

INSTRUMENTS FOR ENT

INSTRUMENT	SPECIFICATIONS	QTY.
Nasal Speculum	Thudicum 7cm, small, medium, large	6
Laryngeal Mirrors	With handle 1/2/3/4/5	8
Nasopharyngeal Mirrors	With handle 1/2/3	2
Aural Speculum	Hartman 3/4/5/6mm black	4
Ear Suction	Microsuction cannula – varhoeven- different sizes	8
Nasal Suction	Suction cannula 2.5mm/3mm cvd 15cm eicken	6
Siegles Pneumatic Speculum		2
Tuning Fork (512 Hz)	Gardiner brown with base	3
Otoscope	3.5 V, halogen bulb with charger	6
Nasal Packing Forceps	Tilleys fine 55mm, 12.5 cm/5"	3
Bulls Lamp	halogen light	2
Head Mirror		3
ENT Examination Chair	Backward and forward, up and down, motorized with rotating facility	2
Jobson Home Probe		2
Bipod Plate	Measuring plate for bipod 40 cm/16"	1
Tonsil Holding Forceps	Denis brown ,large 20cm/8"	1
Tonsil Scissors	18cm /7"	1
Freer Elevator Sharp	D/E sharp, blunt edge broad, 20 cm/8"	1
*Rigid Nasal Endoscope	4mm, wide angle, 0 degree German, HD, Autoclavable	1
*Light Source	Cold light source, twin bulb, twin fan, xenon 175mm with FO cable, diameter 3.5 mm L- 180 cm automatic switch in spare lamps. Power supply 100/120/230/240, 50/60 hz, 400 A mains cord	1
Anterior Commissure Laryngoscope	medium, universal size, triangular spatula shaped, lateral outer channels for fo light carrier and suction, with FO light carrier for laryngoscope	1
Negus Laryngoscope	operating laryngoscope for children, 15 cm with FO light carrier for distal illumination and suction tube to remove vapour	1
Biopsy Forceps	Forceps, straight, with 2 mm cupped jaws, sheath conically reinforced from distal to proximal end, working length 21 cm	1
Foreign Body Removal Forceps	Foreign body grasping forceps, Alligator Grasping Forceps, heavy model, single action jaws, working length 23 cm	1
Laryngeal Suctions	2mm, 4mm, 6mm, 23 cm	3
*Kleinsassers Laryngoscope	Adult, 18cm large or medium, with FO light	1
*Microlaryngeal Forceps	23 cm, serrated str horizontal	1
* Microlaryngeal Scissors	Straight, 23cm	1
Wullstien Ear Needle	str,16.5cm	1
Round Knife	16 cm, 3.5mm x 2.5mm	1
Microelevator For Ear	16 cm, fine straight.	1
*Graft Knife	Sickle knife 6mm, extra fine, slightly curved 18 cm	1

*Graft Press		1
*Endaural Retractor	lempert with blades	1
*Electric Drill (Motor, Handpiece And Burrs)	40000 rpm, high sp, surgical straight and angled handpeice, forward and reverse cutting with inbuilt irrigation	1
Set of Burrs	Cutting 10 set, TC	1
	Diamond set of 10	1
* Malleus Head Nipper	House dieter .upward.matt 8cm extra delicate, 0.8mm width	1
*Pick-Straight	Str.matt.16 cm, 90 degree 0.5mm	1
Angled	Pick, long cvd matt,16 cm , 45 degree 0.4mm	1
*Perforator	0.3 0.6mm, 16 cm	1
Prosthesis Crimper		1
*Measuring Rod	House, marker pins at 3, 4, 5 length 16cm	1
Oesophagosopes	50cm 12x16cm robert jesberg oval tube	1
	30cm10x12	1
	27cm, 8x12	1
Biopsy Forceps	broncho- oesophagoscope forceps single action jaws, sheath diameter 2.5 mm, width 3.5 mm, working length 55 cm	1
Foreign Body Removal Forceps	Forceps, alligator, spoon-shaped, single action jaws, semi-flexible, sheath diam 1 mm, length 35 cm	1
Suction	Long suction L- 20, 25cm, 40cm, 2mm diameter	3
Oesophageal Dilators	1 set	1
*Bronchoscopes	with light carrier 27.5cm, 3.5mm; 35/30, 7mm ; 45/40cm, lumen 9mm negus broyle	3
* Biopsy Forceps	forceps alligator sheath diam 1mm, length 40 cm, semi flexible	1
* Foreign Body Removal Forceps	sheath diam 2.5mm, width 4mm, length 50 cm	1
*Suction	40 cm,30 cm, 25 cm for brochoscopes diameter 2.5mm, 2mm	3
Ribbon Right Angled Retractors	Lagenback retractor	1
Cricoid Hook	Double hook	1
Biopsy Forceps	tongue biopsy forceps	1
Foreign Body Removal Forceps	laryngeal forign body removal forceps	1
Tracheostomy Set		1
Cricothyrotomy Set	With all instruments	1
Ear Cup Forceps	round cup forceps 2mm, 8 cm	1
Aural Forceps	fish hartmann ear forceps extra delicate up biting 0.8mm , 8 cm length	1
Impedance Audiometer	with ipsi and contra reflex with inbuilt printer, SISI Test, stranger test with headphones	1

ENT MICROSCOPE

SPECIFICATIONS

Binocular tube f=170mm
Eye piece 12.5 x
Objective lens f= 250mm
120 degree coupling , floor stand
with objective lens 200 mm and 400mm
manual magnification 0.4x - 2.5x
focusing range 40mm

INSTRUMENTS FOR PATHOLOGY

AUTOMATIC TISSUE PROCESSOR

1. Complete automatic dehydration
2. Pre programmable provision for dehydration cycle
3. S.S Basket rotor – slow
4. S.S Tissue basket
5. S.S Tissue capsule with sliding cover, size – 28 x 28 x 9 mm
20 x 20 x 10 mm
6. Two litre capacity glass beakers
7. S.S Wax bath with thermostat
8. Tissue capsule basket S.S with even perforation
9. Divider for tissue capsule
10. Programming of the machine should be simple and user friendly
11. Should have a main process timer
12. 24 hours delay timer should be provided for weekend and routine delay starting
13. Unit should have provision to prevent double processing and ensure tissue remain embedded in the wax bath, until removed.
14. Acrylic control panel cover
15. Should offer safety for tissues in case of power failure.
16. Suitable to work on 220 V, single phase, 50 Hz, AC supply.
17. Equipment should be USA, FDA approved.

TISSUE EMBEDDING STATION

1. Should be compact and have user friendly operation
2. Safety measures in place to provide safeguard against burn injuries

3. Bench top unit
4. Easy to maintain
5. Adequate paraffin container with temperature setting range between 50°C to 75°C
6. Should have a paraffin collection tray
7. Cold palte should be substantial with 0° C temperature
8. Programmable starting time
9. Each functional areas should have individual adjustable temperature
10. 220 V/ 50 Hz
11. Equipment should be USA, FDA approved.

