

List of Equipment and Instruments for Orthopedics
Department

Sr. No.	Equipment / Instrument	QTY.
1	Battery Drill & Reamer	1
2	Arthroscope system including power shaver , light source, Coablatoin system	1
3	High speed drill system	1
4	Drill	1
5	Pneumatic tourniquet	2
6	Deep freezer	1
7	C-Arm Machine	1
8	Broken Screw Removal Set	1
9	Broken Nail Removal Set	1
10	Large Fragment	1
11	Small Fragment	1
12	General Instruments	1
13	LC DCP & DCP Basic Instrument (L)	1
14	Wire instrument set	1
15	Locked compression plating system small	1
16	Locked compression plating system large	1
17	Chisel and impactor set	1
18	External fixator (large & medium)	1
19	CSS 4.5	1
20	CSS 6.5	1

**Annexure: Specification for equipment and instruments for
Orthopedics Department**

1. Battery Drill & Reamer

Drill and reamer hand piece

- Selection of Drilling and Reaming with the built in Switch option Drill / Ream 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 deliver maximum torque of 150 in/ Ibs
- Drill torque should be 35 in / Ibs
- Should have DC brush less motor for low maintenance.
- With appropriate adaptors for drilling, reaming and pin placement and wire placement.
- Future up gradation compatible for Navigation interface for joint replacement surgeries.
- Micro processor controlled hand piece can be calibrate for the consistence performance.
- Weight of hand piece with battery should be not more then 3.5
- Fully Cannulated 4.0 mm hand piece
- Should have pistol grip hand piece
- Tool less 360 degree attachments insertion
- Should be autoclave able
- Dedicated forward and reverse switch safe mode
- Can be calibrating for the consistence performance

Sagital Saw Hand Piece:

- Should have two speed controller with standard and fast mode Free speed of 1000- 12000 cycles per minute
- Micro processor controlled hand piece can be calibrate for the consistence performance
- Saw noises level should not more than 89db
- Weight of hand piece with battery should be not more than 3.5 Ibs
- Blade mount should be adjustable to different angles with 360 degree rotation
- Should have tool less mounting of accessories
- Should be autoclavable
- Should have safe mode

Reciprocating Saw Hand Piece:

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- Should have safe mode
- Should have minimum 13500 CPM
- Weight of hand piece with battery should be not more than 3.5 Ibs
- Micro processor controller Hand piece can be calibrate for the consistence performance
- 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 noises level should not more than 93db
- Should be autoclavable
- With different blades it should have maximum speed of 13500CPM

Drill and reaming Attachments:

- 1/4 inch Jacobs Drill attachment with key
- Keyless chuck
- Quick connect attachment
- Reamer attachment
- Hudson Modified trinkle attachment
- Pin collect attachment
- K wire collect Attachment

Battery Charges:

- 220-240 volts charges and should have the feature to count 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 cycle (Number of Time and total time)

Battery kit:

- NiMh / Ni Cd batteries -4
- Should have a run time of minimum 17 minutes
- Should include autoclavable outer housing
- Shield to protect battery from the housing
- 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.

