 Mm.
- It Should Have A Straight Root Retractor Of Width 4Mm, Length 100-120 Mm.
- It Should Have A Straight Root Retractor Of Width 8Mm, Length 100-120 Mm.
- It Should Have A Retractor Of Width 2Mm And 3Mm, Length 100-110 Mm.
- It Should Have A Retractor Of Width 4Mm And 5Mm, Length 100-110 Mm.
- It Should Have A Double Ended Retractor Of Width 3Mm With 0 Degree And 15 Degree, Length 30O-310Mm.
- It Should Have A Double-Ended Retractor Of Width 3Mm With 25 Degrees And 35 Degrees, Length 30O-310Mm.
- It Should Have A Sheath Protector Of Dia 9 Mm And 7 Mm Of Length 110- 120Mm.
- It Should Have A Flushing Guide Needle Of Dia 4Mm And An Angle Of 135 Degrees.
- It Should Have A L Shape Bone Probe Of Tip 4Mm And Length 100- 110Mm.

Dr. Kamlesh Singh Bhaisora
Professor

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor

- It Should Have A Disc Reamer Of Edge Width 4Mm And Length 220- 240Mm.
- It Should Have A Rotatable Punch Of Width 2Mm, Angle 110 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Of Width 3Mm, Angle 110 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Of Width 2Mm, Angle 130 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Of Width 3Mm, Angle 130 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Curved Of Width 2Mm, Angle 130 Degrees And Length 220- 230Mm.
- It Should Have A Rotatable Punch Curved Of Width 3Mm, Angle 110 Degrees And Length 220- 230Mm.
- It Should Have A Separate Handle For Punches.
- It Should Have Straight Granular Nucleus Forceps Of Width 4Mm, Length 180- 200Mm.
- It Should Have Upturned Granular Nucleus Forceps Of Width 4Mm, Length 180- 200Mm.
- It Should Have Straight Square Nucleus Forceps Of Width 4Mm, Length 180- 200Mm.
- It Should Have Upturned Ball Nucleus Forceps Of Width 3Mm, Length 180- 200Mm.
- It Should Have An Autoclavable Metallic Instruments Tray For The Above Instruments.

Plasma Surgical System

- It Should Be Designed For Cutting, Ablation, Vaporization, Coagulation Of Soft Tissues, Hemostasis Of Blood Vessels, And Suction Capabilities In One Versatile Single-Use Device.
- It Should Work In Normal Saline Solution To Generate Plasma Energy.
- It Should Be A Multifunctional Machine For Both Spine Surgeries And Arthroscopic Sports Medicine Surgeries.
- It Should Have Both Radio Frequency & Plasma Energy, To Be Delivered With A Single Generator
- It Should Have A Memory Function To Remember The Last Selected Power Setting.
- It Should Have Push Button Control, Led Digital Display & Water Proof Panel.
- It Should Have Precise Operation (Ablation Works At The Targeted Tissue Surface).
- It Should Be Able To Avoid Unexpected Nerve Damage.
- It Should Have Impedance Detection And Automatic Energy Inspection Technology, And Thermal Damage Depth Monitoring System.
- It Should Have A Working Temperature Of 40-70 °C. Celsius No Carbonization And Reduced Damage To Surrounding Tissues.

Dr. Kamlesh Singh Bhaisora
Associate Professor

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor

- It Should Have Automatic Accessories & Electrodes Recognition And Optimized Operating Mode Selection.
- It Should Have A Different Sound For Ablation And Plasma Coagulation To Avoid Activating The Wrong Foot Control. The Sound Volume Should Be Adjustable.
- It Should Have An Individual Saline Flow Control Unit And Cable To Control The Saline Irregation
- It Should Have Reusable Treatment Cable
- Saline Flow Control Unit Should Activated With Foot Padel For The Optemized Irregation
- It Should Have Toggle Button On Foot Pedal For Increasing And Decreasing Power.
- It Should Have An Audio Alarm For Every 5 Seconds Of Activation Time For Certain Eletrode Selection.
- It Should Have Different Types Of Surgical Electrodes With Different Shapes & Angles
- It Should Have Electrode For Ablation And Coagulation With Tip Dia Of 3.5 – 4.5 Mm And Shaft Length 130 Mm – 150 Mm, Angle 90 Degrees
- It Should Have Electrode For Ablation And Coagulation With Hook Tip Dia Of 3.5 –4.5 Mm And Shaft Length 130 Mm – 150 Mm
- It Should Have Electrode For Ablation And Coagulation With Tip Dia Of 2–2.5 Mm And Shaft Length 110 Mm – 130 Mm
- It Should Have Electrode For Ablation And Coagulation With 360 Degree- Bendable Tip Dia Of 3–3.5 Mm And Shaft Length 120 Mm – 140 Mm
- It Should Have Electrodes For Skull Base Surgery With Working Length 120- 130Mm With Agle Of 25-40 Degrees With Diameter Of 4- 6Mm
- It Should Have Electrodes For Pituitary Surgery With Sorking Legth Of 120-130 Degrees With 25-30 Degree Handle Length 160- 170Mm
- It Should Have A Bleeding Control Electrode With A Tip Diameter Of 2-2.5Mm With A Shaft Legth Of 105-110 Mm With A Suction Line Length Of 350-400M
- It Should Have A Bipolar Plasma Forcep With A Tip Diameter Of 0.4-0.8 Mm With A Shaft Length Of 200-210Mm
- It Should Have A Bipolar Plasma Forcep With A Tip Diameter Of 0.4-0.8Mm With A Shaft Length Of 100- 110Mm

Instruments Set For Fusion Surgery

- It Should Have Telescope Of Dia 4Mm 0 Degree With Working Length 170- 180Mm Along With A Sterilization Box With Silicon Connection For Locking Of Sheath.
- It Should Have Telescope Of Dia 4Mm 30 Degree With Working Length 170- 180Mm Alongwith A Sterilization Box With Silicon Connection For Locking Of Sheath.
- It Should Have Jet Flow Scope Sheath Along With Obturator Of Dia 5-6 Mm For 0 Degree Telescope With Working Length 120-130 Mm With Push Button For Locking Mechanism.
- It Should Have Jet Flow Scope Sheath Along With Obturator Of Dia 5-6 Mm For 30 Degree Telescope With Working Length 120-130 Mm With Push Button For Locking Mechanism.
- It Should Have A Dilator Dia 12 Mm, Length 150-160Mm

Dr. Kamlesh Singh Bhaisora

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Dept. of Neurosurgery

- It Should Have A Dilator Dia 14 Mm Length 140- 150 Mm
- It Should Have A Dilator Dia 16Mm Length 130- 140Mm
- It Should Have A 15-20 Degree Upturned Chisel Of Width 5Mm
- It Should Have A 30-35 Degree Upturned Chisel Of Width 5Mm
- It Should Have A Straight Chiesel Of Width 5Mm
- It Should Have L-Shape Chisel Of Width 5Mm
- It Should Have The Right Bent Root Retractor Of Length 100- 110Mm And Width 10- 12Mm
- It Should Have Left Bent Root Retractor Of Length 100- 110Mm And Width 10- 12Mm
- It Should Have A Right Edge Fold Root Retractor Of Length 100- 110Mm And Width 5Mm
- It Should Have A Left Edge Fold Root Retractor Of Length 100-110Mm And Width 5Mm
- It Should Have Osteotome Retractor Dia 9Mm Length 255- 260Mm
- It Should Have A Straight Disc Reamer Of Width 7Mm, Length 200-220Mm
- It Should Have A Straight Curette Of Width 3Mm, Length 140-150Mm
- It Should Have A Straight Curette Of Width 4Mm Length 140- 150Mm
- It Should Have A Side Bent Hollow Curette Of Width 3Mm, Length 140-150Mm
- It Should Have A Side Bent Hollow Curette Of Width 4Mm Length 140- 150Mm
- It Should Have Bone Hammer
- It Should Have A Rotatable Punch Of Width 2Mm, Angle 110 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Of Width 3Mm, Angle 110 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Of Width 2Mm, Angle 130 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Of Width 3Mm, Angle 130 Degrees, And Length 220-230Mm.
- It Should Have A Rotatable Punch Curved Of Width 2Mm, Angle 130 Degrees, And Length 220- 230Mm.
- It Should Have A Rotatable Punch Curved Of Width 3Mm, Angle 110 Degrees, And Length 220- 230Mm.
- It Should Have A Separate Handle For Punches.
- It Should Have Straight Granular Nucleus Forceps Of Width 4Mm, Length 180- 200Mm.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery

Dr. Ashutosh Kumar
M.S., M.Ch.
Professor

- It Should Have Upturned Granular Nucleus Forceps Of Width 4Mm, Length 180- 200Mm.
- It Should Have Straight Square Nucleus Forceps Of Width 4Mm, Length 180- 200Mm.
- It Should Have Upturned Ball Nucleus Forceps Of Width 3Mm, Length 180- 200Mm.
- It Should Have An Autoclavable Metallic Instruments Tray For The Above Instruments.

Power Surgical System

- It Should Be Designed For Drilling, Grinding, Cutting Treatment Of Human Bone Tissue And Soft Tissue In Ortho Or Other Surgery.
- It Should Have A Large Size, High Definition Full Color Lcd Touch Screen With Handle Model Identification And Display, Speed Display, Handle Operation Direction Mode Setting, Pump Flow Display, And Adjustment.
- Speed Setting, Operation Mode Setting, Activity Handle Selection, Pump Start And Stop, And Flow Adjustment Should Be Operated Through The Screen.
- It Should Have A Built-In Cooling/Flushing Pump With An Independent Switch That Provides Water Injection Flushing And Cooling Function With Adjustable Flow.
- All Modes Should Be Selectable Through The Screen, Foot Switch & Handle Button.
- It Should Have Self-Inspection And Error Prompt Functions, The Fault Automatically Stops Working And Displays The Fault Code.
- It Should Have A Multi-Function Foot Switch With 3 M Cable.
- It Should Be A Micro-Ultra Lightweight Design Handle, An Ergonomic Design, A Comfortable Grip, And Good For Long-Term Surgery.
- It Should Have An Imported Brushless Motor, Large Torque, Low Noise With Small Vibration, And Durability.
- It Should Support Multiple Rotation Modes With Adjustable Speed And A Maximum Speed Of 12000 R/Pm.
- It Should Have A Reaction Frequency Adjustable Up To 200 Times/Min.
- The Handle Should Have An Overload Protection Function.
- It Should Have A Titanium Alloy Body High-Speed Handle.
- It Should Be A Micro-Ultra Lightweight Design Handle, Slim Shape For Easy Pen Grip.
- It Should Have An Imported Brushless Motor, Large Torque, Low Noise With Small Vibration, And Durability.
- It Should Have A Positive And Reverse Mode Free Switch With Adjustable Speed.
- It Should Have Sheathe Carborundum Burr Dia 4Mm Length 110-115Mm.- 5 Nos
- It Should Have Sheathe Watermelon Piece Burr Dia 4Mm Length 110-115Mm.-5 Nos

All The Items In The Spinal Instrument Set Should Be From A Single Manufacturer And Must Be CE/BIS/US-FDA Approved.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Dept. of Neurosurgery
Lucknow

Trauma Surgery (ATC)

Sl. No. 23 (6)

Specification for CUSA

1. The System must be compact with built-in suction facility on trolley.
2. The system should be based on Magneto restrictive and Piezoelectric Technology with 20 KHz-40KHz frequency.
3. Should have 3 major functional sub-systems: Fragmentation, Irrigation and Aspiration.
4. Should have tissue select dedicated control of differentiating between firm and tougher tissues for patient safety.
5. Should have tip amplitude up to 350 microns or more.
6. Irrigation Pump, Integrated, Adjustable at 0-10 ml/min and fast flush 25ml/min.
7. Suction Pump, Integrated, Adjustable upto 660 mm Hg., desirable central suction channel in the handpiece
8. Should have adjustable irrigation and suction settings displayed on the console.
9. Should have suction pathway external to the hand piece housing to enable fast cleaning and eliminating tissue trap.
10. Should have CO-axial irrigation system to minimize thermal damage and blockage.
11. Should have Pre-aspiration holes to minimize heat built-up blockage, decreases misting of irrigation fluid, providing better visibility.
12. Should have light, powerful and ergonomically designed hand pieces.
13. The Tips should be autoclavable and re-usable. Tips should be curved for enhanced visibility under an operating microscope and changeable in sterile field.
14. Following accessories must be included in the quoted price and others be quoted with separate prices for selection at time of purchase/re-purchase.
15. 23 and 36 KHz Universal Straight Handpiece — INO Each
16. Tubing Set— 12 Nos.
17. Straight Tip with Flue (2Pcs.)

Dr. Amit Kumar Singh
Associate Professor,

18. Curved Extended Standard Tip with flue (2 Pcs.)

19. Laparoscopic Tip with flue (IPcs.)

20. Sterilization Case — 2Nos.

21. Tip Tightening wrench Set-I Set

22. CEM nosecone (2 Pcs)

23. Micro Tip with flue for delicate procedure (IPcs.)

24. Shear Tip with flue for fibrous and tough tumors (INO.)

25. For extended hours of operation (more than 4-8 hours), the hand piece must have inbuilt water cooling system to avoid heating of the hand piece.

26. The control panel should have adjustable viewing angle for better visibility in the O.R. and must be equipped with quite pumps.

27. Should be compatible and include electrosurgical unit and provided with required accessories to get coagulation effects on the same ultrasonic tip of any size which can be simultaneously or independently operable.

