

DEPARTMENT OF ORTHOPAEDICS  
RAJENDRA INSTITUTE OF MEDICAL SCIENCES, RANCHI

List & Specification of Equipments are Enclosed herewith.

Sl. No	Description
1	Arthroscope Complete Set
2	Power Drill Machine with extra Hand Set
3	C-Arm Image Intensifier
4	Knee Arthroscopy Training Basic Set

Specifications enclosed

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SCHEDULE-V

QUALITATIVE REQUIREMENTS (QRS) FOR ARTHROSCOPE COMPLETE QTY- 02 NOS. (WITH ITS COMPLIANCE STATEMENT TO BE GIVEN BY TENDERER).

1. Nomenclature of Item with Year & Model No: \_\_\_\_\_
2. Country of Origin: \_\_\_\_\_
3. Tenderers are requested to give Compliance of each Specification whether equipment being offered by them is complying with Specification or otherwise.

TECHNICAL SPECIFICATION

S/N	Technical Specification/QRS	Compl ied	Not Complie d	Page No at which this Tech details attached.
1	For Knee Arthroscopy including ACL & PCL set with Full HD Camera System, Shaver and Pump Systems including Instrument for Shoulder Arthroscopy, Hip Arthroscopy, Small Joint and Data management System.			
2	Arthroscope: Autoclavable Qty one each.			
(a)	Wide angle Forward-Oblique and lateral scope.			
(b)	Field of view :			
(c)	Angle of View : 30° and 70°			
(d)	Diameter 4 mm			
(e)	Length 16 cm to 18 cm			
(f)	Fibre Optic light transmission incorporated			
(g)	Standard ocular window for coupling camera head			
(h)	Scratch resistance sapphire quoted tip lens			
(i)	Rod lens system for optimum brightness, contrast and definition.			
(j)	Arthroscope Sheath, rotatable Qty-1			
(k)	Diameter 5.5 to 6 mm			
(l)	Working length 12 cm			
(m)	With 2 rotatable stopcocks			
(n)	Autoclavable, for use with telescope 30° and 70°.			
(o)	Semi Sharp Obturator Qty-1			
(p)	Use with arthroscopy sheath, working length 12 cm			
(q)	Hook Probe Graduated Qty-1			


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3	<b>CAMERA SYSTEM</b>			
(a)	Specification for Full HD Digital Camera			
(i)	The system should be truly Digital Full HDTV Endoscopic Video Camera. The system should qualify all the essential criteria for full HDTV system.			
(ii)	Maximum resolution of 1920 X 1080 Pixels			
(iii)	Progressive scan			
(iv)	Consistent use of 16:9 format for input & Output to guarantee genuine HDTV.			
(v)	The system should have the following Features.			
(vi)	CCD sensing chip should optimize image quality & Digital Source Sampling for maximizing hi-fidelity image transmission.			
(vii)	Optimizes to Any size : The System should have optical zoom to enhance the quality of image size & cross specially standardization of the camera system, regardless of telescope used.			
(viii)	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.			
(ix)	The system should be menu driven, thus allowing the surgeon to program the camera head functions as per surgical need & requirement			
(x)	The system should have the following Digital O/Ps			
(xi)	HDTV signal to DVI-D Socket			
(xii)	Digital SDI Signal			
(xiii)	DV/USB-For Digital recording			
4	<b>Technical Specifications</b>			
(i)	Image Sensor	3 X 1/3" CCD Chip		
(ii)	Pixels	1920 (H) x 1080 (V) Pixels per chip		
(iii)	Camera Head Weight	150-250 gms		
(iv)	AGC :	Micro processor Controlled 55-65 dB		
(v)	Lens :	Optical Zoom Lens with desirable range f-12-35 mm		