2. Arthroscopy Equipment

S. No		
1.	Telescopes	
(a)	4mm x 30 deg Autoclavable Arthroscope	
(i)	Field of view: > 110 deg	
(ii)	Working length: around 160 mm	
(iii)	High quality distal lenses and rear ocular windows, scratch resistance	
(b)	4mm x70 deg autoclavable arthroscope	
(i)	Field of view: > 110 deg	
(ii)	Working length: around 160 mm	
(iii)	High quality distal lenses and rear ocular windows, scratch resistance	
2.	TROCAR / CALNNULA SET	
(i)	6.0 mm, high flow diagnostic cannula, double valve, fully rotatable cannula with fenestrated tip	
(ii)	4.5 mm conical obturator to fit in 6.0 mm cannula	
(iii)	4.5 mm blunt obturator to fit in 6.0 mm cannula	
3.	300 watt xenon light source	
(i)	Xenon light source, 300W, 230V AC.	
(ii)	Colour Temperature: >5800k	
(iii)	Bulb life: 500 hrs	
(iv)	Universal fiber optic cable with adapters, around 5mm x 12ft.	
4.	High definition camera system:-	
(a)	Camera control unit with USB video recording	
(i)	Power :	100-200 vac , 50/60Hz
(ii)	Classification :	internationality accepted classification
(iii)	Equipment Classification :	Protection against electrical shock.
(iv)	Protection against harmful ingress of water	Degree of safety application in the presence of flammable anesthetics with mixture of air oxygen or nitrous oxide.
(v)	CCU weight	Light weight with easy to handle controls
(vi)	Display output	50/60Hz
(vii)	Resolution	1920 x 1080i (native)
(viii)	Signal – to Noise	64db
(ix)	Ratio Shutter	PAL: 1/50 per second through 1,00,000 per second shutter speed
(x)	Video Outputs	HD Serial digital interface (HD- SDI), HD digital visual interface (HD-DVI) two digital visual interfaces supporting DVI – Digital (DVI-D) Yprpb video Output one video output Vp-p,yprpb

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		IEEE- 1394 Outputs one IEE y/c video outputs two y/c video outputs, combined luminance / chroma composite Output one analog, encoded video signal that includes vertical and horizontal synchronizing information
(Xi)	AC Leakage Current	
(xii)	CCU: Less than 300 microamps earth leakage	
(xiii)	Video Accessory Controls two mini – phono connectors	
(b)	HIGH DEFFINITION CAMERA HEAD:	
(i)	Equipments	Protection against electrical shock
(ii)	classification	International standards
(iii)	Video Imager	Three 1/3” interline transfer micro lens high sensitivity CCD image Sensor.
(iv)	Imaging Resolution	Vertical: 1080i native lines Horizontal 1920 native TV lines.
(v)	Signal – to noises Ratio	64 Db
(vi)	Video Data Acquisition	Three 14- bit RGB channels, digitized inside camera head itself
(vii)	Video Data transmission	High speed low voltage differential serial (LVDS) uncompressed 42-bit RGB digital transmission via long around 12 foot camera cable.
(viii)	Video output format	Full HD 1080i,100% compatible with SMPTE- 274 M :2005 HDTV Broadcast standard when used with the camera control unit
(ix)	Video field Rate	60Hz or 50Hz universal camera head, software switchable
(x)	Camera Head	Light weight around 200gms
(Xi)	Camera Head Cable	Long cable around 10 foot
(xii)	HD Camera Coupler	C- Mount coupler with focusing
5.	HIGH DEFINITION FLAT PANNEL MONITOR:	
	19” HD compitable LCD Monito.	
6.	POWER SHAVER SYSTEM	
(i)	Input voltage 240v : 50/60 Hz with minimal power consumption around 350	

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	VA	
(ii)	Two separate receptacles for motor drive and powered instrumentation	
(iii)	Speed of burrs : around 8000 RPM	
(iv)	Speed of blades : around 5000 RPM	
(v)	Hand piece: Autoclavable lightweight hand piece with suction facility and replacement cable long around 3m.	
(vi)	Maximum torque :around 30 oz/ inch	
(vii)	Variable speed footswitch preferably with blade / burr locking facility to minimize accidental injury with 3 operating modes	
(viii)	On – line LCD display for speed and direction referral.	
(ix)	Provisional for powered instrumentation like drill, Jacobs chuck and Sagittal Saw from control unit.	
9.	Arthroscopy Radiofrequency Ablation System	
(a)	Generator	
(i)	Bipolar radio frequency ablation generator console should perform plasma excision pure coagulation, homeostasis &	
(ii)	Bipolar multi electrode ablation system, hand controlled ablation probes with multiple button functions and should allow.	
(iii)	Foot switch control	
(iv)	Voltage driven system equating to levels. Should be able to generate fixed amount of power that should not	
(v)	Frequency	>100khz
(vi)	Operating Temperature	40 to 70 deg C
(vii)	Thermal penetration	100-200 microns
(viii)	Probes be equipped memory chip that contains specific optimized setting for each probe.	
(ix)	Monopolar and bipolar 90 degree high profile probes.	
10.	HAND HELD INSTRUMENTS	
	All hand held instruments should have strong outer shaft with minimal or no joints and with strong hinge design for distal punches, low profile with large square bit	
(i)	Basket punch Duckbill straight	
(ii)	Basket punch Duckbill upbiter curved right	
(iii)	Basket punch Duckbill upbiter curved left	