28. The laparoscopic handpiece should also have HF electrosurgical facility on the tip.

29. Standards and Safety:-

30. Manufacturers/Suppliers should have ISO certificate to Quality Standard.

31. Should be complaint with IEC 61010-1, UL 2601-1, IEC 801-1-5, and CISPRII covering safety requirements for electrical equipment for measurement control and electromagnetic interference to other equipment used in the operating room

32. Should be FDA or CE approved product

Dr Amit Kumar Singh
Associate professor

Forensic Medicine Sl. No. 22 (63)

SPECIFICATION OF DEAD BODY WEIGHING FLOOR SCALE

1. Should be a floor top model.
2. Platform of the weighing scale should be constructed of Type 304 Chequered Stainless Steel.
3. Steel Thickness should be 3mm/12 gauge
4. There should be FOUR load cells with 100% end loading.
5. There should be Digital Indicator.
6. There should be an Access Ramp constructed of Type 304 Chequered Stainless Steel which allows autopsy carriers to roll easily on to the scale platform for weighing.
7. Should have minimum weighing capacity of 500 Kg.
8. Width of the Weighing Platform: 48 inch
9. Length of the Weighing Platform: 60 inch
10. Height of the Weighing Platform: 3.5 inch
11. Manufacturer should have following Certificate:

(i) NSIC Manufacturing
(ii) UDYAM Manufacturing certificates.
(iii) ISO 9001:2015
(iv) ISO 13485:2016
(v) ISO 14001: 2015 Environment Management System
(vi) WHO-GMP Certificate
(vii) Trade Mark Certificate

All the above certificates must has been issued at least three months before the date of tender publication. If the certificate has been recently upgraded, then the previous expired certificate has to be uploaded along the latest certificate.

All the above certificates has to be uploaded in the technical bid.

12. Manufacturing Company must have its Trade Mark registered by Government of India under Trade Mark Act, 1999. Trade Mark Registry Certificate (showing the company's Trade Mark) has to be uploaded.

13. Minimum Two (02) same make Floor Scale (supplied directly or indirectly by the manufacturer) must be installed in any Government Medical College. Satisfactory Installation report has to be uploaded in technical bid.

Dr. Ankit Kumar

14. Quoted product can be called for physical demonstration by technical evaluation committee if required. All cost for physical demonstration shall be borne by the manufacturer.

21/5/25

Dr. Ankit Kumar
Assistant Professor, Forensic Medicine
Apex Trauma Centre,
SGPGIMS, Lucknow

Sl. No. 02

TECHNICAL SPECIFICATION OF DEFIBRILLATOR

DESCRIPTION of Function

• Defibrillator is required for reviving the heart functions by providing selected quantum of electrical shocks with facility for monitoring vital parameters.

Operational Requirements

• Defibrillator should be Bi- Phasic, light weight and latest model
• Should monitor vital parameters and display them
• Should print the ECG on thermal recorders.
• Should work on Manual and Automated external defibrillation (AED) mode. Manual selection up to 270 J.
• Should be capable of doing synchronized & asynchronized cardioversion
• Can be operated from mains as well as battery
• Should have defibrillator testing facility

Technical Specifications

• Should be a Low Energy Biphasic defibrillator monitor with Recorder, having capability to arrest all
arrhythmia within a maximum energy of 360 Joules
• Should monitor ECG through paddles, pads and monitoring electrodes and Defibrillate through pads and paddles.
• Should have Automatic Lead switching to see patient ECG through paddles or leads
• Should measure and compensate for chest impedance for a range of 25 to 150 ohms
• Should have a built in 50mm strip printer/ thermal recorder
• Should have charging time of less than 3 seconds for maximum energy. Charging indicator should be there.
• Should have bright electroluminescent display for viewing messages and ECG waveform of 4 seconds
• Should have external & internal paddles with paddles contact indicator – for good paddle contact. Single Adult and pediatric paddles should be available.
• Should have event summary facility for recording and printing at least 250 events and 50 waveforms.
• Should be capable of printing Reports on Event summary, configuration, self test, battery capacity etc
• Should have facility for self test/check before usage and set up function
• Should have SP02 and NIBP integrated facility
• Should have user friendly color coded operation

Environmental factors

• The unit shall be capable of operating continuously in ambient temperature of 10 -50^0 C and relative humidity of 15-90%
• The unit shall be capable of being stored continuously in ambient temperature of 0 -50^{0}C and relative humidity of 15-90%
• Shall meet IEC-60601-1-2: 2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

Power Supply

• Power input to be 220-240VAC, 50Hz. Power cable should be fitted with Indian plug and adapter.
• Resettable overcurrent breaker shall be fitted for protection
• Should have a Rechargeable Battery capable of usage for at least 90minutes or 30 discharges.

Standards, Safety and Training

• Should be FDA approved product

• Manufacturer should have ISO certification for quality standards

• Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC60601-2-25

Safety of Electrocardiograms. (OR EQUIVALENT BIS Standard)

Drop Test-Withstands 1 meter drop to any edge, corner or surface.

• Should conform to international test protocols on exposure to shock forces and to vibration forces.

• Should meet IEC 529 Level-2 (IP2X) for enclosure protection solid foreign object ingress.

• Should meet IEC 529 Level 3 (IP3X)(spraying water) for enclosure protection, water ingress.

• 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.

Documentation

• User Manual in English

• Service manual in English

• List of important spare parts and accessories included in the warranty with their part number and costing

• List of important spare parts and accessories not included in the warranty with their part number and costing

• Certificate of calibration and inspection from factory.

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226...

Sl. No. 36

20

Difficult airway Management training and Evaluation system

1. Difficult Airway management training and evaluation system for real time objective evaluation of intubation skills using real clinical devices .
2. Should have the facility to simulate and select various scenarios of airway management skills including Normal airway , Lock Jaw, Rigid Neck and Micrognathia,
3. The Airway Management system should be compact, mounted on a trolley and should be equipped with minimum 20 sensors for airway management skills evaluations
4. The system should provide quantitative feedback and evaluation on each component of intubation skills which should be monitored and displayed on the screen like
   a) sniffing position b) force on incisor c)force on tongue
   d) Lift Epiglottis e) tube positioning f) cuff pressure
5. The System should be equipped with a camera to capture and record the training session for review and debriefing session
6. The system should have the facility for real time dynamic visual feedback on the performance of the trainee for objective assessment of skills and to identify the area where trainees need further improvement.
7. The System should have facility to select the time allowed and measure The time taken in seconds to achieve dual lung ventilation
8. Successful of intubation should be measured by the time taken to achieve dual lung ventilation displayed in seconds on the screen along with various case parameters.
9. The simulator should have selectable learning modes like self learning mode and guest learning mode
10. Each session performance parameters\ values should be recorded and stored along with video in login account of each student for evaluation, review and debriefing
11. Should allow use of video laryngoscope with facility to display and record movie from the device which can be displayed along with assessment data
12. The system should be supplied complete with min 24" monitoring touch screen ,computer, Printer , Laryngoscope ET Tube
13. The trolley should have integrated storage compartment for keeping airway supplies, side rails for mounting accessory trays, castors with braking facility

15 The Difficult Airway management evaluation system should be supplied with complete setup including

A) Difficult airway management Demonstration system – 1 no

Should have following features

1. The model upto neck should be compact table top for DAM skills training with anatomically correct airway
2. Should have removable incisors when excessive force is applied to them.
3. Should have indicators to confirm successful tube tip placement
4. Following Airway Skiils training should be possible with the simulator:

a) Air way opening techniques like head tilt and jaw thurst
b) Bag Valve Mask ventilation,
c) Confirmation of successful ventilation by indicators.
d) Feedbacks on incorrect procedures including esophagus intubation and unilateral intubation
e) Pre intubation airway assessment
f) Intraoral or Intranasal Intubation.
g) Laryngeal mask airway management
h) Pressurization of external larynx to improve the laryngeal view
i) Use of nasopharyngeal airway management
j) Use of oropharyngeal airway management
k) Use of a video intubation with a laryngoscope.
l) Use of tracheal intubation fiber scope
m) Should be supplied complete with Laryngoscope, ET Tube – 1 no each

B) Difficult Airway Management Training system- 1 no

Should have following features

1. Simulator should be a torso model with realistic lifelike airway anatomy providing true to life articulations with wide varieties of settings for difficult airway management Training
2. Should allow training on airway opening techniques head tilt/chin lift and jaw thrust
3. Should allow Pre intubation airway assessment and sniffing position

Dr. Prateek Singh Bais
Associate Professor,
Anesthesiology

4. Should allow following variation of difficult airway management settings
   a) Neck Flexibility-Normal and Rigid,
   b) Mouth opening-Normal Intermediate and difficult
   c) ,Tongue-Normal & Swollen,
   d) Laryngospasm-Normal and Laryngospasm
5. Should allow training in following Skills
   a) Airway opening techniques(Head tilt , Jaw Thrust)
   b) Bag Valve Mask Ventilation
   c) Pre intubation airway assessment
   d) Sniffing Position
   e) Pressurization of External Larynx to improve laryngeal view
   f) Intraoral/Intranasal intubation
   g) Use of Oropharyngeal Airway(OPA)
   h) Use of nasopharyngeal Airway(NPA)
   i) Use of laryngeal mask airway
   j) Use of Video Larygeal scope
6. The incisors should be designed to break off on application of excessive force
7. confirmation of successful ventilation by observation of thoracic and abdominal movement and auscultation of chest should be possible
8. Should provide feedback of incorrect intubation including Esophagus and unilateral intubation
9. Should allow practice of securing tube in place with tape or Thomas endotracheal tube holder

C) Difficult Airway Management simulator for Bronchofiberscopy - 1 no

1. The model upto neck should be compact table top for DAM skills training with anatomically correct airway
2. Should have removable incisors when excessive force is applied to them.
3. Should have indicators to confirm successful tube tip placement
4. Should be suitable for training in insertion and management of fiberscope
5. Should be equipped with anatomically correct Trachea and Bronchi providing realistic view through a scope allowing recognition of bifurcations including Trachea Bifurcation for segmental Bronchi
6. Should allow visualization of Tracheal bifurcation ,bifurcation for left lobe bronchus, left superior lobe, segmental bronchi in left superior lobe, segmental bronchi in lingual, left inferior lobe, bronchi in left inferior lobe, right superior lobe bronchus and middle lobe bronchus ,right superior lobe, right middle lobe bronchus and inferior lobe bronchus, segmental bronchi in right middle lobe, segmental bronchi in right inferior lobe
7. Should allow training on airway opening techniques head tilt/chin lift and jaw thrust
8. Should allow Pre intubation airway assessment and sniffing position
9. Following Airway Skiils training should be possible with the simulator:

a) Air way opening techniques like head tilt and jaw thurst
b) Bag Valve Mask ventilation,
c) Confirmation of successful ventilation by indicators.
d) Feedbacks on incorrect procedures including esophagus intubation and unilateral intubation
e) Pre intubation airway assessment
f) Intraoral or Intranasal Intubation.
g) Laryngeal mask airway management
h) Use of nasopharyngeal airway management
i) Use of oropharyngeal airway management
j) Use of a video intubation with a laryngoscope.
k) Use of tracheal intubation fiber scope

Dr. Prateek Singh Bais
Associate Professor,
Department of Anaesthesiology
Trauma Centre,
S, Lucknow

Orthopaedic

Sl. No. 11

79 80

Tender Specification for DVT/VTE Pump (With Battery)

1. The device shall be able to administer external pneumatic compression for patients identified as at risk of deep vein thrombosis (DVT).
2. The device shall offer selectable modes for intermittent/uniform or sequential inflation based on the type of cuff/garment employed.
3. The device shall be capable of delivering pre-set gradient intermittent compressions ranging from 40 to 80 mmHg.
4. The device shall exhibit the following Inflation/Deflation Time within a Cycle Time of 60 seconds: Inflation: 12 seconds, Deflation: 48 seconds
5. The device shall automatically set the pressure at 40 mmHg for leg garments.
6. The device shall feature adjustable pressure settings up to 80 mmHg for foot garments.
7. The device shall function effectively on a single leg if required.
8. The device's display shall incorporate audible and visual alarm indicators for both normal operation and faults, comprising the following:
   Indicator Lights: when powered by AC source. by battery, for low pressure, high pressure, continuous pressure, overpressure, pressure setting, single garment function, etc.
9. Audible Alarm for low-pressure, high-pressure, continuous-pressure, and overpressure alerts.
10. The device shall feature an extended battery life of up to 12 hours, with automatic battery charging upon connection to an AC power source. It shall include five battery level indicators to indicate charging status.
11. The device shall come with a Rechargeable Lithium Battery pack with a minimum capacity of 2000mAh and a nominal capacity of 2200mAh.
12. A swing-out hook and a carry handle shall be integrated for ease of attachment to bed/trolley sides and portability.
13. The device shall include two distinct snap lock connections for tubing to garments.
14. Connector Tubing shall be provided, measuring 120 inches in length.
15. The cuffs/garments shall be constructed from brushed nylon and poly-foam lined tricot inner backing and shall be latex-free.
16. The system shall encompass two categories of cuff/garment compatibility:
17. Calf/Thigh/Foot Cuff for intermittent/uniform inflation
18. Calf/Thigh Cuff for sequential inflation
19. The system shall include the following Garments/cuffs in quantities of 2 each: a. Medium Calf Garment (pair) – For calf sizes up to 18" circumference b. Large Calf Garment (pair) – For calf sizes up to 24" circumference c. Extra Large Calf Garment (pair) – For calf sizes up to 30" circumference d. One-size Foot Garment – Fits left or right foot up to size 13 e. Medium Thigh Garment (pair) – For thigh sizes up to 29" circumference f. Large Thigh Garment (pair) – For thigh sizes up to 36" in circumference.
20. The device shall be designed for user-friendliness, and portability, and shall not exceed a weight of 2.2 kg.
21. Power input specifications shall be AC 100V-240V 50/60 Hz, with a current range of 0.4A-0.2A.
22. The device's classification shall adhere to Class 1, Type BF safety standards.
23. The device shall hold US FDA approval as a Class II medical device and possess ISO 13485 Certification.
24. The pricing for consumables shall be provided separately.
25. The system shall carry a warranty period of 5 years.