ROTARY MICROTOMES

1. Should have stability which is vital
2. Safety should be insured by providing safeguards to the blade edge
3. Use comfort
4. Section thickness 0.5 mm to 60mm
5. Setting values of variable increments of 0.5 mm, 1 mm, 2 mm, 5 mm
6. Trim setting 1 mm, 60 mm
7. Max specimen size 50 x 60 x 40 mm
8. Specimen orientation
9. Should have smooth running hand wheel
10. Universal knife holder lateral adjustment
11. Sections waste tray
12. Cassette (black) holder / Knife holder base / Standard knife holder.
13. Equipment should be USA, FDA approved

STUDENTS MEDICAL MICROSCOPE

1. **Stand:** Stable & Robust, diecast, traditional Horse Shoe base.
2. **Body:** Inclined through 90 deg, standard tube length of 160 mm
3. **Focusing:** Separate coarse and fine focusing knobs with graduation on one side.
4. **Mechanical Stage:** For X-Y movements, detachable mechanical stage.
5. **Nosepiece:** Triple revolving Nosepiece is provided with positive click stop for proper centering.
6. **Stage:** Fixed square stage 125 x 125 mm with stage clips to hold the slide.
7. **Illumination:** Illumination through a 50 mm diameter plano- concave mirror mounted on gimbal mount.
8. **Objectives:** Antifungal coated Achromatic Objectives of 10x & 40x (SL), 100x (Oil, SL)

9. Eyepieces: Two Eyepiece of 6x, 10x, or 15x

10. Condenser: Moveable condenser is provided with iris diaphragm having 1.2 N.A.

3 PART DIFFERENTIAL HEMATOLOGY ANALYSER

1. Automated hematology analyser capable of analyzing the following Parameters: WBC, RBC, Hb, Hct, MCV, MCH MCHC, RDW, MPV, RBC, and Plt Histograms, Differential counts (18 parameters)
2. Throughput: minimum of 50 samples per hour
3. Closed or open vial sampling with one step sample procuring with single button start switch
4. Auto probe wiping facility
5. Built in printer with large screen for display
6. Patient ID auto numbering
7. Data storage for 200 to 300 patient results and QC storage
8. Levey Jennings graphs
9. Should be USA, FDA approved

EQUIPMENTS/INSTRUMENTS FOR SURGERY

OPEN OT INSTRUMENTS

SPECIFICATIONS

1. S.S of Grade AISI 410 & AISI 420 using for the manufacturing of Surgical Instruments.
2. All the Instruments will be Mat Finish.
3. Warranty 6 Months for any manufacturing Defect.
4. During warranty and thereafter for repair substitute provided.

Laprotomy Set (total 6 Sets required)

1. Sponge Holding Forceps 10"	-	4 Nos.
2. Backhaus Towel Forceps 5"	-	8 Nos.
3. B.P. Handle no. 3	-	2 Nos.
4. B.P. Handle no. 4	-	2 Nos.
5. B.P. Handle no. 7	-	1 Nos.
6. Mosquito Artery Forceps 5" Curved	-	8 Nos.
7. Artery Forceps 6" curved	-	8 Nos.
8. Artery Forceps 6" straight	-	2 Nos.
9. Artery forceps 8" curved	-	6 Nos.
10. Artery forceps 8" straight	-	6 Nos.
11. Allies Tissue forceps 6"	-	6 Nos.
12. Allies tissue forceps 8"	-	6 Nos.
13. Kocker artery forceps 8" straight	-	4 Nos.
14. Kocker artery forceps 8" curved	-	4 Nos.
15. Babcock tissue forceps 6"	-	2 Nos.
16. Babcock tissue forceps 8"	-	2 Nos.
17. Dissecting forceps 6" plain	-	2 Nos.
18. Dissecting forceps 6" toothed	-	2 Nos.
19. Dissecting forceps 8" plain	-	2 Nos.
20. Dissecting forceps 8" toothed	-	2 Nos.
21. Russian forceps 6"	-	1 Nos.
22. Needle holder 6"	-	2 Nos.
23. Needle holder 8"	-	2 Nos.
24. Mayo's scissor 8" straight	-	1 Nos.
25. Mayo's scissor 8" curved	-	1 Nos.
26. Metzenbaum scissor 8" straight	-	2 Nos.
27. Metzenbaum scissor 8" curved	-	1 Nos.
28. Czerny Retractor	-	2 Nos.
29. Balfour abdominal retractor (self retaining)	-	1 Nos.
30. Deaver's retractor (set of 5)	-	1 set
31. Instruments hanger	-	3 Nos.
32. Right angle clamp 8"	-	1 Nos.

33. Right angle clamp 9"	-	1 Nos.
34. Adson dissecting forceps plain	-	1 Nos.
35. Adson dissecting forceps 5" toothed	-	1 Nos.
36. Langenbeck retractor 1"	-	2 Nos.
37. Langenbeck retractor ½"	-	2 Nos.
38. Morris retractor 2" blade	-	1 Nos.
39. Morris Retractor 3" blade	-	1 Nos.
40. Doyen's retractor 3" blade	-	1 Nos.
41. Metzenbaum scissor 6" curved	-	1 Nos.
42. Debakey vascular forceps 6"	-	1 Nos.
43. Debakey vascular forceps 8"	-	1 Nos.
44. Suction cannula pools	-	1 Nos.
45. Suction tips (set of 4)	-	1 set
46. Bone curette long	-	1 Nos.
47. Malleable probe	-	1 Nos.
48. Suction cannula long	-	1 Nos.
49. Suture needle tray (s.s.) perforated	-	1 Nos.

Minor set (Total 4 sets required)

1. Sponge holding forceps 10"	-	2 nos.
2. Backhaus towel forceps 5"	-	6 nos.
3. B. P. Handle no.3	-	2 nos.
4. B. P. Handle no.4	-	1 nos.
5. Mosquito artery forceps 5" curved	-	6 nos.
6. Artery forceps 6" curved	-	6 nos.
7. Artery forceps 6" straight	-	2 nos.
8. Allies tissue forceps 6"	-	2 nos.
9. Kocker artery forceps 6"	-	4 nos.
10. Kocker artery forceps 8 curved	-	2 nos.
11. Babcock tissue forceps 6"	-	2 nos.
12. Dissecting forceps 6" plain	-	2 nos.
13. Dissecting forceps 6" plain	-	2nos.
14. Russian forceps 6"	-	1 nos.
15. Needle holder 6"	-	1 nos.
16. Needle holder 6"	-	1 nos.
17. Right angle clamp 8"	-	1 nos.
18. Adson dissecting forceps 5" plain	-	1 nos.
19. Adson dissecting forceps 5" toothed	-	1 nos.
20. Metzenbaum scissor 6" curved	-	1 nos.
21. Metzenbaum scissor 6" straight	-	1 nos.
22. Metzenbaum scissor 8" curved	-	1 nos.
23. Mayo's scissor 6" curved	-	1 nos.
24. Suction tips (set of 4)	-	1 set
25. Kilner retractor (double ended)6"	-	2 nos.
26. Czerny retractor	-	2 nos.