  
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(vi)	Video output	Composite signal to BNC socket Video signal to 4 pin Mini DIN socket (2c) RGB Signal. IDTV Signal to DVI-D socket (2c). Digital SDI Signal to BNC socket DV signal to DV socket			
(viii)	Certified to : IEC-601-1, CE according to MDD, protection class I/CE.				
5	TFT Flat Screen Monitor.				
(i)	The system should have	Qty-1			
(ii)	Full IDTV medical grade monitor size : 26 inch				
(iii)	To accept DVI-D, DV and SDI video inputs				
(iv)	Compact & Lightweight design				
(v)	Drip water protected, dustproof housing.				
(vi)	Screen Diagonal 26 inch				
(vii)	Resolution 1920 X 1080p				
6	XENON LIGHT SOURCE AND LIGHT CABLE				
(a)	Specifications				
(i)	High Intensity Xenon light source with space xenon lamp.				
(b)	Special Features				
(i)	High light intensity with 300 watt Xenon lamp				
(ii)	High colour temperature more than 6000 K corresponds to brightness of sunlight resulting in high visual and photographic clarity for colour rendition.				
(iii)	Monitoring of lamp function				
(c)	Technical Specifications				
(i)	Lamp Type	: Xenon lamp 300 watt			
(ii)	Colour temperature	: Approx 6000 K			
(iii)	Light outlets	: 1			
(iv)	Light intensity adjustment	: Continuously adjustable from 0 to 100% manually			
		: Qty-1			
7	FIBRE OPTIC CABLE				
(a)	Specifications				
(i)	Should be 3.5 mm and length : 230 Cm	Qty -2.			

  
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(b)	Specifications of Arthroscopy Shaver				
(i)	High speed shaver system with :				
(ii)	Stable torque throughout entire speed range				
(iii)	Optionally available high speed shaver hand pieces with rotational speed ranging from 1000 rpm to 15000 rpm				
(iv)	Oscillation of shaver within rotation speed from 500 rpm to 3000 rpm				
(v)	Choice between hand controls, control via footswitch or control from the console via LCD touch screen.				
(vi)	Drill and saw hand piece can be used.				
(vii)	Light weight handle with switches for				
(viii)	selection with rotation (clock wise anti clock wise and oscillation)				
(ix)	Control to increase or decrease the rotation speed.				
(x)	Suction control, on the handle itself				
(xi)	High speed hand piece with not more than 8000 rpm				
(xii)	Autoclavable				
(xiii)	Unit should be supplied with foot switch and Shaver handle.	Qty -1			
(xiv)	Specification for Shaver blades preferably reusable	Qty-1 each.			
(xv)	Aggressive cutter 4.5 mm, reusable				
(xvi)	Full radius Resector 4.5 mm, reusable				
(xvii)	Curved aggressive full radius resector, distal tip curved 15 deg up to 4.2 mm, reusable.				
(xviii)	Round Burr 5.5 mm, reusable				
(xix)	Finnish barrel burr 5.5 mm, reusable				
8	<b>FLUD PUMP MANAGEMENT SYSTEM</b>				
(i)	Irrigation pressure and flow rate are electronically controlled.				
(ii)	Flow rate 1-2 lts/min				
(iii)	Display of operating parameters set points and actual performance data.				
(iv)	The unit should be compact with front panel display of critical parameters like flow-reset and actual with audible alarm system in case of overpressure.				
(v)	Unit should be supplied with foot switch	Qty-1			

  
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(vi)	Preferably Removable tubing set	Qty-3		
9	HAND INSTRUMENTS			
(i)	All hand instruments should have one piece out shaft with excellent control over the cutting process			
(ii)	Punches			
(iii)	All purpose, low profile set more than 3 mm enables access to structures in narrow joint areas with large aperture angle allows efficient resection. Should have anti ergonomic handle for controlled, measured and non vibrating cutting.			
(A)	Qty-1 each			
(i)	Straight cutting width 2.7 mm, shaft diameter 3.5 mm Working length 13 cm			
(ii)	Upturned 15 deg Cutting width 2.7 mm, shaft diameter 3.5 mm, working length 13cm			
(iii)	Jaws curved 30 deg left Cutting width 2.7 mm, shaft diameter 3.5 mm, working length 13cm			
(iv)	Jaws curved 30 deg right Cutting width 2.7 mm, shaft diameter 3.5 mm, working length 13cm			
(v)	Jaws curved 90 deg right Cutting width 2.7 mm, shaft diameter 3.5 mm, working length 13cm			
(vi)	Jaws curved 90 deg right Cutting width 2.7 mm, shaft diameter 3.5 mm, working length 13cm			
(B)	Qty-1 each			
(i)	Straight Cutting width 3.4 mm, shaft diameter 3.5 mm, working length 13 cm.			
(ii)	Upturned 15 deg Cutting width 3.4 mm, shaft diameter 3.5 mm, working length 13 cm.			
(iii)	Jaws curved 30 deg left Cutting width 3.4 mm, shaft diameter 3.5 mm, working length 13 cm.			
(iv)	Jaws curved 30 deg right Cutting width 3.4 mm, shaft diameter 3.5 mm, working length 13 cm			
(v)	Jaws curved 90 deg right Cutting width 3.4 mm, shaft diameter 3.5mm, working length 13 cm			
(vi)	Jaws curved 90 deg right Cutting width 3.4mm, shaft diameter 3.5 mm, working length 13 cm.			
(C)	Scissor Punch, Qty-1 each			
(i)	Straight Cutting width 1.5 mm, shaft diameter 3.5mm, working length 23 cm;			
(ii)	Shaft curved left Straight Cutting width 1.5 mm, shaft diameter 3.5mm, working length 23cm;			