Dr. Pulak Sharma
Associate Professor
Speciality of Orthopaedic
Apex Trauma Centre
SGPGIMS, Lucknow-226014

ATC ward 2B

Sl No-01

TECHNICALSPECIFICATIONSOFECG MACHINES

S.No.	Features	TechnicalSpecifications&Operational/Functional Requirements
1	Size&Weight	• Sturdy&lightweightmachine<5kg, • Shouldbe compact • Shouldhavecarryhandleforportability
2	PowerSupply	• Compatibilitywithmains220-240V(normal),50/60Hz power supply • HighperformanceLi-ionrechargeablebatterywithbuilt- in charger. -Equipment should have sufficient battery backupfortakingminimum100ECGswithoutACpower. • Digitalfilteringtoremoveinterferencefrompowerline, muscle tremor etc.
3	ECG recording	ECGrecordingwith12 leads a. StandardLeads(thelimbleadsorbipolarLimbleads:I,II&III) b. AugmentedLimbLeads-(aVL,aVRandaVF) c. ChestLeads(theunipolarorVleads)-fromV_1toV_6 Simultaneous acquisition from 12 leads Recordingspeedselectionof25mm/secand50mm/sec with facility for speed selection Automatic adjustment of baseline for optimal recording ShouldhavedifferentfilterslikeBaselineFilter,EMGFilter& AC Filter Multipleoperatingmodes -automatic,manualandrhythm -CommonModeRejectionRatio>90dB
4	Built-in ECG Parameters measurement and interpretation	-Built-in ECG auto-measurement including: HR, P-R interval, P-Duration,QRSduration,Q-Tinterval,Q-TcF(Friedericia),P Axis, QRS Axis, T Axis, R(V5), S(V1), R(V5)+S(V1) **-QTcFintervalreading/measurementshouldalsobe available with Limb leads alone .**
5	Printing and Communication	-High-resolutionthermalprintingarraysystem -Builtinprintershouldworkwithstandarduniversalthermal printerpaper

Dr. Pavan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Trauma Centre

6	Standard Accessories	Themachineshouldbesupplied with • power cord , patient cable, user manual and warranty card, Operation Manual with user demonstrationvideoCD,interpretationmanual& 10thermalrecordingpaperrolls,5bottlesofjelly, Twosetseach of: • patient cable • chestelectrodes–Bothadultandpaediatric(2sets each) • limbelectrodes–Bothadultandpaediatric(2sets each)
7	SafetyProfile	Shouldbeprovidedwithterminalforgoodearthconnection to preclude electric disturbances while recording- -Musthaveasafetycertificateorvaliddetailedelectricaland functional safety test report from a recognised competent authority -Copyofthecertificate/testreportshallbeproducedalong with the technical bid.
8	Installation& Training	The firm should install the instrument at the designated locationandprovideone-daytraining/demonstrationof operationofECG machine.
9	Warranty	- performance warranty of at-least one year from date of installation+additionaltwoyearscomprehensivewarranty, -In case of breakdown of the machine, the supplier shall make the machine functional by repair (including replacementofparts)freeofcostattheusersite,within3 (three) days of the receipt of complaint, or replacethe machine (if necessary).
10	AfterSales Services	-Thesuppliersshouldhaveadequateaftersalesservice facilities covering all districts of the country. -Theyshouldhaveinfrastructureandtrainedmanpowerto attend to any complaints within 3 days of receipt of complaints

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Tender Specifications (Electrical Drill System)

Power system electro

Universal high speed electrical drill system with variable speed setting from 0 to 80,000 rpm.
Should have touch screen display panel.
Should automatically display various information like motor type, maximum rpm and current rpm level
Console to allow visible display and setting of maximum speed limit
Should have provision to attach two motors at the same time.
Should have customizable settings like acceleration and stopping characteristics for individual motors, oscillation angle
Should have single pedal foot control for varying the speed and forward & reveres rotation
System should give audible beeps/alerts while in reverse action
No inline lubrication should be required to run the motor
Should have integrated irrigation pump to allow precise adjustments of the pump flow
Irrigation spray nozzles should be supplied with all handpiece attachments
Should have provision to use various saw system
Should have quick release and lock system for tools
A perforated sterilization basket of SS Should be supplied. The sterilization basked should have racks to hold the cable, motor & various handpieces
Attachment should have tapered design for better visibility under microscope
The design should easily visible marking to identify matching attachment and tools
System should have quick connect and lockable attachment system

Control unit

- control unit should be integrated irrigation pump
- Should have easy and comfortable operation through self-explanatory Touch Screen
- Control unit should stores the most recently used settings and recalls them automatically when the respective motor type gets reconnected.
- The control unit should allow a customised adjustment of the working parameters. The following settings should be adaptive to the individual needs/habits
- Should have provision for any software updates which can be performed locally via USB-Stick.
- All applied parts should be connected to one cable

Foot control

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

- Should have rocker switch for pump and forward/reverse selection
- Should have flush irrigation mode
- Should have provision for pedal to be disassembled for easy cleaning
- Should allow pedals to be rinsed under the tap
- Should have well positioned holding rail

Device settings:

- Should have provision for selection of your language
- Should have adjustable volume of acoustic signals

Motor settings:

- acceleration/stopping characteristics should be individually adjusted for each motor type
- Should have irrigation flow setting for each motor type

All Applied parts:

- All applied parts should have an integrated motor
- Should have powerful EC motors – constant power through special motor actuation
- Should have small size, low weight and enhanced ergonomics trough integrated motor
- All applied parts should feature an on/off control
- All couplings should be keyless plug and play couplings
- All operating elements should be golden marked

Highspeed handpieces

- Should have Max RPM 80,000 & speed range of 0- 80,000 rpm
- Should have universal burr length – one burr should fit all hand piece lengths
- Each hand piece should have inbuilt motor system to allow the independent working of the hand pieces
- Should be available into two variant for standard work & heavy duty
- Should be supplied with Standard hand piece with difference working lengths – 7cm.
- Should be supplied with heavy duty hand piece with different working lengths – 13cm.
- Hand piece shaft diameter should be 5.6mm
- Should have automatic burr coupling
- Should have direct drive (motor in line with the burr, no angular gear) to avoid heating
- Should have clear hand piece burr coding

Dr. Kamlesh Singh Bhaisora
Assistant Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

- Should have provision for safety – burrs can only be exchanged when hand piece in off- position
- should have provision to turn craniotome handpiece into a short handpiece for superficial drill works enabling all works to be done related to craniotomy

Burrs

- Should have extremely large selection of high class burrs for excellent cutting and reaming performance
- Should be reusable for all the hand pieces , craniotome & perforator
- Should be supplied with reusable Rosen Burrs - 2.3mm.
- Should be supplied with Diamond burrs - 2.3mm, 4.0mm, –

Craniotomy set

- Heavy duty cranitome cutter to be supplied for the dual purpose of drilling & cutting
- Should be supplied with Holding sleeves standard for the drilling purposes –
- Should have footed attachments (Dural guard) for craniotomy in pediatric and adult sizes attachment for midline spinal laminotomy

Perforator driver

- Should have speed range 0–1,200 rpm
- Should have a perforator driver with Hudson Chuck System
- Should have Motor, hand piece & Hudson coupling combine in one
- Should have perforator coupling inside the hand piece

Care & M

Should be made up of high-grade stainless steel and PEEK-components (no aluminum parts),
Should be safely processed with alkaline cleaning agents.
Should have special rinsing device to allow the safe and reliable inner cleaning of the applied parts.
System should be suitable for holding times up to 18 minutes or more in autoclaving.
Should be CE/ISO certified

Dr. Kamlesh Singh Bhalsora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Oral & Maxillofacial Surgery

Sl. N-. 17 (69)

Accessories for an existing Microdrill and Saw System

Approximate cost: 5 lacs

The Accessories must be compatible with the Stryker microdrill system (Core 2)

Specifications:

A. Connecting cord: 01
1. 10 ft long, 3/8 diameter flexible electrical connecting cord, Dot-to-Dot push pull connectors at both ends.
2. Should be autoclavable

B. Microdrill Handpiece: 01
   1. Maximum speed not less than 50000 RPM.
   2. Should accept straight, angled attachment and contra-angle attachment.
   3. Should be able to mount accessories/ attachments without usage of any tools
   4. DC brushless motors.

C. Straight medium attachment for drill: 01

D. Sterilization case for the above accessories: 01

Dr Kuldeep Vishwakarma
Associate Professor
Speciality of Oral Maxillofacial Surgery
Apex Trauma Centre
SGPGIMS, Lucknow 226014

Sl. No 38 (14)

DEPARTMENTNEUROSURGERYSPECIFICATIONSFORFLOORMOUNTEDRAPIDMICROSCOPESAND ACCESSORIES (No's11)FORMICRONEUROSURGERYSIMULATIONLABFORRESIDENTS TRAININGFOR DEPARTMENT OF NEUROSURGERY

A. FLOOR STAND

a) Compact,Rollablethrough360degreewitheaseofpositioningandlocking system.
b) Maximumarmextensionfromcenterofstandshouldbefrom1300mmto 1500mm or more.
c) Shouldhave300Wxenonilluminationwiththebackupof300Wxenonlamp.
d) LifeofXenonbulbshouldbeminimum500hrs.
e) Thefloorstandshouldhaveelectromagneticbrakeswithmultipleaxisof freedom.
f) Thefloorstandshouldhaveaninbuilttouchscreendisplayforchangingthe different microscope parameters.
g) Allthecablesshouldbeintegratedinthefloorstand.
h) ItshouldhaveEuropeanCEorequivalentapprovalforqualityandstandard certification.

B. MICROSCOPE:

a) Themicroscopeshouldhaveapochromaticoptics.
b) Shouldhave1:6zoomratioandmotorizedmagnificationrangefrom1.5Xto 15X.
c) Shouldhaveworkingdistancefrom200mm(+/-25mm)to400mm(+/-25mm) or more through varioscope objective lense.
d) Shouldhavebinoculartubesfrom0-160degreeormoreandAdjustmentof IPD.
e) Themicroscopehandgripsshouldhavebuttonsformotorizedfocus,Zoom, illumination and electromagnetic brakes.
f) Themicroscopeshouldbesuppliedwith1CCDormorevideocameraalong with the necessary attachments.
g) Shouldhavethecapabilitytoconnecttothe monitor.
h) Camera : 4k resolution camera with minimum 12 mega pixels with CMOS sensor with rolling shutter, Pixel size 1.8µm x 1.8µm or higher, Digitization 3 × 8 bit/ pixelExposure Time Range (Integration time) 0.1 ms – 1s Gain 0× – 27× adjustable ,Image enhancement functions Active denoising,active sharpening, auto white balance will be preferred.

C. ELECTRICALDATA:

Powersupply:230VAC+/-10-15%,50Hz.

D. Accessories: Sparexenonlamps:01Nosexcludingbackuplamp1Noof floor stand.

E. Warrantyfor5years fromthedateof installations.

F. ComprehensiveMaintenance Contract:(CMC) 5Years.
All parts should be covered under warranty and CMC except Xenon lamp, sterlizablecapsandfiberoptics.Thepricesforxenonlamp,sterlizablecaps and fiber opticsshould be quoted separately for use during warranty and CMC if required.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Sl. No. 52

3. GelElectrophoresisSystemwithPowerSupply

a. **Gel Tank:** Includes a horizontal gel tank that can accommodate typical mini-gels (10x7 cm),acommonsizeforseparatingnucleicacidsandproteins.Thistankisdesignedtobe compatible with various gel types and sizes to suit different experimental needs.

b. **PowerSupply:**Thepowersupplyisprogrammable,withanoperatingvoltagerangefrom 10 to 300 volts, allowing users to adjust the conditions based on the size of the molecules being separated and the gel concentration used.

c. **UVTransilluminator:**ProvidesUVlightatawavelengthof302nm,whichiscommonly used for visualizing nucleic acids such as DNA or RNA that have been stained with intercalatingagentslikeethidiumbromide.

d. **GelCastingTraysandCombs:**Thesystemincludestraysandcombsforcastingand loading gels, enabling ease of use for the preparation of gels for electrophoresis.

e. **SafetyFeatures:**Thegelboxisspill-proof,ensuringminimalriskofsample contamination or electrical hazards.

f. **Applications:**EssentialforseparatingandanalyzingDNA,RNA,orproteinsbasedon their size. This system is widely used in molecular biology for PCR product analysis, restriction digestion analysis, DNA fingerprinting, and RNA integrity testing.

Lab Medicine (ATC) Sl. No. 18

66

Specification for Hand mannequin for phlebotomy training

Purpose

Training for peripheral blood sample collection by phlebotomy

Technical specification

Latest model to be quoted.

Arm dimension: should include a full- size right arm with replaceable skin and veins designed for peripheral venous access.

Anatomically accurate full arm model with realism of the human arm in appearance, feel and resistance at puncture sites.

Multiple injection sites for IV insertion: Dorsal veins of hand (3),Median Vein, Basilic Vein, Cephalic Vein. Palpable veins enable site selection and preparation.

Blood bag with tubing and connector set to be attached with the mannequin venous system.

Arm mannequin to be supplied in a carry case

Replaceable skin and vein system.

Accessories : Should be quoted with all accessories

01 Replacement skin and multi-vein system, 01 artificial Blood like colourant concentrate, 01 Blood Bag with tubing and connector, 01 Clamp and Hook in the carry case, , 01 Manikin Lubricant, 01 Carry Case to be provided by the supplier at no additional cost.

User/ Technical/Maintenance Manual: Should be supplied in English

Maintenance support: As per manufacturer documentation in service/technical manual

Training: Comprehensive training till familiar with the system

Demonstration: Pre-purchase demonstration if required

Approval. System and reagents should be CE /ISO approved

List of users and performance certificate from users especially from government hospitals.

AMC, CMC, warranty and other rules and regulations applicable as per rules of the institute

Dr. Awale Rupali Bhalchandra
Associate Professor
Speciality of Laboratory Medicine
Centre

Sl. No. 49 (7)

Specification for Hand mannequin for phlebotomy training

Purpose

Training for peripheral blood sample collection by phlebotomy

Technical specification

Latest model to be quoted.

Arm dimension: should include a full- size right arm with replaceable skin and veins designed for peripheral venous access.

Anatomically accurate full arm model with realism of the human arm in appearance, feel and resistance at puncture sites.

Multiple injection sites for IV insertion: Dorsal veins of hand (3),Median Vein, Basilic Vein, Cephalic Vein. Palpable veins enable site selection and preparation.

Blood bag with tubing and connector set to be attached with the mannequin venous system.

Arm mannequin to be supplied in a carry case

Replaceable skin and vein system.

Acessories : Should be quoted with all accessories

01 Replacement skin and multi-vein system, 01 artificial Blood like colourant concentrate, 01 Blood Bag with tubing and connector, 01 Clamp and Hook in the carry case, , 01 Manikin Lubricant, 01 Carry Case to be provided by the supplier at no additional cost.

User/ Technical/Maintenance Manual: Should be supplied in English

Maintenance support: As per manufacturer documentation in service/technical manual

Training: Comprehensive training till familiar with the system

Demonstration: Pre-purchase demonstration if required

Approval: System and reagents should be CE /ISO approved

List of users and performance certificate from users especially from government hospitals.