27. Langenbeck retractor ½”	-	2 nos.
28. Instruments hanger	-	2 nos.

Instruments for Intestinal Surgery (2 set required)

1. Intestinal clamps (non crushing) straight	-	2 nos.
2. Intestinal clamps (non crushing) curved	-	2 nos.
3. Payr Intestinal clamps (crushing) 4 blade	-	2 nos.
4. Serrations 9”	-	1 nos.
5. Moynihan cholecystectomy forceps (curved)	-	1 nos.
6. Desjardin gall stone forceps	-	1 nos.
7. Bake bile duct dilators (set of 9) malleable stems8”	-	1 set

Instrument for Urology (1 set required)

1. Randall renal calculus forceps (set of 4)	-	1 set
2. Mayo’s clinic pedicle clamps	-	1nos.
3. Clutton urethral dilators (set of 12) export quality	-	1 set
4. Superapublic trocar	-	1 nos.
5. Pelvis retractor malleable (set of 4)	-	1 set
6. Pot scissor	-	1 nos.
7. Catheter introducer	-	2 nos.
8. Watson chynae retractor	-	1 nos.
9. Macdonald tissue dissector	-	1nos.

Instruments for Neuro Surgery (1 set required)

1. Adson dual forceps fine toothed 5”	-	1 nos.
2. Dott dual dissecting forces fine toothed 7”	-	1 nos.
3. Adson dressing forceps bayonet fine serrated jaws 7”	-	1 nos.
4. Sergeant dual scissor straight 5”	-	1 nos.
5. Jeffson retractor self retaining curved blunt pointed blades 5.1/2”	-	2nos.
6. North field rongeur heavy straight compound action 9”	-	1 nos.
7. Oliverson rongerur angled to side, compound action 8”	-	1 nos.
8. Hudson brace with perforated & burs	-	1 nos.
9. Gigli saw handle	-	1 pair
10. Gigli saw	-	10 nos.
11. Cairns Gigli saw guide & protector	-	1 nos.

Instruments for Vascular Surgery (1 set required)

1. Potts scissor acute angled 45 degree 7.1/2”	-	2 nos.
2. Potts satinsky vena cava clamp angled shanks 8.1/2” Satinsky vena cava clamp atraumatic 1X2 serrations	-	

double angled jaws	-	2 nos.
3. Medium 40 mm, 9 mm deep 10 debakey peripheral vascular clamp light weight atraumatic 1X2	-	2 nos.
4. Serrations curved 6"	-	2 nos.
5. Debakey bull dog clamps straight cross action atraumatic 1X2	-	2 nos.
6. Serrations 20 mm jaw 3"	-	2 nos.
7. Serrations 30 mm jaw 3.1/2 debakey bull dog clamps curved cross action atraumatic 1X2 serrations	-	2 nos.
8. 20mm jaw 3"	-	2nos.
9. Debakey tissue forceps straight atraumatic 1X2 serrations 6"	-	2 nos.
10. Debakey tissue forceps straight atraumatic 1X2 serrations 8"	-	2 nos.
11. Needle holder fine for vascular surgery 7" spring action -	-	2nos.

Paediatric Set (1 Set required)

1. Mosquito artery forceps 3 ½ curved	-	8nos.
2. Mosquito artery forceps 3 ½ straight	-	4 nos.
3. Metzenbaum scissors 4" curved	-	2 nos.
4. Needle holders 5" fine	-	1nos.
5. Allis tissue forceps 4"	-	2 nos.
6. Intestinal clamp 5" straight – non crushing	-	2 nos.
7. Bulldog clamps	-	2 nos.
8. Malleable retractor size ½ x8", ¾ x8", 1"x8" (set of 3)	-	1 set
9. Sinus probe malleable	-	1 nos.
10. Finochetto chest retractor – infant	-	1nos.

Tracheostomy set (4 set required)

1. Mosquito artery forceps 5"	-	4 nos.
2. Artery forceps 6"	-	1 nos.
3. B.P. Handle no.4	-	1 nos.
4. B.P. Handle no. 7	-	1 nos.
5. Dissecting forceps 6" plain	-	1 nos.
6. Dissecting forceps 6" toothed	-	1 nos.
7. Needle holder 6"	-	1 nos.
8. Allis tissue forceps 6"	-	2 nos.
9. Towel clip cross action 3-1/2"	-	4 nos.
10. Single hook retractor	-	2 nos.
11. Double hook retractor	-	2 nos.
12. Langenbeck retractor	-	2 nos.
13. Metzenbaum scissor 6" curved	-	2 nos.
14. Trachestomy dilator	-	2 nos

Ready-Made/ Instrument Sets

Neurosurgery set	-	1 nos.
Spine set	-	1 nos.

SPECIFICATIONS FOR LAPAROSCOPIC AND INSTRUMENTS

S.No.	Description	Quantity
1	Maryland Kelly's 5mm, 33cm	2 Pcs.
2	Original Maryland University Type 5mm, 33cm	1 Pc.
3	Wave Intestinal Grasper 5mm, 33cm	2 Pcs.
4	Universal Grasper 33cm, 5mm	2 Pcs.
5	Da Vinci Medium Grasper 33cm, 5mm	2 Pcs.
6	Endoclinich 33cm,5mm	2 Pcs.
7	Duckbill Grasper 33cm, 5mm	2 Pcs.
8	Right Angle 33cm, 5mm	1 Pc.
9	Right Angle 33cm, 10mm	2 Pcs.
10	Hunter Grasping Forceps 5mm, 33cm Double Action (2/2 Normal Head)	2 Pcs.
11	Hunter Grasping Forceps 5mm, 33cm Double Action (type 2 / 2 Small Head)	2 Pcs.
12	2/2 Medium size Grasper 33cm, 5mm	2 Pcs.
13	½ Intestinal Grasper 33cm, 5mm Medium size	2 Pcs.
14	Ovum Fenestrated Forceps 33cm, 5mm	2 Pcs.
15	Maxigrip with Ratchet 33cm,5mm	2 Pcs.
16	Claw Forceps 10mm, 33cm(Gall Bladder Extractor)	2 Pcs.
17	Stone Extractor (Medium) 10mm,33cm	2 Pcs.
18	Claw Forceps 33cm,5mm	2 Pcs.
19	Atro Forceps 2/2 small, jaw 33cm,5mm(Very fine serrations)	1 Pc.
20	Scissors Curved 33cm, 5mm Metzenbaum (Saw edged)	2 Pcs.
21	Scissors small micro scissors small tongue 30cm, (CBD Section)	1 Pc.
22	Hook Scissors 33cm,5mm	2 Pcs.
23	Scissors Matzenbaum Extra Curved Woif/Type 33cm, 5mm	2 Pcs.
24	Suction Nozzle- Lever Type Blunt Tip 33cm, 5mm	1 Pc.
25	Suction Nozzle –Lever Type open end 23cm, 5mm	1 Pc.
26	Suction Nozzle- (Combo)5mm/ 10mm,33cm Blunt cum open end	1 Pc.
27	Normal Intestinal Grasper 33cm, 5mm 2/2	2 Pcs.
28	Hasson Cone 11mm	1 Pc.
29	L Hook Dissector 33cm, 5mm	2 Pcs.
30	Spatula Dissector 33cm, 5mm	2 Pcs.
31	Aspiration Needle with Coagulation Point	2 Pcs.
32	Palapation Probe Magnaetic33cm, 5mm	1 Pc.
33	Knot Pusher 33cm, 5mm	1 Pc.
34	Needle Holder (RK Sinha type) Titanium Straight (Toothed Blunt) Tungsten Carbide Tip	1 Pc.
35	Titanium Needle Holder Curved Handle Type	2 Pcs.
36	Palanivelu Hydatid Cyst Long 'Y' Trocar 11mm Extra Long	1 Pc.
37	10 to 5 Reducer Sleeve	2 Pcs.
38	12 to 10 Reducer Sleeve	2 Pcs.