  
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(iii)	Shaft curved right Straight Cutting width 1.5mm, shaft diameter 3.5mm, working length 23 cm			
(D)	Grasper Qty-1 each			
(i)	Straight spoon shaped jaws Shaft diameter 3.5 mm, Working length 13cm;			
(ii)	Aggressive foreign body grasper Shaft diameter 3.5mm, Working length 13cm;			
(iii)	30 deg upturned spoon shaped Shaft diameter 3.5 mm, Working length 13cm;			
(E)	Rasp and Curette;			
(i)	Oval curette curved 10 deg, length 13 cm			
(ii)	Oval curette curved 30 deg, length 13cm			
(iii)	Rasp straight, narrow, fine working length 13 cm			
(iv)	Rasp narrow curved, Working length 13 cm			
10	<u>Specification of ACL Set.</u>			
(i)	Instruments set for bone tendon bone as for soft tissues			
(ii)	Tibial tunnel Guide Anterior Cruciate Ligament Qty-1			
(iii)	Variable angle, tunnel angle between 40 deg and 60 deg.			
(iv)	With specially designed tip for viewing the exit of the target wire from above before placement			
(v)	With special fixation mechanism for secure and continuous fixation of the guide pin in every position			
(vi)	The guide should have stable construction which prevents winding and torsion of the guide and provides extremely high target precision			
(vii)	Design should be sturdy allows absolutely no area for play between angles			
11	Tendon Stripes 6-7 mm			
(i)	Drill Wire Qty -10			
(ii)	Diameter 2.4 mm			
(iii)	Length 32 cm, pyramidal shape			
12	Headed Bone Drill Qty- 1 each			
(i)	Diameter 4.5,7,8,9,10 and 11 mm			
(ii)	Should have marking			
(iii)	Cannulated, for use with drilling wire, diameter 2.4 mm			
(iv)	Tendon Striper:			
(v)	Diameter 7 mm			
(vi)	Length 30 cm			

  
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(vii)	Should have length marks on the stripper for measurement of the length of the graft			
13	Tendon Thickness Tester Qty-1			
(i)	For determination of tendon thickness from 6mm to 10.5 mm in 0.5 mm increments			
(ii)	Should provide precise thickness measurement with a flap mechanism to measure the graft when it is tensioned on the graft board			
(iii)	No threading through the tendon or the bone block should be required			
14	Femoral Tunnel Guide, Anterior Cruciate Ligament Should consist of Qty-1			
15	Handle Qty-1			
16	Attachments for 4,5,6,7,8 mm offset Qty-1			
17	Curette, oval, large, curved 10 deg, length 13 cm Qty-1			
18	Rasp narrow curved, fine serration, length 13 cm Qty-1			
19	Tendon hook Qty-1			
20	Tendon Board for cleaning and preparing the graft Qty-1			
21	Graduated scale for measurement of the graft			
22	Facility for preparation and initial tensioning of the graft.			
23	Marking for the decombination of the graft portion in the femoral tunnel interparticular and tibial tunnel			
24	Including a retainer for femoral fixation button			
(a)	Thread Clip Qty-1			
(b)	Length Gauge Qty-1			
(c)	Graduated			
(d)	Length 23 cm			
25	Thread Hook Qty-1			
26	Drilling wire with eye Qty-5			
(a)	Diameter 2.4 mm			
(b)	Length 38 cm, spiral-shaped polishing			
27	Specifications of PCL Instruments			
(a)	Tibial target guide for PCL Qty-1			
(b)	Femoral PCL aimer, graduated, length 14.5 cm Qty-1			