AMC, CMC, warranty and other rules and regulations applicable as per rules of the institute.

Dr. Avale Rupali Bhalchandra
Associate Professor
Dept. of Community Medicine
Govt. Medical College
Miraj-416 410

Sl.No-47

Head holder

It will used to stabilize and support the head during various procedures, such as cadaveric (human, sheep, goat etc.) dissection, temporal bone drilling and rehearsal of various approaches

Key specifications are-

- **Type:**

  This neurosurgical head holders should provide at least 3 point rigid fixation for skull pins during procedures.

  It should be floor mounted.

- **Size:**

  The head holder should be designed in a way to offer a wider range of fit. The diameter of holder should rage from of 20 cm to 40 cm.

- **Materials:**

  Head holders are typically made from durable and biocompatible materials like stainless steel or other noncorrosive metal.

- **Design features:**

  The head holders include features like adjustable straps, built-in gauges, or accessories like nosepieces or hex wrenches.

- **Compatibility:**

  Head holders should be compatible with different types of cadaveric heads(human, sheep, goat, temporal bone etc.).

Accessories:

All the essential accessories required to complete the system should be provide by the bidder. The bidder should certify the completeness and functionality of the system in all respect. One pair pins/fixator should be provided additionally.

Warranty:

As per Institute rules and regulations.

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Sl. No. 44 (10)

HighEndWorkstation

Adesktopwiththebestpossibleconfigurationsintermsofcomputationalspeed, graphics,memory,andothercriticalparameters,shallbeprovidedforday-to-day segmentation and designing activities on the medical data. Agenericconfigurationcanbereferredtobelow.

OperatingSystem	Windows10orabove
Processor	InterCore i7 or higher
Memory	16GBRAMorhigher
HardDrive	1TB
Graphics	NVIDIA(min.8GBGDDR6)orequivalent
Display	14"ormore
Ports	Headphone,USB,LAN,HDMI

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Anesthesia (ATC) OT Sl. No. 35

44

	High Frequency Chest Wall Oscillation Device
1	Airway clearance system should be based on High Frequency Chest Wall Oscillation.
2	Indicated for airway clearance from pediatric to geriatric population. Should accommodate across the targeted population by providing a selection of garment sizes which is used along with the air pulse generator
3	Should be US FDA or European CE approved.
4	Should have simple, flexible programming. Frequency, pressure and time for every therapy session should be adjustable.
5	Allows the caregiver option of creating Programs to start from a lower setting to a higher setting.
6	Disposable garment material— Wrap SPU Vest and Full SPU Vest
7	Optional : remote control feature for use instead of the ON/OFF button to pause or resume the Air Pulse Generator
8	Electrical usage should be safe
9	Should come with air hoses that connect the disposable garment to the Air Pulse Generator
10	Should have emergency stop option by patient
11	Should ease off pressure when paused
12	Disposable garments should be nonallergic product for use on individual patients over multiple treatment sessions.

Dr. Rafat Shamim
Associate Professor
Dept. of Anaesthesiology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

SPECIFICATION OF HIGH SPEED DRILLS & ACCESSORIES (6NOS)

Sl. No 45

(9)

CONSOLE and handpiece:

- Cranial,SpineapplicationsshouldbepossiblefromasingleElectricalconsoleupgradeable to future hand pieces.
- Shouldbeabletoconnectmultiplehandpiecesatatimelike Drills(Upto 75000RPM)
- Consoleshouldrecognizethevarioushandpiecesandautomaticallyadjustthe settings accordingly
- Shouldhaveinbuiltpumpseachforlrrigationandcooling
- ShouldhavelargeTouchscreenmonitor
- The various parameters should be able to adjust either from touch screen panel orfrom the multifunction foot switch
- Shouldhaveinbuiltuserfriendlyinteractivemenuandillustrativehelpguide
- Shouldhavetheprovisiontomounttheconsoleonvarioussizesoflvpoles
- ShouldhaveLowsoundlevel,preferablynotabove85dbclosetotheoperatingfield.
- Handpiece should have multidrive function.

FOOTCONTROL:

- Shouldhavemultifunctionergonomicallydesignedfootcontrol.
- SurgeonshouldbeabletocontrolfromthefootcontrolitselftheSpeed/Mode, Forward / Reverse Toggle active hand piece change etc.

ELECTRICDRILL:

- Should beergonomically designedelectricalDrillSystem with highTorque min 39NM and min 130W Power.
- Speedshouldbevariablefrom10,000to75,000rpm.
- ThedrillshouldbelightweightandCompact&weightshouldbeLow
- NoLubricationorsealshouldberequiredtorunthemotor
- Shouldhavequickreleaseandlocksystemfortoolsandattachments

ATTACHMENTS:

- AttachmentStraightlengths-7.5-8.5cm,9-11cmand13-15cm--onewitheachdrill
- AttachmentDuraguardforcraniotomy-Onewitheachdrill
- Attachment Craniotome and perforator

CUTTINGTOOLS(Consumable):-

- DissectingToolsforeachattachmentshouldbeavailable
- Cuttingburrs–5eachforlengths-8cm,9cmand14cmattachmentforeachdrill
- CuttingtoolsforDuraguard craniotomy 04witheachdrill

ACCESSORIES:

Sterilizationcase–Oneforeachdrill
SheepHeadHolderwithclamp-Oneforeachdrill Dissection
Tray with clamp- One for each drill
Largetrolleytypecarrycaseforconsoleandaccessoriesofdrill -Oneforeach drill

OTHERS:

Should be CE European /FDA/ ISO9001 certified.
Authorizedservicecentreshouldbeavailable inIndia

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M. S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I..... Lucknow

MAINTENANCE:

Minimum specified maintenance, other than exterior cleaning and sterilization.Cleaning brushes of different sizes to be provided.

Electricaldata:

Powersupply:230VAC+/-10-15%,50Hz. Input:
220 Volts ± 6%.
Output:220Volts+1%

Warrantyfor 5yearsfromthedateof installation

CMC: 5Yearsafterwarrantyperiod.

AllpartsshouldbecoveredunderwarrantyandCMCexceptconsumables.Ratesof Consumable should be quoted separately.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

PMR (ATC) Sl. No. 31

31

49

3. Hockey J stick Probe: 01

SPECIFICATIONS:

- Hockey stick design with small footprint designed to fit in tight spaces
- **Frequency** 2.5 – 16.8 MHz
- High-frequency images for superficial and small structures
- Center line markers for out of plane needle procedures
- Compatible with GE USG Model Venue go

ICP Monitor (2) Sl. No. 5 (41)

Technical Specification of ICP Monitoring system with standard accessories	
Sr. No	Technical Specification
1	Latest technology digital Intra Cranial Pressure Monitor
2	Simple setup with operation prompts for user instructions, zeroing and calibration
3	Monitor should provide a continuous digital display of systolic, diastolic and mean ICP
4	It should be compatible with standard monitors to provide waveform display of ICP and various pressure wave patterns
5	Rechargeable 3-hour battery operation for patient transport
6	Audible and visual low-battery alert functions
7	User-programmable mean ICP alarms
8	Two-minute alarm suspend function
9	Adjustable LCD lighting display
10	Integral pole clamp
11	Should supply following standard consumable accessories with each machine:
12	A) Disposable Skull access kit: 1 set
13	c) Disposable micro-sensor transducer cable: I set
14	C) Disposable micro-sensor transducer cable: I set
16	Manuals: One set of operator & service manuals with each machine.
17	Should be able to provide training of all healthcare personnel during first 1 month of installation in the group of 5 trainees per session.
18	Onsite physical demonstration of the machine with all standard actual accessories of the same makes which the firm intends to supply will be mandatory if demanded by the technical

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Sl. No 43 (72)

–ImagesegmenterProcessingsoftware–byJajalMedical

S NO.	SPECIFICATION	DETAILS
1	**Segmentation**	CreateandeditsegmentationsfromDICOMimagesusing manual(paint,draw,...),semi-automatic (thresholding, regiongrowing,interpolation,...)andautomatictools.
2	**ImageEditing**	Changeorientation,applyfilters,cropimages,organize images,imageregistration,Image alignment

Dr. Kamlesh Bhiwaniya
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

3	**View**	All the views – axial, coronal and sagittal along with 3D model,Visualisationindefinedplane,3drender,patient coordinate system, Cross sectional views, adjust transparency
4	**3D Tools**	3dcontourmappingon2D,smoothen3d models
5	**Measure**	Distance,angle,dia,area,volume,distanceoversurface, Hounsfieldvalue/density,textannotation
7	**Import**	CT,CBCTandMRI,3DSTL,OBJ
8	**Export**	DICOMimages,NRRDformat,3Dvolumemesh,STL,OBJ
9	**Licensingand Maintenance**	Softwareshouldbevalidformin 5yearsfromthedateof installation. ItshouldhaveallthefreeupgradesfromOEMduringthe activelicense period.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Oral & Maxillofacial Surgery (71) ~~(72)~~

Sl-No.16

Instrument Set for Endoscopic Ramus Condylar Fixation: 1Nos

Approximate cost: 20 Lacs

Specifications:

The set should include specialized instrumentation designed to support the endoscopic treatment of trauma and orthognathic surgery involving the subcondylar /ramus region of the mandible. The set should:

- Support intraoral and submandibular endoscopic approaches.
- Support open surgical approaches to trauma and orthognathic surgical procedures.
- Create and maintain the optical cavity while achieving reduction and internal fixation.
- Assist in the manipulation of bone fragments.
- Facilitate controlled in-plane articulation of plates for anatomically correct placement and stabilization.
- Should have CE (European) / USFDA certification.

The set should contain:

1. Handle for Optical Retractor: 1
2. Insert for optical retractor width 12 mm: 1
3. Insert for optical retractor width 17 mm : 1
4. Freer Suction Elevator with Cleaning Stylet: 1
5. Subcondylar Elevator right angled: 1
6. Subcondylar Elevator left angled: 1
7. Narrow Reduction Forceps for Fragments with Points 210-220 mm: 1
8. Retractor straight double-ended with length 240mm: 1
9. Retractor with length 60mm and width 8mm: 1
10. Large Handle with mini quick coupling: 1
11. Screwdriver Shaft with cruciform recess 1.5/2.0, self-retaining with length 70-92 mm: 1
12. Drill Bit of 1.5mm dia and length 125/130 mm for J- latch coupling: 2
13. Depth Gauge 1.5-2.0mm for measuring range up to 45mm: 1
14. Plate Holder adjustable coupling: 1
15. Tip for Plate Holder:1
16. Manipulation Screw with dia 1.9, self-drill with length 80mm: 2
17. Handle for Manipulation screw: 1
18. Drill Sleeve 2mm with Trocar should be self holding with length 62mm: 1
19. Angled Hook blunt with dia 1.5mm: 1
20. Cheek-Retract-Ring with thread : 1
21. Drill Sleeve for dia 1.5mm and length 67mm: 1
22. Drill Sleeve 2mm with Trocar and thread with length 72mm: 1
23. Universal Handle for Drill Sleeves: 1
24. Retractor curved double-ended with length 200mm: 1

Dr Kuldeep Vishwakarma

25. Pin wrench 4.5 mm, length 120 mm: 1
26. Holding forceps for plates: 1
27. Case for all instruments to fit: 1

28/04/2025

Dr. Kuldeep Vishwakarma
Associate Professor
Speciality of Oral Maxillofacial Surgery
Apex Trauma Centre
...MS, Lucknow ...36014

Neurosurgery Sl. No-07 (32)

General Specifications for Intra -Op -Multidimensional Imaging system with Image Guidance

- It should have a telescoping door section for lateral patient access.
- The moving imaging components should be in enclosed housing for increased patient and staff safety.
- It should be fully functional with no component movement in and out of sterile field.
- It should have large >30" (diagonal) display for superior viewing at a distance.
- It should have the ability to go "full screen" on any image for superior viewing at a distance.
- It should have a wireless, sterile mouse control of image viewing.
- It should have an automatic positioning system with 6 degrees of freedom.
- It should have the ability to position x-ray tube on either side of patient in lateral 2-D imaging for decreased surgeon exposure.
- It should have storage of pre-set 'park 'position for easy access to patient while imaging is not required.
- It should have a Power drive for easy handling of imaging system.
- The bore diameter of the imaging system should be more than 90 cms.
- The source to image distance should be around 40"
- It should have a CD R/W
- It should have various outputs options like Ethernet, USB, DVI-I.
- It should have DICOM functions.
- It should have different types /features of rotation like orbital, pivot swivel, Iso-wag, Iso-center.
- It should be compatible for use with multiple OT tables with or without a suitable radiolucent carbon-fiber table extension and without the need of a dedicated OT table.
- It should be compatible for use in multiple OTs without need of floor leveling, rails for movement of the system, etc.
- It should not require daily calibration before use.
- It should be suitable for operation by a regular OT or C-Arm operating technician/dedicated CT radiographer/radiologist.
- It should offer customized fields of view options such as 20cm, 40cm, etc.
- It should have CE and US-FDA approval for adult and pediatric patients.
- It should offer low dose radiation mode imaging options to reducing the radiation exposure to surgeon, hospital staff, and patient.
- It should have auto-registration feature with surgical navigation system.
- It should have high resolution fluoroscopy (>50 LP/in Low dose mode).
- The imaging system should have a 360° scan and should be motorized with more than 100 images and two levels of 3D slices thickness.

Dr. Ashutosh Kumar
M.S., M.Ch
Assistant Professor
Department of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ramesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

• It should have a 25KW - 32 KW X-ray generator for imaging dense anatomy.

• It should utilize minimum 40*30 cm digital flat panel detector, 3 megapixel (2 k*1.5 K; pixel pitch of 0.192mm) for increased image quality large field of view, square images without distortion).

• It should have a provision for selecting region of interest for automatic brightness and window/level control.

• It should be able to store more than 10,000 2D images and more than 200 3D scans on hard disk.

• It should offer two levels of operation allowing optimal slice thickness/reconstruction time selection based on the clinical application.

• It should offer 12 cm volume cube or more anatomical coverage.

Imaging guidance Specifications

• It should offer both 2D and 3D imaging options for multiple surgical applications.

• It should have high resolution 3-D Axial, Coronal, Sagittal planes imaging.

• It should offer spatial resolution higher than 9lp/cm.