39	16.5 to 10 Reducer Sleeve	2 Pcs.
40	5 to 3 Reducer Sleeve	2 Pcs.
41	Babcock Grasper 33cm, 10mm	1 Pc.
42	Babcock Grasper 33cm, 5mm	1 Pc.
43	Reducer Sleeve Top End Supra Flap	2 Pcs.
44	S Retractor	2 Pcs.
45	Right Angle Retractor Small Tip	2 Pcs.
46	Ovum Fcps Curved Small Head	1 Pc.
47	Straight Artery Fcps Medium Long	1 Pc.
48	Towel Clip (Hook Type) Medium Large	2 Pcs.
49	Blunt Trocar 11mm	1 Pc.
50	Blunt Trocar 12.5mm	1 Pc.
51	Blunt Trocar 16.5mm	1 Pc.
52	Trocar 11mm with sleeve with Air valve & Flap	4 Pcs.
53	Trocar 5.5mm with sleeve with Air outflow valve & Flap	6 Pcs.
54	Trocar 12mm with sleeve with Air outflow valve & Flap	2 Pcs.
55	Trocar 16.5mm with Air outflow valve & Flap	2 Pcs.
56	Snake Retractor /Endoflex	1 Pc.
57	Verses Needle 10cm	2 Pcs.
58	Verses Needle 15cm	2 Pcs.
59	Mochi (berci's) Needle high quality –	2 Pcs.
60	Lap Endo knife with Reducer	1 Pc.
61	Clip Applicator 10mm, with all inserts(200/300/400)	2 Pcs.
62	Weck Clip (Hemo Lock) Applicator 10mm	1 Pc.
63	Clip Applicator 5mm for LT (200/300) inserts	1 Pc.
64	F/O Light Source 24v /250W with 2 outlets	1 Pc.
65	F/O Cable	1 Pc.

Essential

1. All instruments should be Autoclavable.
2. Forceps /Scissors should have SS316 handles.
3. All Insulated Instruments should have Teflon coating on shaft /Handles .
4. Needle Holders should have Tungstun carbide Jaws & Handles should be Titanium G-2.
5. Total Length of the shaft should be 36cm.
6. Bariatric Instruments should be 44cm
7. fibre optic light source should 2 bulbs of 24 volts & should have 30mm heat filters dual fan in/out.
8. Warranty for the instruments should be minimum 2 years.
9. Clip Applicator should have total interchangeable shaft.
10. Prompt after sales services and substitute instrument or appliance should be supplied in event of repair.
11. Sheath and inserts all instruments should be inter changeable.
12. Grip of instruments should be soft and secure and should not leave any mark on tissues.

SPECIFICATIONS FOR DIGITAL CAMERA

The system should be truly Digital HDTV endoscopic video camera. The system should have the maximum Resolution of 1920 X 1080 pixels, progressive scan and the consistent use of 16: 9 format for Input & Output to guarantee genuine HDTV.

The system should have Special Features:

- **Visibly Improved Imaging:** CCD sensing chip should optimizes image quality & Digital Source Sampling thus maximizing hi-fidelity image transmission.
- **Optimizes to Any Size: The system should have** Optical Zoom to enhance the quality of Image size & cross specialty standardization of the camera system, regardless of the telescope used.
- **Plug and Go:** The system should automatically optimize all settings. The system should be ready- to- use as soon as it is connected to the camera control unit.
- **Any Head- Any Time:** The system should have the facility to use a single camera control unit for all camera heads (either single chip or three chip) thus minimizing preparation & maximizes interspeciality standardization.
- **The system should have USB port to capture still images in Full HD resolution as well as Video Sequences in SD to a USB mass storage device**
- **Camera system should be compatible with Communication Bus system for remote controlled operation of the various features of the camera along with other equipment. .**

Technical Specifications:

Image sensor	:	3X1/3” CCD-Chip.
Pixels	:	1920 x 1080
AGC	:	Microprocessor controlled
Lens	:	Integrated Zoom Lens
Video output	:	Composite signal to BNC socket. Y/C signal to S-VHS socket (2 x). RGB signal to D-sub socket HDTV signal to DVI-D socket
Input	:	Keyboard input for character generator. 5- pole DIN socket.
Control Output/Input		

3.5mm Stereo Jack Plug (ACC1, ACC2)
Serial Port at RJ-11
USB Port with ICM (2x).
Mains Cord
BNC/BNC Video Cable Length 180 cm
S-Video (Y/C) Connecting Cable Length 180 cm
Special RGB Connecting Cable Length 180 cm
Connecting Cable for controlling peripheral units length 180 cm (2)
DVI-D Connecting Cable Length 300 cm
Keyboard with US English Character
Power Supply: 100-240 VAC 50/60 Hz
Certified to : IEC 601-1, 601-2-18, CSA 22.2 No. 601, UL 2601 and
CE according to MDD, protection class1/CF

DIGITAL MONITOR: FOR HD CAMERA

Special Features

- HDTV Display in original 16: 10 HDTV format
- 1080p/50 and 1080p/80 display possible
- On Screen menu for monitor setting (possible in several languages)
- Liquid crystal display
- Max Resolution 1920/1200 Pixles
- Anti reflection coated front glass
- Easy to access control buttons on the housing front.
- Dripwater protected, dustproof housing
- Low voltage protection via external 24VDC Mains power supply.
- Picture in Picture display (PIP)
- Mirror Imaging Possible
- Upto 5 different users profiles can be stored
- Medical grade FDA, UL and CE Approval.

Specifications

HD TFT Flat Screen Monitor with stand size 26",
Aspect Ratio 16:10 HD format
Brightness: 500 cd/m²
Max Resolution 1920/1200 Pixels
Maximum viewing angle : 178° vertical
Contrast ratio: 800 : 1
Rated power : 115 watts
Power Supply 100-240 VAC
Screen Dimensions : 627 x 427 x 100mm
Video Inputs : S- Video signal to 4 pol. Mini DIN socket
RGB signal to 5 x BNC socket
Composite to BNC socket
HD-SDI signal to BNC socket
DVI signal to DVI-D socket
SDI signal to BNC socket
Accessories External 24VDC Power Supply, Mains Cord, Pedstal.
Certified to : EN 60601-1, protection class IPX 1

XENON LIGHT SOURCE

Xenon 300

1

Xenon Light Sources 300 watts

Lamp type:- Xenon 15V, 300 Watt

Color Temperatures 6000K

Light Outlets – 1

Light Intensity Adjustment: - Continuously adjustable either manually or automatically by cameras video output signal.

Certified To: - IEC 601-1 & UL 544 CE According to MDD, protection class 1/CF

Fibre Optic Light Cable.