(iv)	Alligator Grasper	
(v)	Probe Straight	

3. High speed drill system

The drill should offer high torque in a compact size , making it suitable for a wide range of surgeries.

- Pneumatic like power with less noise
- Small and lightweight
- Quick set up and easy to use design
- Adjustable speed from 65-75,000 rpm
- Powered by the integrated power console
- Works with color coded tools and attachment

4. Drill

S.No	Item Description
1	Drilling & Reaming System
2	Driving
3	Include Motor, Stand, Foot Control, Flexible Shaft, Tool Kit.
4	Oil Bottle, & Traction Container.
5	Cannulated Drill Hand Piece
6	Maximum Speed 1200RMP & With Fixed S.S Jacob Chuck
7	Reaming Hand Piece
8	Maximum Speed 400RPM, Cannulated & A.O Type, Q.C
9	Pistol Grip Sagittal Saw With set of Blades
10	Flexible Shaft for Driving Unit (Extra)

5. Pneumatic Automatic Tourniquet

1. Should be European CE/USFDA Certified.
2. Company should be ISO certified.
3. Should have personalized pressure technology.
4. Should have automatic IVRA cuff lockout & leak detection.
5. Should have limb occlusion pressure & limb occlusion detection.
6. Should have dual port & dual cuff.
7. Should have table or pole mount.
8. Should have battery backup of 5-7 hrs.
9. Should have Touch screen display for user interface.
10. Compliant with international alarms.
11. Display: Should be 8-9" colour display.

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12. Should be provided reusable contour, small adult cuff & A.T.S cylinder cuffs with 90 degree port and limb protection sleeves of all size.
13. Equipment power input should be 220-240V AC, 50Hz fitted with Indian plug.
14. Reusable cuff should have following:

- A. Durable, high – quality material for longer wear.
- B. Single and dual bladder option with limb, thigh and leg cuff.
- C. Single and dual port option with limb, thigh and leg cuff.
- D. Single port single bladder cuff with limb, thigh and leg cuff.
- E. Positive locking connectors.
- F. Low profile design.
- G. Protection sleeves.

15. Accessories required with machine are following.

- A. Tourniquet Accessory Basket
- B. Tourniquet Stand, Telescoping, W / 28 Base.
- C. Dual Hose, Blue
- D. Dual Hose, Red
- E. LOP Sensor
- F. Hose, Red
- G. Hose, Blue

Hose Extensions, Sterile

- H. Sterile Dual Hose Extensions PLC – 36 in.
- I. Sterile Dual Hose Extensions Luer – 36 in.
- J. Sterile Single Hose Extensions PLC – 36 in.
- K. Sterile Single Hose Extensions Luer – 36 in.

16. Cuff size should be as following:

Tourniquet Cuff – Cylindrical Reusable:

Dual port, Single Bladder, Box of 1 with Sleeve Approx Size

- A. Reusable Cuff – 8 in. (20cm) x 2.75 in. (7cm)
- B. Reusable Cuff – 12in. (30cm) x 3.5in (9cm)
- C. Reusable Cuff – 18in. (46cm) x 4in. (10cm)
- D. Reusable Cuff – 24in. (61cm) x 4in. (10cm)
- E. Reusable Cuff – 30in. (76cm) x 4in. (10cm)
- F. Reusable Cuff – 34in. (86cm) x 4in. (10cm)
- G. Reusable Cuff – 42in. (107cm) x 4in. (10cm)
- H. Adult Reusable Cuff – 15in. (38cm) x 3in. (8cm)
- I. Small Adult Reusable Cuff – 17.5in. (44cm) x 3.5in. (9cm)