  
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(c)	Awl for PCL, 1.5 mm dia 4mm, length 20 cm			
28	Raspatory, crescent shape, length 13 cm Qty-1			
29	Blunt spoon for PCL with T shaped handle Qty-1			
30	Suture retriever for PCL with T shaped handle Qty-1			
31	<u>Instruments for meniscus repair</u>			
(a)	inside techniques of meniscus repair in posterior horn area of lateral and medial meniscus. Suture material used with the see should be monofilament 2-0 to 3			
(b)	Handle for suture attachments			
(c)	Wheel attachment to roll suture			
(d)	Suture attachment straight, hook shaped, length 13 cm			
(e)	Suture attachment angled 180 deg right, length 13 cm			
(f)	Suture attachment angled 180 deg left, length 13 cm			
(g)	Suture attachment angled 360 deg right, length 13 cm			
(h)	Suture attachment angled 20 deg upward, length 13 cm			
(i)	Suture attachment angled 20 deg upward, length 14 cm			
(j)	Cannula to use with suture attachment			
(k)	Obturator Cannula			
(l)	Knot pusher			
(m)	Suture curette, for retinaculum suture with handle			
(n)	Thread grasping forceps			
32	<u>Mobile Video Trolley</u>			
(a)	Mobile video trolley rides on 4 antistatic dual wheels.			
(b)	Wheel diameter not less than 12 cm			
(c)	Two equipped with locking breaks			
(d)	One camera head mount			

  
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(e)	Integrated power board provides connection to all units.			
(f)	Channel inside the stands to avoid hanging of the cables.			
(g)	One drawer with lock			
(h)	Should have inbuilt arm for 26 inch TFT monitor			
(i)	One adjustable swivel arm for monitor can be mounted either on left or on right stand for touch screen			
33	<u>Arthroscopy Leg holder</u>			
(a)	Arthroscopy Leg holder, with Qty - 1			
(b)	Clamp 25 mm and 30 mm			
(c)	Cushion			
(d)	Strip for tightening			
34	<u>Data Management System</u>			
(a)	The System Should have			
(b)	Digital storage of still images, Video sequences & Audio Files in full HD format.			
(c)	Sterile, Ergonomic operation via touch screen, camera head buttons & foot switch.			
(d)	Efficient archiving on DVD or CD-ROM, both multi-session and multi patient.			
(e)	Should be able to record full HD format			
(f)	Automatic creation of standard reports			
(g)	Computer and monitor to be used in OR should be certified			
(h)	All required accessories should be supplied with the system			
(i)	15" touch screen should be supplied with the system			
(j)	The unit should be compact and should be medical grade computer			
35	<u>Shoulder Arthroscopy Instruments</u>			
(a)	Cannula system for Shoulder Arthroscopy			
(b)	Diameter not more than 8.25 m working not less than 70 mm preferably with reusable metal cannulas and transparent plastic cannulas.			

  
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(c)	The system should be supplied with the following items for an optimum control of the direction & position of the portal under vision. The system provides a portal to the joint by merely dilating the soft tissue without injuring.			
(d)	Size Positioning needle			
(e)	Size Obturator for positioning needle			
(f)	Size guide wire diameter 0.7mm			
(g)	One Cannulated dilator			
(h)	One handle for dilator			
(i)	Two housing for use with metal and transparent cannula			
(j)	Ten set of gaskets, double flap to avoid intra articular pressure			
(k)	One handle for introducing cannula			
(l)	One obturator for cannula			
(m)	Two metal cannula, reusable			
36	Ten Transparent Cannula, diameter not more than 3.2mm, Qty 10 Working length not less than 70 mm			
(a)	Should be compatible with obturator and introducer			
37	Charging rod, length 35 cm, Qty -1			
38	Knot pusher Qty-1			
39	Suture retrieval forceps Qty-1			
40	Punch, Working length 18 cm Qty-1			
41	Hook Scissors, Working length 18 cm Qty-1			
42	Grasping Forceps, Working length 18 cm Qty-1			
43	Crochet hook, Working length 15 cm Qty-1			
44	Suturing instruments for Rotator Cuff, the system should consist of Qty-1 each			
45	Handle			
(a)	Wheel attachment for suture size 1/2 mono and multifilament			
(b)	Suture attachment straight, distal tip curved, 7 mm in height			
(c)	Suture attachment straight, distal tip curved like hook, not less than 8.7 mm in height.			