1

Thickness 4.8mm Length 300 cms

Essential:-

1. Supplier should be a company of repute having it's own office in India for at least 15 years.
2. Should have supplied to institutions of repute in India.
3. Should cover at least 3 years warranty and maintenance.
4. Should provided on site installation and demonstration

SPECIFICATIONS FOR ELECTROSURGICAL GENERATOR /CAUTERY

1. Micro controller based isolated Electrosurgical Generator having both Monopolar and Bipolar outputs designed for all surgical procedures.
2. Smart generator should be able to monitor changes in tissue impedance continuously and adjusts power.
3. Monopolar outputs should have three cutting modes: -
 - a) Low Cut for delicate tissue or Laparoscopic cases having maximum power of 300 W.
 - b) Pure cut for clean, precise cut in general surgery having maximum power of 300 W.
 - c) Blend mode for cutting with homeostasis having maximum power of 200 W.All cut modes should be able to adjust output power depending on tissue density by less than 15% or 5W, whichever is greater.
4. It should have three Coag Modes with maximum power of 120 W
 - a) Desiccate mode for low voltage contact coagulation suitable for Laparoscopic and delicate tissue work.
 - b) Fulgurate mode for efficient non-contact coagulation in most applications.
 - c) Spray mode should have randomized spray effect of varying amplitude and frequency for coagulating large tissue areas with minimum depth of necrosis.
5. It should have three bipolar modes with maximum power of 70 W
 - a) Precise mode to have fine control of desiccation in delicate tissue.
 - b) Standard mode for applications at low voltage to prevent sparking.
 - c) Macro mode for applications on tissue with high resistance.
6. It should have patient plate monitoring facility and should give audiovisual alarm and deactivate output if contact between patient and patient plate is not proper to eliminate the risk of patient burns.
7. The unit should have two handswitching and two Footswitching Monopolar outputs and one handswitching and footswitching bipolar output.
8. It should have membrane keyboard for power settings.

9. The unit should have individual digital display of power for Bipolar, Monopolar cut and Monopolar Coag.
10. The unit should have temperature sensing cooling fan, which should operate automatically to protect generator from thermal damage.
11. It should have RS232 serial port to interface with computer to reduce the time and effort in problem diagnostics.
12. The unit should have RF activation port to tell other equipments like ECG or EEG that RF current is being generated.
13. The unit should not have RF Leakage current more than 150 mA.
14. It should be Compact and light weight, weighing less than 10 Kg.
15. The unit should be operational between 170V AC to 260V AC, 50 Hz. (should not require stabilizer)

Lap force FX

1. It should have safety standard of UL, CUL, IEC 601-2-2.
2. It should be compatible with Tissue Select.
3. It should be compatible with Robotics arm.
4. Accessories
 - Monopolar Footswitch-1no.
 - Bipolar footswitch-1no.
 - Reusable Handswitching Pencil- 2nos.
 - Disposable Patient Plate Monitoring System-50 nos.
 - Bipolar Forceps-1no.
 - Forceps Cord-2nos
 - Universal Adapter-1no.

OUTPUT CHARACTERISTICS			
	Mode	Maximum Power (Watts)	Crest Factor* (typical)
Bipolar with Coagulation and cutting facilities	Precise	70	1.5
	Standard	70	1.5
	Macor	70	1.5
Monopolar Cut	Low	300	1.5
	Pure	300	1.5
	Blend	200	2.5
Monopolar Coag with contact and non contact facilities	Desiccate	120	5
	Flug, High Crest Factor	120	7.0
	Flug, Low Crest Factor	120	5.5
	Spray	120	8

Essential –

1. Suppler should be a company of repute having its own office in India.
2. Instrument supplied should USFDA approved
3. Should cover comprehensive 3 years warranty

SPECS FOR BASIC SET FOR CYSTOSCOPE AND ACCESSORIES –

1. Telescope 0 degree 4 mm wide angled autoclavable – 1 piece
2. Telescope 30 degree 4 mm wide angled autoclavable – 1 piece
3. Cystoscope sheath with obturator 20 FR – 1 piece
4. Cystoscope sheath with obturator 23 FR – 1 Piece

5. Adaptor for cystoscope with one instrument port – 1 Piece
6. Flexible grasping forceps 7 FR, for cystoscopy with working length 365 mm – 1 piece
7. Flexible biopsy forceps 7 FR, working length 370 mm – 1 piece

8. Light source 180w Xenon short ARC lamp and power cable, mains power supply 100-240 V.A.C., 50/60 HZ - 1 piece
 Technical data:
 Classification: CF
 Power consumption: 380-480 VA
 Colour temperature: 6000 k
9. Xenon short ARC Lamp 180 watt – 1 piece
10. Fiber light cable 2300 mm long, with bundle diameter 3.5 mm – 1 piece

- Deram 180w Xenon short ARC Lamp with 5 piece connector used in light sources.
 Longer lead versions also available for Optic units
 14V, 180W
 XBOR181/45C
 Deram 180w Xenon short ARC Lamp with leads
 14V, 180W
 XBOR 181/45C

- For 8. (i) AL1 180W Xenon light source from at lantch medical denices Ltd.
 (ii) orion 800 high intensity 180w Xenon light source color temp 6000 A⁰ k.

SPECIFICATIONS FOR LAP. TELESCOPES & INSUFFLATION UNIT & TROLLY

LAPAROSCOPIC TELESCOPES SET

HopkinsII Rod Lens Telescope with CLS System and Universal Eyepiece and Multi adapoter light connector 0 deg 5mm wide angle = 01

HopkinsII Rod Lens Telescope with CLS System and Universal Eyepiece and Multi adapoter light connector 30 deg 5mm wide angle = 01

INSUFFLATION UNIT

Specifications : ELECTRONIC PNEUMOFULATOR

Special features :

- High degree of patient safety
- Easy to use
- Clear, adjacent displays for set value and actual value allow easy monitoring of insufflation process
- Touch keys for precise preselection of set values
- Optical and acoustic warning signals in the event of patient overpressure
- Fully automatic, electronically controlled gas refill (e.g. in case of gas loss when changing instruments)

- Safety – constant monitoring of intra-abdominal pressure; any overpressure is reduced immediately

Technical specifications:

Gas flow/min > 0 to 30 lit.
 Pressure (mmHg) > 0 to 30 mmhg
 Intra-abdominal pressure guage >0 to 50 mmhg
 Power supply > 100to 240VAC (50/60Hz)
 Certified to >IEC 601 -1 ,CE Label according to MDD

Should be compatible to the Communicating Computer System, so as to function as an integral part of the digitally controlled Operating Room under the command of the operating Surgeon.