Dual Port, Dual Bladder, Box of 1with Sleeve Approx Size

- A. Reusable Cuff – 12in. (30cm) x 3.5in. (9cm)

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- B. Reusable Cuff – 18in. (46cm) x 4in. (10cm)
- C. Reusable Cuff – 24in. (61cm) x 4in. (10cm)

Single Port, Single Bladder, Box of 1 with sleeve Approx size

- A. Reusable Cuff – 8in. (20cm) x 2.75in. (7cm)
- B. Reusable Cuff – 12in. (30cm) x 3.5in. (9cm)

Tourniquet Cuff – Reusable Contour:

Dual Port, Single Bladder, Box of with Sleeve Approx size

- C. 9in. – 21in. Reusable Contour Cuff – Upper Limb
- D. 12in. – 30in. Reusable Contour Cuff – Thigh
- E. 9in. – 17in. Reusable Contour Cuff – Lower Leg
- F. 30in. – 39in. Reusable Contour Cuff – LRG Leg

Dual Port, Dual Bladder, Box of 1 with Sleeve Approx Size.

- G. 9in. – 21in. Reusable Contour Cuff - IVRA

Single Port, Single Bladder, Box of 1 with Sleeve Approx size

- H. 9in – 21in. Reusable Contour Cuff – Upper Limb
- I. 12in. – 30in. Reusable Contour Cuff – Thigh
- J. 9in. – 17in. Reusable Contour Cuff – Lower Leg
- K. 30in. – 39in. Reusable Contour Cuff – LRG Leg

Single Port, Dual Bladder, Box of 1 with Sleeve Approx size

- L. 9in. – 21in. Reusable Contour Cuff – IVRA

Tourniquet Cuff – Limb Protection Sleeve:

Disposable and Reusable Cylindrical, Sterile compatible

- M. 8 inch cuff Sleeve – (20cm)
- N. 12 inch cuff Sleeve – (30cm)
- O. 18 inch cuff sleeve – (46cm)
- P. 24 inch cuff Sleeve – (61cm)
- Q. 30 inch cuff Sleeve – (76cm)
- R. 34 inch cuff Sleeve – (86cm)
- S. 42 inch cuff Sleeve – (107cm)

Reusable Contour, Non – Sterile

- A. X- SM Adult – (8cm)
- B. SM Adult – (9cm)
- C. Contour Arm Cuff
- D. Contour Thigh Cuff
- E. Contour Leg Cuff

17. Price should quote with 5 years warranty and 5 years of CMC.

18. Items cover under warranty / CMC.

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- A) Price of all consumable and CMC Should be quoted separately and frozen for the period including warranty and CMC.
- B) Should have local service facility and should have the necessary equipment's to carry out preventive maintenance test.
- C) Onsite Physical demonstration and training of the equipment to the end users with all the requested facilities will be mandatory.
- D) Availability of spares for at least 10 years after date of installation.
- E) Original literature, and not the photocopy, to be supplied with the quotation.
- F) Company should certify that model quoted is latest and not obsolete and spares are available for minimum 5 years after warranty (5years).
- G) Accessories should be included in warranty and CMC.
- H) Should provide the preventive maintenance in every 3 month.
- I) Comprehensive warranty and CMC would include all parts – plastic, metallic, glass, batteries and rubber (without any exclusion) except the consumable accessories listed above.
- J) Comprehensive warranty and CMC would include periodic checking and periodic calibration of all parameters strictly as per manufacturer's recommendations (at least every 3 month) and any spares of standards required for that.