  
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(d)	Suture attachment straight, distal tip curved like hook, not less than 10 mm in height.			
(e)	Suture attachment angled 30 deg to the right, not less than 8 mm in height.			
(f)	Suture attachment angle 30 deg to left, not less than 8 mm in height			
(g)	Hook and retractor graduated, Diameter 3.5 mm, working length 18 cm, length of hook 3cm Qty-1			
(h)	Crotche hook			
(i)	Threaded Drill for preparation of tunnel for anchor Qty-1			
(j)	Glenoid drill guide Qty-1			
(k)	Suture shuttle instrument curved downward, tip opens downward Qty-1			
(l)	Rap working length q7cm Shaft diameter 5.5mm			
(m)	For Glenoid			
(n)	For SLAP			
(o)	Elevator working length 17 cm Shaft diameter 6mm			
(p)	30 deg curved			
(q)	15 deg curved			
46	<b>Hip Arthroscopy Set</b>			
(a)	Arthroscope : Autoclavable Qty-1			
(b)	Wide angle Forward-Oblique and lateral scope			
(c)	Field of view :			
(d)	Angle of View : 30° and 70°			
(e)	Diameter 4mm			
(f)	Length 16 cm to 18 cm			
(g)	Fibre Optic light transmission incorporated			
(h)	Standard ocular widow for coupling camera head			
(i)	Scratch resistance sapphire quoted tip lens			
(j)	Rod lens system for optimum, brightness, contrast and definition			
47	<b>Arthroscope Sheath. Quick Coupling</b> One			
(a)	Diameter 5.5 mm			
(b)	Working length 12 cm			
(c)	With 2 rotatable stopcocks			

  
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(d)	Autoclavable, for use with telescope 30° and 70°			
(e)	Blunt obturator, Autoclavable : for use with arthroscope sheath diameter 5.5 working length 12 cm	One		
(f)	Handle with cannulated obturator for use with arthroscopy sheath	One		
(g)	Hook and Refractor	One		
(h)	Straight, graduated, diameter 3.5 mm, working length 8.5cm, length of hook 2mm			
(i)	Shaft curved 30 deg, graduated, diameter 3.5 mm, working length 8.5 cm, and length of hook 2 mm			
(j)	Shaft curved 70 deg, graduated diameter 3.5mm, working length 8.5 cm, and length of hook 2mm			
48	Working Instruments			
(a)	Positioning needle with stylet, dia 2.1 mm, length more than 20 cm.			
(b)	Guide wire, 1.5 mm, length not less than 40 cm			
(c)	Cannulated dilator for use with guide wire, length not less than 30 cm			
49	Set of working Cannula			
(a)	Threaded cannula, transparent, inner dia not less than 8 mm, working length not less than 90 mm.			
(b)	Handle for cannula			
(c)	Cannulated obturator for use with handle			
(d)	Housing for gasket			
(e)	Set of gaskets for housing			
(f)	Punch, jaws curved 15 deg up, working length 20 cm, cutting width 3.4 mm			
(g)	Punch shaft curved 15 deg up, working length 20 cm, cutting width 3.4 mm			
50	Grasper, aggressive, working length 20 cm.			
(a)	Curette curved upto 20 deg.			
(b)	Knife, curved, sharp double ended, working length 20 cm			
(c)	Aimer for portal placement			
(d)	Aimer with attachment for bullet			
(e)	Bullet short, 10.5 cm			

  
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## POWER DRILL MACHINE

### Drill and Reamer Hand piece:

- Selection of Drilling and Reaming with the built in Switch option in same hand piece
- Selection of the drilling and reaming with the same attachment
- Should have dual trigger for forward/ reverse and oscillation mode
- Maximum speed of 1200 rpm in drilling, 270 RPM in reaming
- Should have variable speed control on the hand piece
- Should deliver maximum torque of 150 in/lbs
- Drill torque should be 35 in/lbs
- Should have DC brush less motor for low maintenance
- With appropriate adaptors for drilling, reaming and pin placement and wire placement
- Future up gradation option for Navigation interface for Joint replacement surgeries
- Weight of hand piece with battery should be not more then 3.5 lbs
- Fully Cannulated 4.0 mm hand piece
- Should have Pistol grip Hand piece
- Tool less 360 degree attachments insertion
- Should be autoclavable
- Dedicated Forward and Reverses switch with safe mode