• It should have storage of pre-set imaging positions for quick, accurate access to commonly viewed image avoiding the need for re-scouting.

• It should complete 3-D image acquisition in less than 20 seconds.

• The 3-D image should be displayed in less than 30 seconds from initiation of acquisition.

• It should have automatic noise reduction, edge enhancement, full screen zoom, digital image rotation, digital window/level control, left/right and top/bottom image reversal positive /negative image inversion.

- System should be US FDA and CE approved
- The Multi-Dimensional Surgical Imaging system should be compatible with image guided surgical navigation system with auto registration facility.
- System should have >4TB solid-state drive which ensures ample space to store examinations.
- System Should be installed in reputed institutes with minimum number of installations-10

Image Guidance System:

- The system should be a high-performance Image-Guided Surgery System that works with Windows/Linux/Unix Operating System Environment.
- The system should have at least two carts to ensure
- a) optimized placement of the carts in OT, and
- b) better OT workspace management.
- The system should have at least two monitors mounted either on the same cart or different carts. The monitors should have:

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Dept. of Neurosurgery

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

a) >25" screen size

b) high resolution 2560 X 1440 pixels

c) flat panel, touch screen display

d)operable with a finger touch, capacitive stylus, gloved finger

• The system should be operable from either both the carts or both the monitors.

• The system supplied should have the capabilities of navigation using Optical Tracking Technology

- The system should offer total control of software from sterile field i.e. should not require any additional personnel to run the system during surgery. Total control of software from sterile field includes options such as

  a). magnify the images,

  b). go to next or back window on software workflow,

  c). take screen shots,

  d). to change the screen layout, and

  e). to respond the command prompt in case to operate the system in sterile field when no one is present on staff cart.

• The system should offer data transfer capabilities:

  a). PACS/Network,

  b). CD/DVD,

  c). USB, and

  d). wireless transfer.

• Should have remote planning capabilities.

• System should have 4TB solid-state drive which ensures ample space to store examinations

- Systems should have facility of real time navigations of screw trajectory with capabilty od automatic calculation of trajectory parameters after images acquisition

• System should have at least 16GB RAM for fast performance and image manipulation.

- The system should be HIPPA compliant allowing customer to define the level of security for user authentication, antivirus protection, encryption, and firewall protection
- The system should have low/economical recurring disposables cost.

Instruments: Cranial And spine

Different adapters and trackers should include:

Each navigated tracker should be color coded/have different geometry so that navigation system and staff can automatically recognize the identity of tracker without the chance of misinterpreting the identity of a tracker when several trackers are being used in tracking field.

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
PGIMS, Lucknow-226014

a). Clamp: Tall and Short

b). Double Spinous Process Clamp: Tall and Short - for patients with osteoporotic bone

c). Radiolucent Reference Frame

d). Navigable Dilator for MIS procedures

e). Pedicle Feeler

f). Taps:4.5, 5.5 mm

g) Standard and Reduction Screw Driver

h) Jamshidi Needle

The System should have dedicated navigable instruments for treating upper spine including cervical and upper thoracic including:

a). taps :3.0, 3.5, 4.0mm

b). drivers

Cranial application:

• The system should include a frameless biopsy kit with a Biopsy needle that can be tracked or navigated, shunt placement instruments, lesion resection instruments.

• The system should be provided with user friendly and intuitive software.

• The system should be provided with a software that is easy to maintain and support

• The system should accept image fusion correlation between multiple CT, MRI, CTA, MRA, FMRI and PET images

• The system should have option to integrate directly with imaging system for direct import of FMR/DTI image to station via CD DVD, PACS, and USB with tract overlays designed.

• System should be easy to use and with minimum recurring cost for maintenance.

• There should be policy to support the services and buyback the systems as per institute guidelines.

Accessories

S. No.	Accessories	Quantity
1	Lead apron	10
2	Thyroid shield	10
3	Gonadal shield	10
4	Lead googles	10
5	Slim LED view box	1
6	Radiation module shield	1

Dr. Ashutosh Kumar
M.S., M.Ch.
Associate Professor
Department of Neurosurgery

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

7	LED 55 inch thin monitor	1
8	Ups with minimum 30 min backup	1
9	Life time Cloud storages 4 TB	1
10	External hard drive 4 TB	1

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

tissue culture, PCR, and enzyme assays.

Sl. No. 51

2. Microcentrifuge

a. **MaximumSpeed:**14,000revolutionsperminute(rpm),whichissufficientforrapidly separatingbiologicalcomponentslikeproteins,nucleicacids,andcellsathighspeed, allowing for the pelleting of small volumes efficiently.

b. **Capacity:**Accommodatesupto24microtubes(1.5or2.0mLeach).Thishighcapacityis beneficial for processing multiple samples simultaneously.

c. **DigitalDisplay:**Featuresadigitalinterfaceforprecisesettingsofbothspeed(rpm)and time. This provides accuracy and ease of use in adjusting centrifuge parameters for various types of applications.

d. **Lid-lock System:** Ensures the centrifuge operates safely, locking the lid during the spinningprocessandpreventingaccidentsorcontaminationduetoopeningthelidwhile running.

Dr. Karunesh Singh Bhaisora
Associate Professor
Dept. of Neurosugary
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.

e. **NoiseOperation:**Designedforlow-noiseoperation,whichhelpsmaintainaquieter working environment, especially in shared laboratory spaces.

f. **Applications:** Ideal for molecular biology applications such as nucleic acid extraction, pelletingofcellularcomponents,and samplepreparationfordownstreamanalysis.The microcentrifuge is also used for mixing reagents and processing small-volume samples that are common in molecular biology research.

enzymatic reactions requiring precise temperature control.

6. MicropipetteSet(Setof3)

Sl. No. 55

a. **VolumeRange:**Thesetincludesthreemicropipettes,eachwithaspecificvolumerange: 0.1–2 µL, 2–20 µL, and 20–200 µL. These cover a wide range of volumes, providing flexibilityinliquidhandling.

b. **DigitalVolumeDisplay:**Eachpipetteincludesadigitaldisplaythatallowsforeasyand precise setting of volumes, ensuring accuracy in liquid transfer.

c. **ErgonomicDesign:**Themicropipettesaredesignedtobeergonomic,reducinghand strain during extended use, which is important for long sessions of liquid handling.

d. **Autoclavable:**Thepipettesarefullyautoclavable,makingthemeasytosterilizeand ensuring there is no cross-contamination between samples.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.

e. **CalibrationCertificate:**Comeswithacalibrationcertificatetoensurethateachpipetteis accurate and conforms to industry standards for liquid handling precision.

f. **Applications:**Usedextensivelyforpreciseliquidhandlinginmolecularbiology workflows,includingpipettingreagents,nucleicacids,andenzymesolutions,aswellas preparing solutions and mixing PCR reactions.

Sl. No. 39 (13)

SPECIFICATIONMICROSURGICALINSTRUEMENTS-6NO. SET

Generalterms &conditions

- Instrumentsshouldbecorrosion–resistant
- Wholesetshouldbequotedcompletely
- Priceofeachitemshouldbequotedseparately
- Warrantyfor2yearsagainstmanufacturingdefect.
- EuropeanCE/ISO9001certified

Srno.	Items	Qty
	Eachsetshouldbeconsistingof:	
1	ScalpelhandleforbladeNo.10-15140-160mmlength	1
	bladeNo.18-36140-160mmlength	1
2	Metzenbaumscissor,curved140-150mm	1
3	MayoScissor,Straight140-160mm	1
4	Reynolds-JamesonVascularScissor140-150mm	1
5	YasargilMicroscissor,Bayonetshaped170-180mm	1
6	Microscissorswithroundhandle,straight140-150mm	1
7	Microforcepsbayonetshaped170-180mm	1
8	Microforceps,Straightwithroundhandles0.2tips110-120mm	1
9	Microsuturetyingforceps,straight120-130mm	1
10	Microforceps,jewellerspattern,straighttip110-120mm	1
11	Microforceps,toothed,straight(110-120 mm)	1
12	Microneeldeholder,straight,withoutratchet,Diamonddusttip,(6/0 &thinnersutures)130-150mm)	1
13	Microneeldeholder,straightwithroundhandles,withoutratchet planetip(for8/0&thinnerstutures)130-150mm	1
14	Penfielddissectorno3,4,5	1Each
15	Periostcalelevator120-130mm	1
16	Vesseldilator0.5mm120-130mm	1
17	Microsuctiontips1mm	1
	0.5 mm	1
18	Storagecumautoclavingrackforinstrumentswithlid (withseparateslotforeachinstrument)	2

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Trauma Surgery (ATC) Sl. No. 24 59

Equipment Specification for mobile LED OT Light with Stand

1. **Color**
2. Color Temperature (variable)3,600-5,500 k
3. Color Rendering Index (CRI) > 93
4. **Light:LED Light source**
5. Diameter of light head 500 mm
6. Light intensity @ 1.0 m 125,000 Lux
7. Light intensity @ 0.75m 175, 000 Lux
8. Light Field Diameter @ 100cm, 120 to 350 mm
9. Depth of Illumination 800 mm
10. Number of LEDs, minimun 6
11. Light Intensity Adjustemnt Range 10%- 100%
12. Radiated UV energy with vavelenght Less than 400 (w/m2): <0.002
13. Power Input
14. Rating: 110-240V 50/60 Hz
15. **LED Power : 1W X 20**
16. Average Working Life >50,000 Hour
17. Should have Digital control panel
18. Should have Cool and comfortable beam
19. Should have Lightweight and slim light head for excellent laminar flow
20. Should have Multi-lens geometry lighting system
21. Should have Lowe energy consumption
22. Should have Focusable beam
23. Should have Excellent shadow reduction
24. Should have wall mounted battery back up power supply.
25. Product should be FDA Approved

Dr Amit Kumar Singh
Associate Professor

Forensic Medicine ATC

Sl. No. 21

SPECIFICATION OF MOBILE O.T. LIGHT (Total Quantity TWO in number)

1)	The Lamp should be pedestal and mounted on 4 wheels		
2)	The Lamp should have Reinforced Aluminium Structure.		
3)	The Lamp should have ON/OFF switch on the lamp head with focusing handle on the lamp head.		
4)	Light can switch off automatically, when not in use.		
5)	The lamp should have Single Colour White LED's (Warm white and cold White)		
6)	The Lamp should have LED Technology with 16 to 20 LEDs		
7)	The arrangement of LED should be in such a way that Shadow Free/Deep cavity illumination is achieved		
8)	The Lamp should have circular/squiracle design should maximizes the field of illumination and optimized the illumination depth.		
9)	The Lamp should have good laminar flow properties		
10)	Light Intensity, Color Temperature and Field diameter through electronic controlled and without touching the cupola.		
11)	The lamp should have efficient heat management system through heat sink and low power consumption.		
12)	The Lamp should have simple and fast dis-infection process. IP54 protection for high resistance to water and dust.		
13)	The Lamp should be able to rotate 180 deg. rotation of domes/light heads.		
14)	Technical data of Light Head:		
	a)	Central illumination(Lux)	1,60,000
	b)	Intensity Range(Lux) dimming capability from – to	50,000-1,60,000
	c)	Life time of light source(hrs)	Greater than 60,000
	d)	Light Field Diameter(mm), D50-D10	110-200
	e)	Colour Temp(K)	3500 to 5000

Dr. Anil Kumar
Forensic Medicine
Centre,
Lucknow

64

	f)	Light Head Power consumption	Approx. 44 W at 24 V-D.C
	g)	Temp Increase	Less than 2 deg.
	h)	Certification	European CE Compliance and the manufacturing company should have latest EN ISO 13485:2016 and BIS approved.
	i)	Power supply – Primary Voltage (V-A.C.	100-240
15)	Warranty:		Minimum of 2 Years on
16)	Light should have ergonomic handle for an easy movement of the light.		
17)	The manufacturer must have 10 years' experience in manufacturing of Surgical Lights and minimum 5 years in manufacturing of LED Surgical Lights.		
18)	Quoted product can be called for physical demonstration by technical evaluation committee if required. All cost for physical demonstration shall be borne by the manufacturer.		

2/5/25

Dr. Ankit Kumar
Assistant Professor, Forensic Medicine
Apex Trauma Centre,
SGPGIMS, Lucknow

Orthopaedic ATC

Sl. No - 13

Multiparameter Monitor

1. The monitor system should be European CE or US FDA approved . Certificate of Both Standard Should be attached with Tender.
2. The monitor should be preconfigured in Design and having min. 5hrs battery back up.
3. Monitor should measure 3/5 Lead ECG, Resp, Temperature, SpO2 with perfusion index value (PI%), NIBP ,2IBP,ETCO2 & CO (Port Ready)as a Basic Parameters.
4. It should have bright, highly visible with 15" color LED Touch screen and trim knob display for easy viewing from a distance.
5. The monitor should display atleast 10 waveforms traces on a single screen
6. The monitor should have flexible configuration.
7. The monitor should have changeable screen configuration for various monitoring settings. The size of numerics should be adjustable.
8. There should be external ports for Keyboard, Mouse, Slave display, Emergency Nurse Call, USB ports& fanless design.
9. The monitor should be capable to support wireless networking and compatibility to use with Central Monitoring System.
10. There should be alarm limit setting for every parameter and it should be fanless design monitor.
11. It should have priority color coded audio – visual alarm system with bright prompt message on the screen. There should be a separate color coded audio – visual alarm when patient data deviates from normal limits and machine failure, improper function.
12. There should be complete ST Segment& Arrhythmia analysis minimum 23 types..
13. The monitor should have OxyCRG screen.
14. There should be various calculations like Drug dose, Oxygenation, Ventilation, Renal, and Homodynamic.
15. Monitor should be upgradable Mainstream ETCO2(Prices to be quoted separately)
16. Monitor should have view other bed facility on screen without need of central monitoring unit.
17. Monitor should be not more than 5KG with battery for easy transportation when required.
18. Monitor should have CAA tools like EWS and SPO2 Histogram for efficient uses.