ENDOSCOPIC TROLLEY IN OT (INDIAN MAKE)

Special features:

- Rides on four antistatic casters
- 2 Equipped with locking brakes
- Shelves – fixed (3) and inclinable (1)
- 7 Equi-potential plugs
- 2 Handles
- 1 Cable channel mounted on the left or right side of the column
- 4 sets of non-sliding stands for units
- Electrically supply terminal strip with 6 plugs
- A camera mount
- A drawer unit

Technical specifications:

Videocart	680 x 1730 x 640 mm (w x h x d)
Shelf	630 x 420 mm (w x d)
Caster diameter	150 mm
Maximum loading capacity per shelf	40 kg
Maximum total weight	150 kg

INSTRUMENTS FOR GYNAECOLOGY

NEW SPECIFICATIONS DIGITAL VIDEO COLPOSCOPE-DVC 10000

- Resolution should be more than 850 lines
 - Single Light LED circle should be there
 - Minimum 10 to 11 Mega Pixels
 - Digital Matrix Processor
 - Recommended Lamp life 20000 hours
 - Optical Zoom from 1-36x
 - Magnification 1-40X
 - Corner to Corner Uniform Brightness
 - Screen should display the magnification indicator.
 - Acetic acid Test Timer should display on screen
 - In built Three Step Electronic Green Filter with no light loss
 - Facility to measure the picture in millimeters should be there.
 - Picture can be saved for single colposcopy in software
 - Statistics mode with automatic flow chart facility should be provided.
 - Printing of multi-format diagnosis report like single, double, four photo report.
 - Foot switch should be provided to save the pictures.
 - Imaging system for high resolution images.
 - Automatic Gamma correction is in built.
 - High Speed Fast auto focusing all the time during colposcopy.
 - Multi point Glare Reduction.
 - Three modes of Electronic digital green filter technology, no light diminished and can help in observing fine vessels.
 - Convenient vertical floor stand and control handgrip: Provide examination and surgical operation with a convenient operation environment
-
- FDA approved and prior demonstration

SPECIFICATIONS FOR LAP AND GAYNE

S No.	Product Description	
1	VERESS Pneumoperitoneum Needle	1
2	Trocar, size 11 mm, Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, Multifunctional Valve.	3
3	Trocar, size 6 mm, Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, Multifunctional Valve.	3
4	Reducer 11/5 mm	1
5	Maryland Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, double action jaws, consisting of Plastic Handle, without ratchet Outer Tube, insulated Forceps Insert	1

6	Grasping Forceps, 2 x 4 teeth, rotating, with connector pin for unipolar coagulation, size 5 mm, double action jaws, consisting of Plastic Handle with style ratchet Outer Tube, insulated Forceps Insert	1
7	FUNDUS GRASPER Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, heavy, double action jaws, consisting of Plastic Handle, with MANHES style ratchet Outer Tube, insulated Forceps Insert	1
8	METZENBAUM Scissors, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, blades curved, double action jaws, length of blades 12 mm, consisting of Insulated Handle, without ratchet Outer Tube, insulated	1
9	Bipolar Forcep, width of the jaws 4 mm, serrated, size 5 mm, consisting of Ring Handle Outer Tube Inner Tube Forceps Insert	1
10	Bipolar High Frequency Cord with 2 x 4 mm	1
11	Monopolar High Frequency Cord with 4 mm	1
12	Suction and Irrigation Tube,	1
13	Dismantling needle holder,	1
14	Coagulating and Dissecting Electrode, L-shaped, with connector pin for unipolar coagulation, size 5 mm	1
15	P C O D needle	1
16	Myoma Screw	1

VACUUM EXTRACTOR

- The equipment should have facility for suction evacuation and vacuum extractor of fetal head.
- Electric requirement as per Indian power supply 240 watts.
- Vacuum pressure/suction pressure of the unit should be 0 – 700 mm Hg, minutely adjustable.
- Suction system should have piston/cylinder(self lubricating)
- There should be 2 collection bottles- small of 1.5 – 2 L and large of 3 – 4 L.
- It should be supplied with both metal and silicon suction cups at least 3 metal cups i.e. 3 small- 25 – 30 mm, medium 40 – 45 and large 50-60 mm internal diameter which can be sterilized and should be rust proof. Atleast two Silastic cups (medium and large) 50 and 60 mm also to be supplied.
- There should be separate suction tube for the both suction and vacuum extractor.
- There should be float valve for each bottle.
- The power control should be foot switch also.
- The unit should be mounted on a mobile trolley which is rust proof with a tray to keep the instruments which is made up of stainless steel and should be rust proof. Trolley should have locking device in wheels.

- The unit should have ISO -9001/2 certificate or equivalent which should be submitted with tender.
- Prior demonstration in the department is necessary.

INSTRUMENTS FOR PEDIATRICS

SPECIFICATIONS FOR NEONATAL VENTILATOR (FDI Approved)

1. Essential components

- Ventilator
- Air Compressor
- Reusable Circuit with online bacterial filter
- Humidifier
- Stand for circuit
- Operator manual · Service manual

2. Type of ventilator: Continuous flow, time cycled, pressure control

3. Modes available: CPAP, IMV, SIMV, Assist/Control, PSV, VG, BiPAP

4. Range of set parameters

- Peak inspiratory pressure: 0-50 cms
- Positive end expiratory pressure: 0-20 cms
- Fraction of inspired oxygen: 21-100%
- Inspiratory time: 0.1- 3 secs
- Rate: 0-150 bpm
- Gas flow: 5-15 Lpm

5. Display: Both digital and analog

All set parameters as mentioned above

Measured parameters

- PIP, PEEP, Mean airway pressure
- FiO₂
- Ventilator rate

Derived parameters

- Te, I: E ratio
- Leak percentage
- Tidal volume
- Minute ventilation
- Pressure & flow waveforms and loops
- Alarm message
- Calibration
- Silenced alarm

6. Alarms Both audio & visual

- Low & high pressure
- Compressor failure
- Failure of sensor/s
- Tube obstructed
- Power failure

7. Humidifier Flow resistance upto 1 cm H₂O/L/Sec Temperature range 31-40 degrees C

Temperature control + 2°C

Digital display of temperature- range of display 5-80°C

Water level indicator

Warm up time less than 15 minutes Alarms

Heater wire on:

Airway temp: Tracking + 2°C from set temp
Chamber temp: If chamber temp varies +
4°C from set temp for 20 minutes or alarm
immediately if set chamber is exceeded by 10°C
Heater wire off:

Airway temp: Fixed at 41°C high & 29.5 °C
Low Chamber temp: limited to 60°C max
Should be compatible with both reusable &
Disposable chambers and reusable & disposable Circuits

8. Power 220-240 V, 50-60 Hz

Uninterrupted power back up for at least one hour

9. Spares with each ventilator

Reusable circuit with Y piece, heater wire, temp probe& adapter 15 each

Bacterial filter 15 each

Reusable humidifier chamber 15 each

Sensor cable 15 each

Oxygen cells 2 each

Flow/ pressure sensor 20 each

SPECIFICATIONS: ADULT VENTILATOR

The device complies with requirements of Medical Device Directive 93/42/EEC.
Classification: Class I equipment. According to IEC/EN 60 601-1.

Standards : IEC/EN 60 601-1 (Type B).
IEC/EN 60 601-2-12.
EN 794-1.

IP classification IP 20

Electromagnetic compatibility (EMC):

- Emission: According to IEC/EN 60601-1-2(Edition 2:2001).
- Immunity- Extended test to According to IEC/EN 60601-1-2.30 v/m:

Patient range:

Adult, all ventilation modes:

Weight:

10 - 250 kg

Infant, invasive ventilation:

0.5 - 30 kg

Infant, NAVA + NIV NAVA:

0.5 - 30 kg

Infant, NIV PS+PC:

3 - 30 kg

Infant, Nasal CPAP:

0.5 - 10 kg

OPERATING RANGES:-

Operating temperature:

+10 to +40°C

Relative humidity:

15 to 95% non-condensing

Atmospheric pressure:

660 to 1060 hPa

Lowest pressure in breathing system -400 cmH₂O

NON OPERATING CONDITIONS:-

Impact:

Peak acceleration:

15 g.

Pulse duration:

6 ms.

Number of impacts:

1000.