### Sagital Saw Hand piece:


- Should have two speed controls with standard and fast mode. Free speed of 10000 - 12000 cycles per minute.
- Saw Noise level should not more then 89db
- Weight of hand piece with battery should be not more then 3.5 lbs
- Blade mount should be adjustable to different angles with 360 degree rotation
- Should have tool less mounting of accessories
- Should have Dc brush less motor
- Should be autoclavable
- Should have safe mode


### Reciprocating Saw Hand piece:

- Should have Safe Mode
- Should have minimum 13500 CPM
- Weight of hand piece with battery should be not more then 3.5 lbs
- Should have DC brush less motor for low maintenance.
- Should have Pistol grip Hand piece
- Should have tool less mounting of accessories for all blades or attachments. .
- Saw noise level should not more then 93db
- Should be autoclavable.
- With different blades it should have maximum speed of 13500CPM

### Precision Saw Hand piece:

- Should have two speed controls with standard and fast mode. Free speed of 10000 - 12000 cycles per minute.
- Should move only blade tip for better precise cuts
- Should be able to hold the blade for more precise patella and precision cut
- Saw Noise level should not more then 89db
- Weight of hand piece with battery should be not more then 3.5 lbs
- Blade mount should be adjustable to different angles with 360 degree rotation
- Should have tool less mounting of accessories
- Should have Dc brush less motor
- Should be autoclavable
- Should have safe mode

  
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Contd - with Extra  
Hand set

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## **POWER DRILL HANDSET EXTRA**

### **Sternum Saw Hand piece:**

- Should have Safe Mode
- Should have minimum 14000 CPM
- Weight of hand piece with battery should be not more then 3.5 lbs
- Should have DC brush less motor for low maintenance
- Should have Pistol grip Hand piece
- Should have tool less mounting of accessories for all blades or attachments
- Saw noise level should not more then 93db
- Should be autoclavable.
- With different blades it should have maximum speed of 14000CPM
- Should have option of Sternum Guard

### **Drill and reaming Attachments:**

- 1/4 inch Jacobs Drill Attachment with key
- Keyless Chuck
- Hudson Modified Trinkle attachment
- Pin collet
- K Wire collet

### **Battery Charger:**

- 220-240 volts charger and should have the feature to count the charging cycle for a
- particular battery,
- Should have capability to identify the worn out battery
- Should have to charge four batteries at a time
- Should have an indicator to provide battery status for charging.
- Should be able to check over autoclaved battery cycles (Number of Time and Total time)
- Should have reconditioning futures for battery
- Should be able to charge different batteries with same charger

### **Battery Kit:**

- Ni Mh batteries with low internal impedance to deliver higher current than other battery
- types,
- Ni Mh cells with capacity to produce more torque and non autoclavable with life of 300
- approximate charging cycles,
- Should have a run time of minimum 21 minutes
- Should include Autoclavable outer housing
- Shield to protect battery from the housing
- 180 degree opening of battery housing for easy insertion of battery
- Should have option for autoclavable batteries

### **Sterilization Case:**

- Should be accommodate all hand piece, attachment and accessories for autoclave

  
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Tender No:

Equipment Name: C-arm

Specification for High end C Arm

Technical Specifications
<b>A) X RAY GENERATOR</b>
Frequency: 40 KHz or better
Power Output: 20 KW or more
KV range: 40-110 KV or better
mA in radiography: 20 mA or more
mA in fluoroscopy: 0.1 to 4 mA or more in normal fluoroscopy and 12 mA or more in High Level Fluoro
Should have facility for continuous fluoroscopy and Pulse fluoroscopy (Pulse rate upto 8 pulse per second)
Should have Digital Spot for high quality single image, 16 mA or more.
Housing heat capacity of minimum 700 KHU and cooling rate of more than 12,000 HU/Min
<b>B) X-Ray Tube Head</b>
Must have anode heat capacity of min 70,000 HU & cooling rate of min 35,000 HU/min
Should have dual focal spots
Collimation: motorised iris and motorized rotating blades
Tube assembly filtration of 3.0mm Al or higher
<b>C) C-Arm mechanism and control panel (digital work station)</b>
Locks for stabilization at desired position
<b>It should have the following range of movements:</b>
Motorized vertical movements more than 400 mm
Horizontal travel : 200 mm or more
Orbital movement: (-) 30 deg To (+)90Deg (120 Deg or more)
Swing/panning movement: +/- 12 degrees or more
Depth of C-arm : 650 mm or more
<b>D) Control Panel (Digital workstation)</b>
<b>It should have the following facilities:</b>
System should have capability of Pulse Fluoroscopy option to reduce to radiation exposure with 1,2,4,8 pulse per second, which should be easily user selectable.
Fluoroscopy and Radiography exposure on switching
Image rotation from control panel
Image intensification, mode selection (normal and zoom)
Automatic brightness stabilizer
Auto dose rate control.
Collimation for radiography
<b>E) Integrated image processing, recording and memory system:</b>
<b>a Image Intensifier Tube</b>
Input Diameter 9" with Triple field (9/6/4)
Minimum Central resolution (at monitor) : 2.0 lp/min or better at 9" FOV
<b>b CCD camera</b>
CCD camera with 1K x1K resolution for high resolution image acquisition.
<b>c Integrated image processing, memory and recording system should have</b>
Medical Grade Monitor (Two Nos)
Min 18 inch or more, black and white, flicker free, high resolution (1280 x 1024 pixels or better), medical grade flat screen TFT, automatic and manual control of brightness and contrast, mounted on mobile trolley with locking device.

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16/11/17

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Final

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Specification of Knee Arthroscopy Basic Training set with camera and  
Knee Model

Combined/ Compact Camera, LED light Source & Monitor Module

The system should be compact and portable suitable for a variety of endoscopic applications from physician's offices to operating rooms in a variety of specialties.

The powerful all-in-one unit should consist of everything needed for endoscopic imaging, Video recording, and viewing of saved Videos, the monitor, camera, and light source.

**DISPLAY:**

Crystal clear display

- 15" LCD display
- LED backlight display technology for extended service life, enhanced image brightness and reduced power consumption
- Image rotation
- 24 bit color depth for lifelike color display
- DVI video output for brilliant transmission quality

**LED Light Source:**

- High-performance LED light source: Light output similar to Power LED 175
- Color temperature of 6000 K - similar to daylight - guarantees color fidelity
- Long lamp life with an average lamp life of 30,000 hours

**Flexible storage options:**


- SD slot for high storage capacity
- USB ports for external hard drives and USB sticks

**Easy, extremely reliable control:**

- Membrane keyboard included, suitable for wipe-down disinfection
- Hot keys for rapid and direct manipulation
- Arrow buttons for intuitive control
- Connection socket for pedal control without lag time
- Stroboscopy mode can be activated via a special footswitch

**Technical Specification of Camera Head:**

  
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Image sensor:  
 Resolution:  
 Pixels  
 Signal-to-noise ratio:  
 AGC:  
 LENSE

1/4" CCD-Chip.  
 > 450 lines (horizontal).  
 752(H) x 582(V)  
 >= 60 dB.  
 Microprocessor controlled  
 Integrated optical zoom  
 lens system 25-50mm  
 3 Lux (f 1.4).

Min. sensitivity:

S/NO.	SPECIFICATION	Qty
	<b>Basic Knee Arthroscopy Instruments</b>	
1.	Arthroscopy: Autoclavable > Wide Angle Forward Oblique and Lateral Scope. > Field of View. > Angle of View : 30° and 70° > Diameter 4 mm > Length 16 Cm to 18 Cm > Fiber Optic Light Transmission Incorporated > Standard Ocular Window for Coupling Camera Head. > Rod Lens System for Optimum Brightness, contrast and definition.	1
2.	Arthroscopy sheath, rotatable (Qty-2) > Diameter 5.5 to 6 mm > Working length 12 cm > With 2 Rotatable Stopcocks > Autoclavable for use with Telescope 30° and 70°	2
3.	Semi Sharp obturator (Qty-2) > Use with Arthroscopy Sheath, Working Length 12 cm	2
4.	Hook Probe/ Graduated (Qty-1)	1
5	<b>HAND INSTRUMENTS</b> All Hand instruments should have One Piece Outer Shaft with Excellent Control over the Cutting Process. Punches —(One Each) (A) Punch • Straight Cutting width 2.7 mm, Shaft Diameter 3 mm Working Length 12 cm • Upturned 15 deg Cutting Width 2.7 mm, Shaft Diameter 3 mm Working Length 12 cm • Jaws Curved 30 deg Left Cutting Width 2.7 mm, Shaft Diameter 3 mm Working Length 12 cm • Jaws Curved 30 deg Right Cutting Width 2.7 mm Shaft Diameter 3mm Working Length 12 cm • Jaws Curved 90 deg Left Cutting Width 2.7 mm Shaft Diameter 3mm Working Length 12 cm • Jaws Curved 90 deg Right Cutting Width 2.7 mm, Shaft Diameter 3mm Working Length 12 cm • Straight Cutting width 2.7 mm, Shaft Diameter 3 mm 15deg curved upward handle Working	One Each