Dr. Pulak Sharma
Associate Professor
Speciality of Orthopaedic
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Ward (4th Floor) (Trauma Surgery Ward

Sl. No-26

Multiparameter Monitor

1. The monitor system should be European CE or US FDA approved . Certificate of Both Standard Should be attached with Tender.
2. The monitor should be preconfigured in Design and having min. 5hrs battery back up.
3. Monitor should measure 3/5 Lead ECG, Resp, Temperature, SpO2 with perfusion index value (PI%), NIBP ,2IBP,ETCO2 & CO (Port Ready)as a Basic Parameters.
4. It should have bright, highly visible with 15" color LED Touch screen and trim knob display for easy viewing from a distance.
5. The monitor should display atleast 10 waveforms traces on a single screen
6. The monitor should have flexible configuration.
7. The monitor should have changeable screen configuration for various monitoring settings. The size of numerics should be adjustable.
8. There should be external ports for Keyboard, Mouse, Slave display, Emergency Nurse Call, USB ports& fanless design.
9. The monitor should be capable to support wireless networking and compatibility to use with Central Monitoring System.
10. There should be alarm limit setting for every parameter and it should be fanless design monitor.
11. It should have priority color coded audio – visual alarm system with bright prompt message on the screen. There should be a separate color coded audio – visual alarm when patient data deviates from normal limits and machine failure, improper function.
12. There should be complete ST Segment& Arrhythmia analysis minimum 23 types..
13. The monitor should have OxyCRG screen.
14. There should be various calculations like Drug dose, Oxygenation, Ventilation, Renal, and Homodynamic.
15. Monitor should be upgradable Mainstream ETCO2(Prices to be quoted separately)
16. Monitor should have view other bed facility on screen without need of central monitoring unit.
17. Monitor should be not more than 5KG with battery for easy transportation when required.
18. Monitor should have CAA tools like EWS and SPO2 Histogram for efficient uses.

Dr. Amit Kumar Singh
Associate Professor,
Specialty of Trauma Surgery
Apex Trauma Centre,
SGPGIMS, Lucknow

Sl.No 40

Noiseless suction machine

It should be High- Vacuum Electric Suction Machine.

It should be noiseless electric continuous suction with stainless steel cabinet.

It should have Suction Capacity 700 - 750 mm Hg Pump Type Noiseless Vacuum Pump Jar.

Glass capacity, over flow safety device, reusable filter, 3/8 size PVC tube 5 ft. Vacuum Gauge 2.0 inch. 0-760mm Hg calibration.

Power 200/240Volts, 1440 RPM, 50 Cycles, Single phase

Motor Capacity HP Crompton / GE Motor AC,DC Class A.

Good for different clinical / medical & surgical procedures.

Noiseless Electric Suction with noise level<50 dB at max. vacuum

It should have adopting oil free piston pump

Cleaning without pollution of oil and smoke and no need add oil to maintain daily

Safe no plus pressure during usingwith shock proof

No flow backwards pressure when the machine stops. So the liquid won't flow backwards

Complete plastic panels, hand-switch and foot-switchfor operating easily. Select negative pressure at will with no level for pressure adjustment, and overflowprotection mechanism.

There should not be large airspace (dead space) is between the suction cannula at the patient and the suction aggregate due to hose connections and secretion canister

There should be should besingle reusable canister system available in different canister sizes like 3 litre or 5 litre

No piping required – just plug & play

Changeover system for easy handling

Hydrophobic bacterial filter integrated in the canister

Canisters should be easy to mount and dismount

Easy to clean contours and surfaces

Suction performance 40 ± 5 l/min, max -91 kPa

Easy and quick changeover from a mobile to a table-top unit

Vacuum emission on the top and bottom side of the device

Operation with foot switch or foot regulator is possible

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
Lucknow-226014

Remarks-All the essential accessories required to complete the system should be provide by the bidder. The bidder should certify the completeness and functionality of the system in all respect.

Warranty: As per institute rules and regulations

Dr. Pawan Kumar Dhiman
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Neurosurgery Sl. No 09 (24)

Specifications for NEUROSURGERY Operation Room Light

The ceiling mounted Operation Room (OR) light must have double dome surgical light with the HD Camera with third arm mounted over the ceiling having a monitor screen for display and recording system of the display which should be fully compliant with the laminar air flow of the operation room with following specifications:

The operation room lights should have

- The Operation Room light must have TWO domeswith HD camera in each dome.
- Each light dome shall have sterilisable/autoclavable handle that can be used to adjust the direction and position of the dome.
- The operation room light domes should have free rotation of 360 degrees so that light head rotates around its own axis which ensures more freedom of movement.
- The Operation Room light must have additional arm (third arm) for holding 26" monitor in addition to the two arms.

Operation Room (OR) light dome specification details:

- The Operation Room light must have TWO domes having 1,20,000 Lux to 1,70,000Lux each with HD camera in each dome.
- The OR Lights should have Very homogeneous & Shadow free Litchfield with minimum of 500 overlapping beams to avoid head shadow in the operative field.
- The OR Light source should have low heat generation through cool, infrared-free white light alone without multicolour LED like blue or red etc.to avoid effect of coloured shadows ("Disco effect") of multi colour Light.
- The OR Light should have ambient light mode for better orientation in the OR when operating endoscopically.
- The OR Light should have one button over the dome to adjust the light intensity for better endoscopic work.
- The OR Light must have No mechanical parts inside the light head and should provide electronic adjustment of light field diameter.
- The OR Light head should be made of metal (like Aluminium, for lesser weight) and front panel should be of Glass. No Plastic material Should be used.
- The OR Light must produce large light emitting surface (no multi-spots) for better shadow Dilution.
- The OR light dome should 360° rail on the light head to provide maximum handling-comfort for nonsterile OR personal from all directions.
- The OR light domes should have Scratch and Shock resistant under glass (no plastic) to provide very long life quality and precise focus even after years.
- The OR light domes should have smooth contours/ no sharp contours,no screws for easy-to-clean design.
- The OR Light should have provision to provide wet cleaning of the dome to avoid dust and moist getting inside the dome.
- The OR Light dome shall be designed to avoid head shadows with free laminar flow compatibility maintaining maximum low turbulence in the operating area
- The OR Light should have adjustment of the light values at the light head or at the wall control or at both.

Dr. Pulak Sharma Associate Professor Speciality of Orthopaedic Apex Trauma Centre SGPGIMS, Lucknow-226014

Dr. Vaish Priya Associate Professor Dept. of Anesthesiology Apex Trauma Centre SGPGIMS, Lucknow-226014

Dr. Prabhudeep Vishwakarma Associate Professor Speciality of Oral Maxillofacial Surgery Apex Trauma Centre SGPGIMS, Lucknow-226014

Dr. Vivek Prakash Maurya Associate Professor Dept. of Neurosurgery Apex Trauma Centre SGPGIMS, Lucknow-226014

Dr. Rewan Kumar Verma

- The OR lights should have sync facility between both domes to control both the lights at any of the touch screen panel
- The OR light dome should have camera ready.

Main dome and Satellite dome shall have the following Technical details/ specifications with touch screen control on each dome:

Domes dimension (Diameter) to be in range of 630 mm – 800 mm.

Multi step programmable range of dimming from 10-100%.

Light Field diameter of 15- 30 cms in each dome with central focal point for easy focus of light.

Depth of illumination (L1 + L2) at 55cms to 125 cms

High CRI (Colour rendering index) of Ra=90 to 98 for representation of the image true to life with rich contrast

The OR light should have variable colour temperature from 3500K-5500K to provide adjustment of light to different tissue structures.

Number of LEDs per dome: >100 LEDs

Life duration of LEDs: 50,000 hrs or more

Lux Intensity (Light Intensity) of both Dome shall be direct 130,000 Lux and 160,000 lux in boost mode

Increase of temperature at the head <2 degree Celcius

Laminar flow index <28

The OR light domes should be ceiling mounted with US FDA, CE certified.

- The OR light shall have LED green ambient in both dome for optimal vision of Monitor during Minimal Invasive Surgery.
- Shadow dilution factor with one mask-60%, two masks-50%.
- Irradiance at max illuminance shall be 500 W/m2 or less.
- Shall have independent surgeon control for Brightness and Width of the light without looking to the light settings.
- Camera shall be Latest Wi-Fi HD Camera which should be inbuilt with in the Centre of the Light
- Dome and should not be extend outside the light dome to avoid hindrances to surgeon'shead.
- LED service life shall be minimum of 60,000Hrs.
- High efficiency coli meter collecting 85% emitted light.
- Illuminance should not drop during long surgery.
- Shall meet international quality & safety standards including European CE certified, IEC 60601, ISO 13485 CERTIFICATES.

Dr. Vanshpriya Associate Professor Dept. of Anaesthesiology Apex Trauma Centre SGPGIMS, Lucknow-226014

Dr. Pawan Kumar Verma Associate Professor

Dr. Ved Prakash Maurya Associate Professor Dept. of Neurosurgery Apex Trauma Centre SGPGIMS, Lucknow

- Should have additional arm (third arm) for holding 26" monitor in addition to the two arms for the light heads (Supplier to Specify the extended arm length of each arm), all the arms should be mounted on single suspension system.

  Monitor should be 26" medical grade with Full HD resolution.

- **Camera specification:**

Specifications of HD Camera in OR Light

In light camera should have outstanding 20x Optical zoom capability,distinct HD images that can be viewed wherever the surgical image is required. Fromrecording to broadcasting a procedure.

Technical Specifications of Camera	
Sensor	1/3" CMOS
Number of Pixel	~ 2.48 MP or more
Video standard	1080p
Image refresh rate	50/60 Hz
Format	16:09
Shutter speed	1/30 tp 1/30000 s
Signal to noise ratio	>50 dB
Optical zoom (focal ratio)	x10
Digital zoom	X6
Total zoom	X60
Focal length (wide angle to telephoto)	f=5.1to51mm
Anti-flicker	Yes
Focus	Auto / focus freeze
White balance	Auto/indoor/outdoor/manual

Dr. Kuldeep Vishwakarma
Associate Professor
Speciality of Oral Maxillofacial Surgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Vinod Prakash Maurya
Associate Professor
Dept. of Neurosurgery
Trauma Centre
Lucknow-226014

Contrast enhancement	Yes (3 level)
Image freeze	Yes
Transmission type	Wireless

High-Definition Medical Grade Recording specs

High Definition Recording system should be designed for quick set up and ease of usewith robust list of features and capabilities like auto sensing video connections and automatic video resolution detection. Should also have the following features-

- Should have provision to record the images and video sequences in OT.
- Should be compliant to medical standards.
- It should support wide range of recording resolutions.
- 1920 x 1080 (30Hz / 29.97Hz) to 640 x 480: Undiluted recording resolution.
- It should have multiple HD & SD inputs/outputs .
- Should have still image recording format of jpeg and video format of MPEG-4.
- Display should be at least 3.5" LCD.
- It should support recordable devices like USB Flash Drive,USB Hard Drive,Internal hard drive of 500 GB to 1 TB.
- Should have a weight no more than 3 Kg.
- Should be US FDA approved Class-1 device.

Dr. Pulak Sharma
Associate Professor
Speciality of Orthopaedic
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Vansh Priya
Associate Professor
Dept. of Anaesthaciology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Pradeep Vishwa
Associate Professor
Speciality of Oral Maxillofacial Surgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ved Prakash Maurya
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Trauma Surgery (ATC) Sl. No. 25

58

Technical specification Patient Emergency Trolley

1. Overall size: 1910 mm L x 710 mm W x 670 mm Min. H. and 920 mm Max. H. (± 10 mm Engineering Variation)

2. Mattress Plotform : 1785 mm L x 560 mm W.

3. Stretcher Dimension Appox. : 1830 mm L x 555 mm W. (± 10 mm Engineering Variation)

4. Height adjusted by foot operated high quality hydraulic pump. The pump shaft actuation stroke length is 140 mm with push force 10KN at 270 bars. No of stroke required to acheive maximum height is 25 nos.

5. Trendelenberg & Reverse Trendelenberg assisted by two gas spring for easy , smooth and jerk free action.

6. Trendelenberg - 18^0 ± 1°

7. Reverse Trendelenberg - 6^0 ± 1°

8. Removable Two section stretcher supported on MS tubular frame size 25.4 mm x 2 mm (14 G).

9. Top is made from decorative laminated (compact) sheet of 8 mm thick.

10. Backrest is raised by ratchet mechanism having five different position as 25^0, 35^0 , 45^0 , 55^0 & 65^0

11. Ratchet mechanism is consists of SS 304 rod having diamater 12 mm and flat size 275 mm x 6 mm.

12. X ray casstte holder in MS "L" channel size 25 mm x 25 mm x 2.0 mm (14 G) with aluminium channel 22 mm x 14 mm x 2.6 mm thick

Dr. Amit Kumar Singh
Associate Professor,
Dept. of Trauma Surgery
Trauma Centre,

13. Synthetic rubber cover on pushing handles having rod size 12 mm attached to MS frame made from 60 mm x 30 mm x 1.2 mm (18 G).

14. Four corner rubber buffers of 135mm diameter.

15. MS tray having size : 370 mm x 260 mm made from 1.2 mm (18 G) CRCA sheet.

16. Mild steel tubular frame work made of 60 mm x 30 mm x 1.6 mm (16 G) supported by MS tube 25.4 mm x 1.2 mm (18 G) and linkages made from flats thickness 10 mm. This frame is mounted on four 125 mm dia. castor with synthetic body two with brakes and two without brakes.

17. Swing away type Railing suitable for Stretcher on Trolley (pair) with S.S. tubular frame. The size of Railing 1180 mm L x 350 mm H made from SS tube diameter 19 mm 1.2 mm (18 G) & 15.8 mm x 1.2 mm (18 G) and MS bracket made from MS Flat 6.0 mm thick. The railing height (Effective Height) above stretcher top & without mattress is 240 mm.

18. Safe working load of 165 kgs and patient load bearing capacity of 135 kgs.

19. Supplied in Semi SKD condition.

20. Supplied with M.S storage tray.

21. M.S. tubular parts, linkages, flats are to be In-house, pretreated and Epoxy powder coated with coating thickness 50 to 100 microns.

22. All Process Parameters to be as per documented IMS Procedures for Quality Assurance (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 13485:2016 Quality Management Systems).

23. Accessories:

24. Safety belts (1752E).

Dr. Ashish Kumar Singh
Assistant Professor,
Department of Trauma Surgery
Apex Trauma Centre,

25. Rexine Covered 50mm thick Mattress made from PU foam having 40 density with Two sections (1752D). (± 5 mm)

26. Swing away type Railing suitable for Stretcher on Trolley (pair) with S.S. tubular frame.(1754)

27. Telescopic I.V. Rod with 2 Hooks provision at four locations.

28. Oxygen Cylinder Cage With Epoxy powder coated.

29. M.S. Storage Tray.

30. Product should be FDA OR CEA APPROVED

Dr Amit Kumar Singh

Associate Professor

Apex Trauma Centre,
SGPGIMS, Lucknow.

and mixing PCR reactions.