Storage temperature: -25 to +60° C (-13 to 140° F)
Storage Relative Humidity: < 95%
Storage Atmospheric Pressure: 470 to 1060 hPa

POWER SUPPLY:-

Power supply, automatic range
Selection: 100 – 120 V AC ±10%, 50 –60 Hz, or 220 – 240 V AC ±10%,
50 – 60 Hz.

Plug-in battery module:

Battery backup: Two battery modules are delivered with the ventilator. Up
to six battery modules can be included.

Battery capacity: Rechargeable, 12 V, 3.5 Ah each.
Recharge time: Approximately 3 h/battery.
Battery backup time: At least 3 h, when using six batteries.

External 12 V DC: 12.0 V – 15.0 V DC, 10 A
Max power consumption: At 100 – 120 V: 2 A, 190 VA,140 W.
At 220 – 240 V: 1 A, 190 VA,140 W.

Dimensions:

User Interface: W 355 x D 53 x H 295 mm
Patient Unit: W 300 x D 205 x H 415 mm
Weight: Approximately 20 kg (Patient Unit 15 kg, User Interface 5 kg)
Method of triggering: Flow and pressure
Max. operating pressure: Approximately 115 cmH2O

Bias flow:

Adult: 2 l/min
Infant: 0.5 l/min

GAS SUPPLY:-

Inlet gas pressure Air/O2: 200 – 650 kPa / 2.0 – 6.5 bar /
29 – 94 PSI

Connection standards available: AGA, DISS, NIST, or French standard.

Unavailable gas/loss of gas
pressure: The flow from an unavailable gas (air or O2) is automatically
compensated for so that the patient gets the preset volume
and pressure.

PATIENT SYSTEM GAS CONNECTORS:-

Conical fittings: Male 22 mm / female 15 mm. In accordance with ISO 53561.

Gas exhaust port: Male 30 mm cone

USER INTERFACE:-

Weight: Approximately 5 kg

Attachment: Can be attached to the mobile cart, a table, rail or pole (15-30 mm diameter).

SCREEN:-

Type: TFT-LCD module
Size: 31 cm (12.1") diagonal
Viewing area: 246.0 x 184.5 mm

INSPIRATORY CHANNEL:-

Pressure drop: Max. 6 cmH₂O at a flow of 1 l/s
Internal compressible factor: Max. 0.1 ml/cmH₂O
Gas delivery system: Microprocessor controlled valve

Inspiratory flow range:

Adult: 0 to 3.3 l/s
Infant: 0 to 0.55 l/s

EXPIRATORY CHANNEL:-

Pressure drop: Max. 3 cmH₂O at a flow of 1 l/s
Internal compressible factor: Max. 0.1 ml/cmH₂O
PEEP regulation: Microprocessor controlled valve <12 ms for 10 – 90
Rise time, expiratory flow measurement: <12 ms for 10 – 90 % response at flow of 0.05 – 3.2 l/s
Expiratory flow range: 0 to 3.2 l/s

ALARMS:-

Airway pressure (upper):
Adult, invasive ventilation: 16 - 120 cmH₂O
Adult, Non Invasive Ventilation: 16 - 40 cmH₂O
Infant, Invasive ventilation: 16 - 90 cmH₂O
Infant, Non Invasive Ventilation: 16 - 40 cmH₂O

Expired minute volume (Upper alarm limit):

Adult: 0.5 – 60 l/min
Infant: 0.01 – 30 l/min

Expired minute volume (Lower alarm limit):

Adult: 0.5 – 40 l/min
Infant: 0.01 – 20 l/min

Respiratory frequency: 1 – 160 breaths/min
High end expiratory pressure: 0 – 55 cmH₂O
Low end expiratory pressure: 0 – 47 cmH₂O.

High continuous pressure: Set PEEP level + 15 cmH₂O exceeded for more than 15 sec.

O₂ concentration: Set value ±5 vol% or 18 vol%

Gas supply: Below 200 kPa / 2.0 bar / 29 PSI and above 650 kPa / 6.5 bar / 94 PSI

VENTILATION MODES:- INVASIVE VENTILATION

Controlled ventilation:

- PC
- VC
- PRVC- Optional with Universal Basic Edition

Supported ventilation:

- PS/CPAP
- VS- Optional with Universal Basic Edition
-

Combined ventilation:

- SIMV (VC) + PS:
- SIMV (PC) + PS:
- SIMV (PRVC) + PS
- Bi-Vent
- Automode

Control mode: VC <—> Support mode: VS

Control mode: PC <—> Support mode: PS

Control mode: PRVC <—> Support mode: VS

VENTILATION MODES: INVASIVE

- NIV PC
- NIV PS
- Nasal CPAP

Real time waveforms - up to 4 waveforms displayed simultaneously:

- Pressure
- Flow
- Volume
- CO2
- Edi

SPECIFICATIONS: CAUTERY MACHINE

- High end diathermy with vessel sealing system
- Electrosurgical unit with monopolar and bipolar functions.
- Foot switch with switching facilities to change between monopolar and bipolar functions.
- HF power limitation 1 to 300W for monopolar cutting adjustable in 1W steps.
- Auto start for both bipolar outputs possible.
- Facility to change between “moderate coagulation” modes.
- Adjustable delay time for bipolar auto start function.
- Minimum programs including; TUR-P, TUR-Vap, TUR-BT, EndoLAP, Thorax, Micro Neuro.
- CF according to EN standard.

Accessories:

- Reusable monopolar pencil, blade and needle electrodes, reusable connecting cables, ground plates. etc.
- All accessories needful for cardiac and thoracic surgery, neuro surgery, Uro & Gastro surgery.

Additional Facility:

- Complete reusable instrument for laproscopic vessel sealing.
- Special Bipolar- TUR programs for resection under saline for urology(TUR)

TECHNICAL SPECIFICATIONS:

1. Microprocessor based digital display electrosurgical unit with continuous feedback system & having feather touch controls.
2. Pure cut & 2 blends with varying degree of hemostatis & under water cutting application
3. Spray coagulation, Force & Soft coagulation mode & two Bipolar (micro & macro) mode.
4. Audio alarm on completion of Bipolar Coagulation.
5. Capability to auto store last used values on front panel if unit is shut off
6. The unit should have double paddle explosion protected foot switch for monopolar cut and coagulation and dual pad silicon patient plate for continuously contact monitoring system.
7. The unit should have facility of dual mono polar coagulation.
8. Separate foot switch for Bipolar Coagulation.
9. Automatic switch off circuit when there is break in patient connecting wire and patient plate
10. Safety audio visual alarm for patient plate, disconnection and continuous activation of unit.
11. Pure cut : 300 watt
12. Blend-1 / Low : 250-300 watt
13. Blend 2 : 200 watt
14. Spray Coag : 120 watt
15. Force Coag : 120-150 watt
16. Desiccation : 100 watt
17. Two Bipolar modes: Micro- 70-80 watt & Macro- 70-80 watt
18. Standard accessories:
 - a- Double paddle foot switch with cable
 - b- Bipolar foot switch, mains cable,
 - c- Silicon rubber patient plate with cable (3 no.),
 - d- Autoclavable electrosurgical handle (3 nos.),
 - e- Set of 5 electrodes (1 no.),
 - f- Bipolar forceps of various sizes with cable (3 no.),
 - g- Monopolar cord (3 no.) with connection cable to electrosurgical unit,
 - h- Anti-rusted mobile trolley,
 - i- Reusable hand switching pencil (1 no.)
 - j- Properly rated fuses- 4 nos
19. Unit should operate on 220 + 12.5% V AC, 50 Hz
20. Should submit certificate of relevant IEC safety standard.