6. Deep freezer

- 1. Type -86°C ULT Freezer
- 2. Cabinet Type Upright/ vertical
- 3. Cooling Type Direct cooling
- 4. Defrost Mode Manual
- 5. Refrigerant HC
- 6. Cooling performance (°C) -86
- 7. Temperature Range (°C) -40~-86
- 8. Controller Microprocessor
- 9. Display LED
- 10. Capacity(L/Cu.Ft) 388/13.7
- 11. Alarm for: High/Low Temperature, Remote Alarm, Hot Condenser , Power Failure, High/Low, Sensor Error, Low Battery, High Ambient Temp, Door Ajar
- 12. With: Caster, Foot ,Test Hole , Shelves/Inner Doors: 3/2 ,USB Interface

7. C ARM SPECIFICATIONS

SPECIFICATIONS

Image Intensifying Tube :	9 inches Normal = 9", Zoom ₁ = 6", Zoom ₂ = 4.5".
CCD Camera :	Sony high resolution camera
.	
.	
Monitor	Two nos. 17" monitor along with a trolley
Rotation	180 degrees
Motorized Up/Down	430mm
Horizontal Travel	200mm
.	
Arc Orbital Movement	120 degrees
Wig Wag	±12.5 degrees.
Display	Fumigation friendly laminated LED water resistance display
.	
Technic Selection	Fluoro
Fluoroscopic Timer	Five minutes cumulative timer with buzzer.
Fluoroscopic Timer	Five minutes cumulative timer with buzzer.
Fluoro mA	Continuously variable.
Temp. Sensor.	Automatic cut off provided.
Power supply	Single phase 230 V, ± 10% AC, 50 Hz
Automatic Brightness Control	Provided to operate the equipment in automatic mode for hands free operation

DIGITAL IMAGE MEMORY SYSTEMS:

Digital memory 100 frames and expendable on Pen Drive:

1. Feature of live and PULSE fluoroscopy.
2. Averaging of frames 1 to 16 frame.
3. Permanent storage up to 100 frame.
4. Negative image.
5. Image rotation.

8. Broken Screw Removal Set

- The plates and screw are the basic requirements of different orthopedic surgeries, especially in the forearm, the DCP (Dynamic Compression Plates) with 3.5 mm screws are used.
- Once the fracture is healed there is an absolute necessity to remove the implants, since the DCP sinks inside the bone causing severe deformity to the healthy bone.
- The DCP with 4.5 mm & 6.5 mm cancellous screws are also for Humeral, Tibial & Femoral shaft fractures.
- During the removal of the implants most of the time, the screws are broken causing serious technical problems to the surgeon.
- If the instruments are in possession, it is quite easy for the removal of the broken implants.
- The set should have screwdrivers & screwdriver shafts, forceps for screw removal, conical extraction screws with T handle, hollow reamers & extraction bolts with T handle.
- The instrument set should contain a Hollow Reamer for 3.5/4.0mm Screws
- The instrument set should contain a Spare Reamer Tube for no. 309.035
- The instrument set should contain a Extraction Bolt for 3.5/4.0mm Screws
- The instrument set should contain a Extraction Screw, conical, for 2.7mm, 3.5mm and 4.0mm Screws
- The instrument set should contain a Hollow Reamer for 4.5mm Screws
- The instrument set should contain a Spare Reamer Tube
- The instrument set should contain a Extraction Bolt for 4.5mm Screws
- The instrument set should contain a Extraction Screw, conical, for 4.5/6.5mm Screws
- The instrument set should contain a Hollow Reamer for 5.0/6.0/6.5/7.0mm Screws
- The instrument set should contain a Spare Reamer Tube for no. 309.065
- The instrument set should contain a Extraction Bolt, for 5.0/6.0/6.5/7.0mm Screws
- The instrument set should contain a anodized Aluminium Plate
- The instrument set should contain a Sharp Hook of length 155mm
- The instrument set should contain a Forceps for Screw Removal, L 205mm
- The instrument set should contain a Gouge, 10mm wide and length 205mm
- The instrument set should contain a T-Handle with quick coupling of length 80mm