Sl. No. 58

7. PCRMachine(ThermalCycler)

a. **WellCapacity:**Accommodatesastandard96-wellplate,acommonconfigurationfor DNA amplification in high-throughput applications.

b. **GradientBlock:**Equippedwithagradientblockthatenablessimultaneoustestingof multiple annealing temperatures, which is essential for optimizing PCR conditions.

c. **Heated Lid:** Prevents condensation by maintaining the lid at a higher temperature than thesamples,whichhelpspreventtheformationofdropletsthatcouldinterferewiththe PCR process.

d. **TouchscreenInterface:**Featuresaneasy-to-usetouchscreeninterfaceforeasy programming and real-time monitoring of the PCR process.

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

e. **TemperatureUniformity:**Ensuresaccurateandconsistenttemperaturecyclingwitha uniformity tolerance of ±0.3°C, which is crucial for reproducible PCR amplification.

f. **Applications:** PCR is a fundamental technique for amplifying DNA, which is crucial in variousmolecularbiologytechniqueslikegenecloning,sequencing,anddiagnostics.The thermal cycler ensures that reactions proceed optimally, improving the reliability of results.

Lab Medicine (ATC)

Sl.No. 1968

Specification for Phlebotomy Chair

Purpose

Phlebotomy chair for collection of patients' blood sample for testing

Technical specifications

Latest model to be quoted

Framework : Framework made of Stainless Steel.

Arm rest: on both sides, adjustable by serrated blocks/lock mechanism

Height: adjustable height via cylinder gas jack.

Lift up : for entry of patient and angle adjustment

Head Rest thickness : 4 inches

Upholstery Comfortable stain resistant and washable upholstery with good density.

Leg rest : Adjusting non slippery leg rest via gas jack, flexible from 0 degrees to 90 degrees.

Load capacity: dynamic 130kg

Accessories: Should be quoted with all accessories

User/ Technical/Maintenance Manual: Should be supplied in English

Maintenance support: As per manufacturer documentation in service/technical manual

Training: Comprehensive training till familiar with the system

Demonstration: Pre-purchase demonstration if required

Approval: System and reagents should be CE /ISO approved

List of users and performance certificate from users especially from government hospitals.

AMC, CMC, warranty and other rules and regulations applicable as per rules of the institute.

Dr. Awale Rupali Bhalchandra
Associate Professor
Speciality of Laboratory Medicine
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Orthopaedic- Sl. No. 12

(78) 79

Reamer, Irrigator and Aspirator for Bone Graft Harvesting

1. Company should be at least in its 5 years of operations in India.
2. Bidder must enclose original literatures & technical data.
3. Physical demo should be arranged at the time of requirement.
4. Instruments quality should meet the international standard.
5. Company should have European CE certificates with Notify Body Identification Number & USFDA certificates of international standard.
6. Company should provide material certificates.
7. The Principal company should have registered office in India and approved by Government of India by same name.
8. warranty for 1 years

Specification

- The system should be able to perform the functions of - Reaming, Irrigation and Aspiration through its instruments and external outputs.
- The system should have a driver shaft to house the reamers
- The system should have a Sterile tube assembly to fit to the driver shafts
- The driver shaft should have a Sterile Elastomeric seal which prevents flow of irrigation fluid into drive unit
- The system should have an elongation tube which should be compatible to the Depth Guage to determine the length of the driver shaft to be used
- Sterile reamer heads should be available from 12mm – 15mm in increments of 0.5mm
- A Sterile Locking Clip should be available to secure attachment between drive shaft and tube assembly
- A sterile graft filter should be available to collect finely morselized bone chips and marrow.
- The graft filter should have a capacity of 100 cc with Graduations for estimating volume and Plunger for easy removal of graft
- The system should contain irrigation tubes with the following features
    - Spike on irrigation tube to connect with irrigation source
    - Clamp on irrigation tube to control flow of irrigation fluid
    - Aspiration tube to connect to suction canister
- The system should be capable of reaming with the help of reamer heads and at the same time perform the Irrigation and Aspiration.

Dr. Pulak Sharma
Associate Professor
Speciality of Orthopaedic

77 78

- The driver shaft should give suction to harvest autograft
- The driver shaft should supply the irrigation fluid through its shaft

Description	Qty
RIA Drive Shaft, length 520 mm	1
RIA Tube Assembly, for RIA Drive Shaft minimum length 520 mm, sterile	4
Seal for RIA Drive Shaft, sterile, pack of 2 units	4
RIA Medullary Reamer Head Ø 12.0-12.5 mm, sterile	8
Locking Clip for RIA, sterile	4
Graft Filter for RIA, sterile	1
DRILL BIT Ø12 CANN L190 3FLUTE	1
REAMING ROD Ø2.5 SHORT L950	5
Guide Wire 3.2 mm	2
DEPTH GAUGE F/NAILS	1
ELONGATION TUBE F/REAMRODS F/DEPTH GAUGE	1
Universal Chuck with T-Handle	1
TISSUE PROTECTOR	1
Customized Box	1

Dr. Fulak Sharma
Associate Professor
Speciality of Orthopaedic
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Sl. No. 57

9. **RefrigeratedCentrifuge**

a. **MaximumSpeed:**Thecentrifugeoperatesatupto15,000rpm,allowingforhigh-speed separations of biological samples.

b. **RotorCompatibility:**Supportsbothswingingandfixed-anglerotors,whichgivesusers flexibility depending on the type of sample and separation required.

c. **TemperatureControl:**Capableofmaintainingtemperaturesfrom-10°Cto+40°C,which is critical for preserving temperature-sensitive samples like RNA, proteins, and other biomolecules.

d. **SafetyFeatures:**Includesimbalancedetectionandalidlocktoensurethecentrifuge operates safely without risk of sample loss or damage.

Dr. Ashutosh Kumar
M.S., M.Ch.

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

e. **Applications:**Idealformolecularbiologyapplicationsthatrequiretheseparationof different components, such as DNA/RNA purification, protein extraction, or cell harvesting.

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Anesthesia (ATC) OT Sl. No-34 (43)

Specification of Sequential Electric Nerve Stimulator device

Should have following parameter:

1. Battery: 9V (alkaline); Power consumption: 6 mA (* mA max)
2. Stimulation current: 5 mA max (0-12 k) ; Stimulation Voltage: 95V
3. Stimulation frequency: 1 Hz / 2 Hz; Allowable load impedance: 0 k - 12 k
4. Stimulus duration: 1.0 ms - 0.5 ms - 0.3 ms - 0.1 ms - 0.05 ms
5. Sense function stimulation duration- SENSe (0.10 ms - 0.10 ms - 0.15 ms to 1.0 ms)
6. Current measuring accuracy: +/- 0.02 mA
7. Impedance measuring range: 1 KOhms - 90 KOhms for target stimulation current > 0.5 mA
8. Weight: 250 g (approx.)
9. Should have setting:

Max Current: 5 mA

Stimulus duration: 0.1 ms

Stimulation frequency: 2 Hz

Automatic switch off: 20 min

Current threshold: Off

Language: English

10. Should have the enlarged full graphics LC display to give all necessary information at a glance.
11. Should have the following information to display on the stimulation screen at all times:

- Stimulus amplitude in mA (large digits)
- Current range
- Stimulus duration - 0.1 ms
- Stimulus frequency in Hz
- Load impedance in kohms

12. Should have- Sequential Electrical Nerve Stimulation (SENSe) - The nerve stimulator should have a feature the option of selecting a frequency of either 1 Hz, 2 Hz or 3 Hz for SENSe and a stimulus duration of 0.05 ms - 0.10 ms - 0.30 ms - 0.50 ms - 1.00 ms.

Dr. Rafat Shamim
Associate Professor
Dept. of Anaesthesiology
Centre

13. Should have -PEN for percutaneous nerve mapping to help to pre-assess the puncture site.

Should be supplied complete with following Accessories (MUST)

1. Single Shot Echogenic Plexus Needles having 30-degree bevel & 50 cm long DEHP free injection tubing. Size-20 G-100 / 150 mm and 22 G- 35 / 50 mm- 25 Each Size.
2. Continuous Plexus set consisting of a 20 degree back cut echogenic needle 18G with X pattern engraved on first 20mm from tip, a double layer polyamide & polyurethane 50 mm catheter with three pairs of lasers drilled holes tapered tip design, 0.45 x 0.85 x400 mm, provision of single bolus shot with extension tubing, along with snap cap catheter connector, a 0.2 micron filter & 5 ml syringe—10 Units.
3. Continuous Plexus set consisting of a 20 degree back cut needle 18G with X pattern engraved on first 20mm from tip, a double layer polyamide & polyurethane 100 mm catheter with three pairs of laser drilled holes tapered tip design, 0.45 x 0.85 x 1000 mm, provision of single bolus shot with extension tubing, along with snap cap catheter connector, a 0.2 micron filter & 5 ml syringe- 10 units.

Dr. Rafat Shamim
Associate Professor
Dept. of Anaesthesiology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Sl. No. 56

8. Spectrophotometer(MicrovolumeorUV-Vis)

a. **WavelengthRange:**Thespectrophotometerspansabroadwavelengthrangeof190to 1100 nm, which covers both ultraviolet (UV) and visible light regions, allowing for a varietyof applications.

b. **MicrovolumeAnalysis:** Capableofanalyzingaslittleas1–2µLofsample,makingitideal for high-sensitivity applications like quantifying small amounts of nucleic acids or proteins.

c. **Software:**Comeswithpre-installedsoftwareforautomatedquantificationofDNA,RNA, and proteins, providing quick and accurate results.

d. **DataExport:**OffersdataexportfunctionalitythroughUSBorWi-Fi,whichfacilitates seamless integration with data analysis tools and record-keeping.

e. **Applications:**Thisdeviceisessentialfordeterminingtheconcentrationandpurityof nucleicacidsandproteins,whichiscriticalforapplicationslikePCR,sequencing,and transfection.

Neurosurgery- Sl. No- 06

Specification surgical chair

- Hydraulic height adjustment.
- There should be 3-Spindle Base: Provides ideal control and pedal access without getting in the way.
- Supportive Seat must be Dual-density foam and an adjustable backrest offer maximum support.
- Stable, yet mobile design.
- Front end locking system.
- Thermoformed plastic hood.
- Fully adjustable back and armrests (optional).
- Optional padded armrests allow versatile positioning and stability.
- Weight Capacity: 130-140kg.
- Height Range:
  - High: 28- 32 inch.
  - Low: 18-22 inches.
- Accessories-
  - Compatible Stool Arm Rests (Pair).
- AMC/ CMC as per institute rules and regulations

Dr. Kamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosugery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Ashutosh Kumar
M.S., M.Ch.
Assistant Professor
Department of Neurosurgery
S.G.P.G.I.M.S., Lucknow

Oral & Maxillofacial Surgery Sl. No: 15 (73)

TMJ and Ramus condylar unit Arthroscopy instruments set:

Approximate cost: 60 lacs

Specifications:

1. Straight Forward Telescope 0°, diameter 1.9mm, length 670mm to 700mm, autoclavable, fiber optic light transmission incorporated, color code GREEN, with locking mechanism - HD 1.9MM X 0° ARTHROSCOPE: 1
2. High Flow Arthroscope Sheath/Cannula, diameter 2.4mm to 2.6mm, working length 40mm, for use with Telescope 0°with green color code - CANNULA SINGLE ROTATING STOPCOCK: 1
3. Obturator, sharp, for use with High flow arthroscope sheath/cannula dia 2.4mm to 2.6mm - SHARP: 1
4. Obturator, blunt, for use with High flow arthroscope sheath/cannula dia 2.4mm to 2.6mm - BLUNT: 1
5. Forward Oblique Telescope 30°, diameter 1.9mm, length 670mm to 700mm, autoclavable, Fiber optic light transmission incorporated, color code RED, with locking mechanism - HD 1.9MM X 30° ARTHROSCOPE: 1
6. High Flow Arthroscope Sheath/Cannula, diameter 2.6mm to 2.8mm, working length 40mm, for use with Telescope 30° - CANNULA SINGLE ROTATING STOPCOCK: 1
7. Obturator, sharp, for use with High flow arthroscope sheath/cannula dia 2.6mm to 2.8mm - SHARP : 1
8. Obturator, blunt, for use with High flow arthroscope sheath/cannula dia 2.6mm to 2.8mm - BLUNT : 1
9. Forward Oblique Telescope 30°, diameter 2.3/2.4mm, length 110mm, autoclavable, Fiber optic light transmission incorporated, with locking mechanism - 2.3/2.4 mm X 30° ARTHROSCOPE: 1
10. High Flow Arthroscope Sheath/Cannula, diameter 3.0mm to 3.2mm, for use with Telescope 30° - CANNULA 1 ROTATING STOPCOCK:1
11. Sharp Obturator for use with high flow arthroscope sheath/cannula dia 3.0mm to 3.2mm – SHARP :1
12. Blunt Obturator for use with high flow arthroscope sheath/cannula dia 3.0mm to 3.2mm – BLUNT:1
13. Forward Oblique Telescope 30°, diameter 3.9/4.0mm, length 175-180 mm, autoclavable, Fiber optic light transmission incorporated, with locking mechanism – 3.9/4.0MM X 30° ARTHROSCOPE: 1
14. High Flow Arthroscope Sheath/Cannula, diameter 5.0mm to 5.5mm, for use with Telescope 30° - CANNULA TWO ROTATING STOPCOCK: 1
15. Sharp Obturator for use with high flow arthroscope sheath/cannula dia 5.0mm to 5.5mm – SHARP:1
16. Blunt Obturator for use with high flow arthroscope sheath/cannula dia 5.0mm to 5.5mm – BLUNT:1

29/4/2025

Dr Kuldeep Vishwakarma
Associate Professor
Dept. of Oral Maxillofacial Surgery

17. Sterilizing Container for Arthroscopes (Qty 4) and Sterilizing Container for Instruments (Qty 2)
18. Grasping Forceps, diameter 2.0mm, working length 10cm, single-action jaw: 1
19. Basket Forceps, diameter 2.0mm, working length 11cm: 1
20. Cup Forceps, working length 10cm: 1
21. Straight Probe, diameter 2.0mm, working length 10cm: 1
22. Palpation Hook, graduated, diameter 1.5mm, length of hook 1mm, working length 7.5 cm: 1
23. Scissors single action jaws upbitting, 2.0mm diameter,13cm length: 1
24. Scissors, short, upwards cutting, 13cm length: 1
25. Biopsy Forceps, single action jaws, diameter 2.0mm, working length 11cm:1
26. Rongeur Punch, diameter 1.5mm, straight jaw, straight shaft, axial length 85mm: 1
27. Changing Rod, graduated, double-ended pointed/blunt, diameter 2mm, length 15cm:1
28. Should be CE(European)/ USFDA certified.