SPECIFICATION: NEONATAL TRANSPORTATION INCUBATOR

- Double wall transparent hood section with electronic servo temperature control system.
- Temperature setting range from 29deg C to 38 deg C in 0.1 deg C increments with audible & visual high temperature alarm.
- Incubator air temperature display range 20 deg C to 42 deg C in 0.1 deg C increments
- Standby heating mode to keep incubator ready for use.
- Low power voltage alarm
- Supplied with 12 V DC rechargeable power pack compatible with 230 V AC/ 50-60 HZ
- Auto – cut facility when heater gets over heated.
- Supplied with incorporated IV pole

- Should be 93(W) x 41 (D) x 36(H) cm in size and approx 15.7 kg in weight.
- Fixed on movable trolley with lockable castors & storage space for battery & gas cylinder

PHOTOTHERAPY UNIT DOUBLE SURFACE

1. Phototherapy based on advanced CFL tube /LED Technology.
2. Minimum 8 Nos of medical grade Blue CFL lamps on source modules. For LED technology the irradiance should cover the entire treatment area.
3. Height adjustable mechanism, treatment distance to the range of 25to 45 cms.
4. Wavelength of CFL lamps should be in the range of 420-470 nm and irradiance level should be higher than normal blue tube lights.
5. The unit should provide a minimum of irradiance 10Watts/m²
6. The irradiance should be measured and reported to the user institution at the time of installation and thereafter during every subsequent warranty /CMC/AMC.
7. Visit and all breakdown visits.
8. Lamp source should be continuous tilt able to ± 90 degree angle to cover the entire treatment area.
9. System should be height adjustable with built in non resettable timer.
10. Baby bed should be transparent with up/down tiltable facility.
11. Should work with input 200 to 240 VAC 50 Hz supply.
12. Should have safety certificate from a competent authority CE/FDA(US)/STQC CB certificate /STQCS certificate or valid detailed electrical and functional safety test report from ERTL. Test report from ETDC. Copy of the certificate/test report shall be produced along with the technical bid.
13. The measurement of irradiance should be demonstrated to the technical committee during product demonstration.

EQUIPMENT SPECIFICATIONS OF ANESTHESIA WORKSTATION

1. **Description of function:-**
 - Anesthesia workstation is used for delivering anesthesia agents to the patients. The complete unit also monitors the vital signs and ventilate the patients.
2. **Operational Requirements:-**
 - Anesthesia machine complete and integrated with anesthesia gas delivery system, circle absorber system, precision vaporizer for isoflurane and seroflurane anesthesia ventilator
 - Facility for Automated machine check.
 - Monitoring system to monitor anesthetic gases(inspiratory and expiratory), ECG, EtCO₂, FiO₂, Pulse Oximeter, airway pressure, Nibp, IBP(as required) Rectal/skin temperature.
3. **Environmental Specification:-**
 - Temperature - 10degree to 40/50degree C
 - Humidity - 15-95% Relative humidity

Altitude - 440 to 3565m / 500to 800mmHg

TECHNICAL SPECIFICATIONS:-

1. Compact and modular three gas Anesthesia workstation with integrated ventilator for adult to infants.
2. Machine should be suitable for low and minimal flow anesthesia with compliance of breathing circuit, fresh gas flow compensation/decoupling.
3. Machine should have at least 2-3 drawers.
4. System should have up to 90mins battery backup.
5. Machine should have individual locking front casters.
6. Flow Management
 - Compact and easy to use.
 - Flow meter tubes for Oxygen, N₂O, Air, Calibrated in multiple scale range around 0ml-15L
 - Dual air flow tubes standard for higher resolution of low flows.
7. Breathing System
 - Latex free and fully auto clavable
 - Should have change over from spontaneous to bag ventilation with single step
 - Should have an external fresh gas outlet for connective Magill or Bain's circuit.
 - Flow sensing capability at inhalation and exhalation ports.
 - Fully integrated to minimize misconnections and disconnections.
8. Gas Delivery System
 - Should have pin index yokes for oxygen and N₂O besides separate connection for central gas supply for O₂, N₂O, and Air.
 - The machine should have pressure gauges for cylinder and central supply lines mounted on front of Anesthesia machine. The gas connections should be non-interchangeable.
 - Automatic cut off N₂O by oxygen pressure failure.
 - Hypoxic guard to ensure 21% O₂ at a minimum of 200ml.
 - Emergency oxygen flush at 25-75 L/min bypassing the vapourizer.
9. Vapourizer
 - Tool free installation, selectatec manifold interlocks and isolates vapourizer.
 - Machine should be able to mount two vapourizers. These should be Temperature, Pressure, and flow compensated (Isoflurane and seroflurane)
 - The mounting of vapourizer should be quick and easy
 - Should have extended delivery range from 0-8%
 - Vapourizer must be isolated from gas flow in the off position & prevent the simultaneous activation of more than one vapourizer.
10. Standard Circle Absorber System
 - Should have adjustable pressure limiting valve, breathing circuit, pressure measuring device.
 - Should be suitable for low flow
 - Should have CO₂ absorber chamber canister
 - Should have bag/ventilator selecting valve integrated onto the absorber
11. Ventilator
 - Electronically controlled, electronically driven ventilation not requiring any driving gas.
 - Should not require changing of bellows for adults and infants.
 - Ventilator should have volume control and pressure control function with PEEP.
 - Tidal volume: 20ml-1500ml
 - PEEP: 0-20mbar
 - Breathing Frequency: 4- 65 breath/min
 - I:E Ratio: 4:1 to 1:4

- Pressure limiting (Pmax)- Upto 80cm H₂O
- Should automatically compensate for compliance of breathing system.

12. Display of Ventilator

- Tidal Volume- Inspiratory and expiratory
- Minute volume
- Inspiratory Pressure
- Plateau Pressure- Peak and mean
- PEEP
- I:E Ratio

13. Alarm Limits and Alarm

- Adjustable high/low limits with Audio and visual alarms of minute volume, airway pressure inspired oxygen concentration
- Alarm silence countdown timer 120 to 0 secs
- apnea alarm
- Mechanical ventilation on less < equal to 5ml breath measured in 30secs
- Mechanical Ventilation off < equal to 25ml breath measured in 30sec.

14. Specifications for Patient Monitor

- Should be suitable for adult and pediatric population
- Should have vital parameters as ECG(3 and 5 leads), NIBP(Systole, diastolic, mean), IBP, SPO₂, EtCO₂, Gas monitoring with M<AC values(inspiratory and expiratory)
- Temperature measurement
- Automatic Identification and measurement of anesthetic gases, EtCO₂, O₂, N₂O, MAC value, FiO₂ measurement.
- Should have automatic graphic and tabular trending of all monitored parameters
- Should have at least 90mins battery backup
- Facility to store snap shots during critical events
- Audio-visual and graded alarm system
- Facility for data storage for at least 24hours.

Registrar