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Length 12 cm

One Each

(B)

- Straight Cutting Width 3.4 mm Shaft Diameter 3 mm Working Length 12 .cm
- Upturned 15 deg Cutting Width 3.4 mm Shaft Diameter 3mm Working Length 12 cm
- Jaws Curved 30 deg Left Cutting Width 3.4 mm Shaft Diameter 3 mm Working Length 12 cm
- Jaws Curved 30 deg Right Cutting Width 3.4 mm Shaft Diameter 3 mm Working Length 12 cm
- Jaws Curved 90 deg Right Cutting Width 3.4 mm Shaft Diameter 3 mm Working Length 12 cm
- Jaws Curved 90 deg Left Cutting Width 3.4 mm shaft Diameter 3 mm Working Length 12 cm
- Straight Cutting Width 3.4 mm Shaft Diameter 3 mm ,15deg curved upward Handle Working Length 12cm
- Through cutting punch cutting width 1.5mm straight jaws, sheath diameter 3mm straight handle working length 12cm
- 15deg upward punch cutting width 1.5mm ,sheath diameter straight handle 3mm working length 12cm
- Oval upbiterthrough cutting cross toothed, jaws curved 15deg upwards ,sheath diameter 3mm working length 12cm
- Oval upbiterthrough cutting cross toothed, jaws curved 15deg upwards ,sheath diameter 3mm, 15deg curved upwards handle working length 12cm
- Backward cutting punch cross toothed ,cutting width 3.4mm, straight jaws, sheath diameter 3mm, working length 12cm
- Suction Punch Sheath Diameter 4.8mm working length 13cm

(C) Scissor Punch

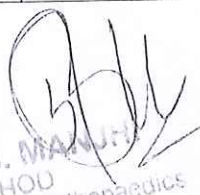
- Straight Cutting Width 0.5 mm, shaft Diameter 3 mm Working Length 12 cm
- Shaft Curved Left Straight Cutting Width 0.5 mm Shaft Diameter 3 mm Working Length 12 cm
- Shaft Curved Right Straight Cutting Width 0.5 mm Shaft Diameter 3 mm Working Length 12 cm

(D) Grasper

- Straight Spoon Shaped Jaws diameter 4.5mm/3.5mm/2.7mm(one each), shaft Diameter 3 mm, Working Length 12 cm
- Aggressive Foreign Body Grasper Shaft Diameter 3 mm, Working Length 12 cm
- 30 degree Upturned Spoon Shaped Shaft Diameter 3mm Working Length 12 cm with & without ratchet.
- Alligator Grasping forcep Shaft Diameter 3 mm, Working Length 12 cm
- Suture grasping forcep shaft diameter 3mm, working length 12cm
- Suture Forceps Straight jaws, sheath diameter 2.8mm working length 8.5cm
- Grasping forceps Jaw length 11mm, curved jaws 30deg upward straight sheath, working length 9.5cm


  
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	<ul style="list-style-type: none"> <li>Meniscus retractor serrated jaws, with teeth and with ratchet, straight jaws. Working length 13cm</li> <li>Meniscus grasping forceps with teeth and ratchet, straight jaws. Working length 13cm</li> <li>Meniscus grasping forcep with ratchet and straight jaws. Working length 13cm</li> </ul>	
6	<b>Knee Model for Basic Knee Arthroscopy training with clamp compatible With tables and easily adjustable. (Qty-2)</b>	Qty-2)

ALL THE INSTRUMENTS SHOULD BE USFDA APPROVED FROM THE SAME COMPANY

  
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