29/09/2025

Dr Kuldeep Sharma
Associate Professor
Speciality of Oral Maxillofacial Surgery
Apex Trauma Centre
SGPGIMS, Lucknow- 226014

- Compatible with GE USG Model Venue go

32 PMR (ATC) Sl.No. 32

4. Ultra sound therapy unit 01

Specifications :

ULTRASOUND THERAPY UNIT (SINGLE HEAD)

- Output mode continuous and pulsed
- Ultrasound intensity : Continuous: 2 W/cm2, Pulsed: 3 W/cm2
- Pulse frequency 16, 48 and 100hz
- Output frequency 1 MHz and 3 MHz
- Timer 0-30 minutes.
- Number of US probes: 02
- Probe head diameter: Large 37.5mm and small 16mm
- BNR US Probe head (IEC Standards): [Large] 1 MHz: 3.0, 3 MHz: 2.4 [Small] 1 MHz: 2.9, 3 MHz: 2.4
- Probe cable length 2 more than 2 m
- Two digital display meters indicate the output in w/cm with coloured LCD Touch screen
- Patient safety circuit, USFDA and or European CE approved

Dr. Siddharth Rai
Associate Professor
Speciality of Physical Medicine & Rehabilitation
Trauma Centre

Lab Medicine (ATC) Sl. No. 20

(69)

Vein Finder Specifications

Purpose

For visualization of venous vascular in patients with difficult I/V access

Technical specification

Latest model to be quoted

Should be quoted with all accessories

Weight of device: Less than 500 grams will be preferred

Should be able to view in persons with excessive subcutaneous fat, all skin tones.

Source of light: Wavelength: 700-980nm

Safe medical cold light for operator use as well as patient

Sleep function: Should have sleep function.

Suitable for use: Laboratory, Paediatrics, emergency room.

Image: Resolution" 850x480 pixels or better with high accuracy.

Should deliver real time image regardless of patient movement.

Imaging mode: blue, white, red and green.

Brightness: Adjustable with upto 5 options for brightness.

Projection distance: 25-35cm

Battery: Rechargeable polymer lithium battery with battery life of upto 2 hrs after single charging cycle.

Cleaning: Should be simple using alcohol based disinfectant

Carrying case: Sturdy material and crack proof.

Operation mode: Handheld as well as hands free operation

For hands free operation should be easily inserted in the stand.

Stand: Should be sturdy with wheels and have flex arm for adjustment

Calibration: Should not be required.

Adapter, charging cable to be provided

User/ Technical/Maintenance Manual: Should be supplied in English

Maintenance support: As per manufacturer documentation in service/technical manual

Training: Comprehensive training till familiar with the system

Demonstration: Pre-purchase demonstration mandatory

Approval: System and reagents should be CE or ISO or US FDA approved.

List of users and performance certificate from users especially from government hospitals.

Warranty, AMC/CMC as per Institutes rules.

Dr. Awale Rupali Bholchandra

Anesthesia (ATC) OT Sl. No. 33 46

Specifications for Video Laryngoscope for Adult & Paediatric with accessories

Video laryngoscope required with video illumination to visualize and document the operational area for difficult intubation for both adult & paediatric patient on video monitor. It should consist of following features:

Video processing &Monitor

- Monitor Screen size greater than 8 inch for display with touch screen to control features with HDMI output for connecting to a big screen which can display picture simultaneously on both screens.
- Monitor should be chargeable, to be supplied with charger and should have facility to be used while charging.
- Monitor resolution should be minimum 1920 X1200 pixels in 16:9 format.
- It should have integrated video processing & Integrated recording of Video & still images should be possible on data card or USB drive with JPEG and MPEG format which can be easily transferred to the computer/laptop. Documented videos & still images should be easily recalled on the monitor.
- Monitor Should have a facility to connect flexible videoscope directly without any special coupler or accessory.
- Monitor should be splash proof according to IP 54 and should be shock resistant. Monitor should have lithium-Ion rechargeable batteries and run for at least 100 minutes when fully charged
- Soft bag from same manufacturer should be supplied to place the monitor and system can also be operated without taking monitor out from the bag.
- Adult and Paediatric angulated Magill forceps from same manufacturer to be provided for foreign body removal and for assisting nasal intubation while using blades
- Monitor should be used during Charging also and it should have time machine mode.

Video Blades for difficult intubation:

- Blades and connection cable should be fully immersible in disinfecting solution.
- Blades can be sterilized using plasma sterilization system . Thermal disinfection up to 93 degrees and Chemo-thermal disinfection up to 65 degrees should be permissible.
- Required standard Macintosh blade sizes #0, #3, #4 and hyper angulated adult blade with titanium handles with integrated camera chip and LED light illumination. (total no of blades: 4)
- Blades should have anti fogging mechanism.
- Appropriate Stylet sizes should be supplied.
- Tray / storage basket for laryngoscope blades should be provided from same manufacturer.

Dr. Rafat Shamim
Associate Professor
Dept. of Anaesthesiology
Trauma Centre
-226014

Dr. Pratap Singh Bais
Associate Professor,
of Anaesthesiology
Centre,

- All Video laryngoscope blades &its Video processing system should be from same manufacturer for total system compatibility for optimal system performance.
- Demonstration of system is must before finalization of opening finance bids
- USFDA/European CE certificate
- Two extra connection cable between video laryngoscopy blade and monitor to be provided with device.

Dr. Rafat Shamim
Associate Professor
Dept. of Anaesthesiology
Apex Trauma Centre
SGPGIMS, Lucknow-226014

Dr. Prateek Singh Bais
Associate Professor,
Department of Anaesthesiology
Apex Trauma Centre,
SGPGIMS, Lucknow

Sl.No-03

TECHNICAl SPECIFICATIONS:

Sr. No.	Technical Specifications Video Laryngoscope.
1.	VideoLaryngoscopeforintubationsofdifficultairways.
2.	Shouldgiveclearvisualizationofglottisopeningwithoutmanipulationofneck.
3.	Shouldhaveintegratedhighresolutionminiaturecameraatbladetiptoprovidereal timeviewoftubeplacement.
4.	ShouldbesuppliedwithstandardMacintosh,Millerbladesandspecialcurvedblade s withtitaniumhandleswith integratedcamerachipandLEDlight illumination.
5.	System shouldbechargeableandshouldhavefacilitytobeusedwhilecharging.
6.	Bladesandconnectioncableshouldbefullyimmiscibleindisinfectingsolution.
	Monitor
1.	Anti-reflectivescreenofsize8to12inchwithtouchscreenfeatures.
2.	HDMIoutputforconnectingtoabigscreenwhichcandisplaypicturesimultaneousl y on both screens.
3.	Monitorresolutionshouldbeminimum1920X1200pixelsin16:9format.
4.	Integrated recording of Video& still images should be possible on data card or USB drive with JPEG and MPEG format.
5.	Documentedvideos&stillimagesshouldbeeasilyrecalledonthemonitorandcan beeasilytransferredtothecomputer/laptop.
6.	Monitorshouldhavetwoportstoconnecttwovideolaryngoscopebladesatonetime andpicturecanbeswappedusingtouchscreen.
7.	MonitorshouldhavePicture-in-Picture&side-by-sidemodetoviewimagesfrom2 differentbladesorflexiblevideoscopes.
8.	Monitorshouldbesplashproofaccordingto IP54andshouldbeshockresistant.
9.	Monitorshouldhavelithium-Ionrechargeablebatteriesandrunforatleast90-100 minuteswhenfullycharged.
	ReusableBlades:
1.	Bladesshouldhaveantifoggingmechanism.
2.	Shouldbesuppliedwithfollowingreusable blades.
	a)Macintosh blades withmetalfinishofsize0,2,3 &4withintegratedcamerachip andLEDlightilluminationproducingresolutionofminimum800pforbetter

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery

	imagequality-**onesetofblades(size0,2,3&4)tobesuppliedwitheach monitor**
	b)Miller blades with metal finish of size 0, 1 with integrated camera chip and LED lightilluminationproducingresolutionofminimum800pforbetterimagequality-**ONLYONESETOFBLADES(size0,1)tobesupplied.**
	c)SpecialangulatedAdultBladeandPaediatricBladefordifficultintubation-**one setofbladestobesuppliedwitheachmonitor**
	Others:
1.	Accessorieslikeprotectioncapforblades,trayforcleaningandsterilizationoffrom samemanufacturershouldbeprovided.
2.	ShouldbesuppliedwithAdultandPaediatricangulatedMagillforceps,andstylet from same manufacturer for assisting oral/nasal intubations and difficult intubations.
3.	ShouldbesuppliedwithMobilestand/trolleytohangmonitorandtrayfor laryngoscopebladesfromsamemanufacturer
4.	ThesystemshouldbeUSFDA/EuropeanCEapprovedorEquivalentIndian Standards.
5.	Thecompanyshouldhaveservicestationin Delhi/NCR.
6.	Demonstrationofproductismandatory
7.	Consumables:Listofconsumablesshouldbeprovided.Thecostofallconsumable itemsshouldbequotedseparatelyanditshouldbefixedfor10yearsfromthedate of procurement of equipment.
8.	Accessories:Listofallaccessoriesshouldbeprovided.
9.	Guarantee&Warrantee:TheCompanyshouldprovide5yearscomprehensivewarrant eefollowedby5yearsCAMC(withsparesandfreelabour).Ifanypartofthe equipmentisnotcoveredunderwarranty,thevendormustprovideadvance information.
10.	If required, Physical demonstration of quoted model/equipment would be mandatoryatAIIMSpremiseswithin7dayspriornotice/intimation,failingwhich,the rightwill bereservedwithTSECtorejectbidoutrightlywithoutanyfurtherclarification.

Bidder smustuploadthefollowing document sin theTechnical bid:

1. TenderacceptanceForm(asperbidformat)
2. ManufacturersAuthorizationCertificate(Asperbidformat)
3. Countryof origin ofquoted product.
4. Product brochure
5. Technical bid(withMake,Modelanddetailedscopeofsupply)
6. TechnicalComplianceStatement(intabularform)
7. ProductCertifications.
8. Completeterms&conditions(Includingwarranty,CAMC,bankdetails,modeof shipment, taxes, etc.)
9. DetailsofServiceCentre,(CompleteAddress)
10. BiddersRegistrationCertificate,GSTcertificate,druglicense(ifapplicable).
11. Pricebid(withcompletescopeofsupply,pricebreak-upofallitems),completelistof accessories,consumablesforquotedproduct mustbeuploadedinpdfatfinancialbid (space given in the GeM Portal).The quoted rates will remain valid for 10 years (warranty&CAMCperiod).
12. Biddersmustquoteratesofallspares,accessories,consumables(withbreak-upprice ofeachitem)separately(inPDF)andthequotedrateswillremainvalidfor10years (warranty&CAMCperiod)forfuturepurchasesasandwhenrequiredbasis.
13. Incaseanyitem(spares,accessories,consumables)requiredtorunthesystemand firmdidnotquotedratesofthoseitemsintheirpricebid,thesamemandatorilywill besuppliedbythefirmsatFreeofCostwithoutanycondition.

Kumar Ver

14. Anymodification/corrigenduminthebidconditions/specificationswillbeuploaded at'BuyerspecificATCdocuments.Biddersmaykindlyseebeforeuploadingtheirbid.

Dr. Pawan Kumar Verma
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

...cytes, DNA fingerprinting, and RNA integrity testing.

Sl. No. 53

4. VortexMixer

a. **VariableSpeedControl:** Thevortexmixeroffersaspeedrangeupto3,200rpm,allowing for fast and efficient mixing. The adjustable speed is crucial for customizing the mixing based on sample viscosity or experimental requirements.

b. **Operating Modes:** It supports both touch-activated mode, where the user presses the sampletostartmixing,andcontinuousmode,wheremixingoccursaslongastheunitis running.

c. **Stability:** Therubberbaseprovidesastableplatformthatreducesvibrationsduring mixing, ensuring safety and preventing sample spillage.

Dr. Ashutosh Kumar
M.S., M.Ch.
Professor

Dr. Hamlesh Singh Bhaisora
Associate Professor
Dept. of Neurosurgery
Apex Trauma Centre
SGPGIMS, Lucknow-226014

d. **Compatibility:** It can be used with various types of tubes, including standard microcentrifuge tubes, PCR tubes, and other small-volume vessels, making it versatile for different lab applications.

e. **Applications:** This device is indispensable for ensuring thorough homogenization of samples before procedures like centrifugation or thermal cycling. It's used for protocols that require consistent mixing, such as preparation of reagents, samples suspensions, and cellular lysates.

Sl.No.54

5. WaterBath/DryHeatingBlock

a. **TemperatureControl:**Offersprecisedigitalcontroloftemperaturesfromambient temperatureupto100°C,enablingaccurateandreproducibleheatingofsamples.

b. **Interchangeable Blocks:** Designed with interchangeable aluminumblocksthat can accommodatevariousmicrotubes(0.5mL,1.5mL,2.0mL),makingitadaptablefor different tube sizes commonly used in molecular biology.

c. **TimerandProtection:**Includesatimertosetincubationperiodsandoverheating protection to prevent damage to the samples or the unit itself.

d. **Accuracy:**Maintainsatemperatureaccuracyof±0.5°C,ensuringprecisethermal conditions required for enzyme-based reactions such as DNA ligation or protein denaturation.

e. **Applications:**Idealforincubatingsamplesatacontrolledtemperatureforprocedures like heat shock in bacterial transformation, DNA denaturation, protein refolding, and various enzymatic reactions requiring precise temperature control.