9. Broken Nail Removal Set

- The instrument set should be used for extraction of nails of diameters from 9-14mm
- The instrument set should contain a Connector for Extraction hook
- The instrument set should contain a Extraction Hook of length 480mm for 9 diameter nails

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- The instrument set should contain a Long Extraction Hook 9-11 diameter nails
- The instrument set should contain a Long Extraction Hook 11-14 diameter nails

10. Large Fragment

- The instrument set should contain Drill Bit with diameter 3.2mm, Length 145/120mm for quick coupling
- The instrument set should contain Drill Bit with diameter 4.5mm, Length 147/120mm for quick coupling
- The instrument set should contain large Countersink with length 180mm
- The instrument set should contain T-Handle with quick coupling of Length 80mm
- The instrument set should contain Tap for 4.5mm Cortex Screws with length 70/125mm
- The instrument set should contain Tap for 6.5mm Cancellous Bone Screws Length 195mm
- The instrument set should contain Double Drill Sleeve 4.5/3.2
- The instrument set should contain Insert Drill Sleeve 4.5/3.2, Length 80mm
- The instrument set should contain Double Drill Sleeve 6.5/3.2
- The instrument set should contain Large Screwdriver Shaft with hexagonal recess & length 100mm
- The instrument set should contain Large Screwdriver with hexagonal recess & groove with length 240mm
- The instrument set should contain Large Holding Sleeve of length 120mm
- The instrument set should contain Depth Gauge for 4.5 to 6.5mm Screws
- The instrument set should contain Sharp Hook, Length 155mm
- The instrument set should contain Articulated Tension Device
- The instrument set should contain Combination Wrench, 11mm, Length 140mm
- The instrument set should contain DCP® Drill Sleeve 4.5
- The instrument set should contain LC-DCP Drill Sleeve 4.5
- The instrument set should contain Universal Drill Sleeve 4.5
- The instrument set should contain Bending Template for DCP® 4.5 and LC-DCP 4.5, Length 210mm
- The instrument set should contain Bending Template for DCP® 4.5 and LC-DCP 4.5, Length 120mm
- The instrument set should contain Bending Template for DCP® 4.5 and LC-DCP 4.5, Length 155mm
- The instrument set should contain Ratchet Wrench, 11mm, Length 140mm
- The instrument set should contain Torque-Limiting Screwdriver, Length 255mm, for 3.5 mm hexagon
- The instrument set should contain Drill bit with diameter 3.5mm for metal
- The instrument set should contain Conical Extraction Screw for 4.5/6.5mm Screws
- The instrument set should contain Drill Bit with diameter 4.3mm, Length 221mm
- Screwdriver Shaft 3.5, self-retaining, L 110mm

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- The instrument set should contain Threaded LCP Drill Guide for 4.3mm Drill Bit
- The instrument set should contain Screw Holding Sleeve for LCP 4.5/5.0
- The instrument set should contain Handle with Quick Coupling

11.Small Fragment

- The instrument set should contain Drill Bit with diameter 2.5mm & Length 110/85mm for quick coupling
- The instrument set should contain Drill Bit with diameter 3.5mm & Length 110/85mm, for quick coupling
- The instrument set should contain Countersink Shaft 3.5, Length 72mm
- The instrument set should contain Tap for 3.5mm Cortex Screws Length 50/110mm
- The instrument set should contain Tap for 4.0mm Cancellous Bone Screws Length 110mm
- The instrument set should contain T-Handle with quick coupling, Length 80mm
- The instrument set should contain Double Drill Sleeve 3.5/2.5
- The instrument set should contain Insert Drill Sleeve 3.5/2.5, Length 42mm Drill Bit with diameter 2.5mm
- The instrument set should contain Small Screwdriver with hexagonal recess with Holding Sleeve
- The instrument set should contain Small Screwdriver Shaft with hexagonal recess & Length 100mm for quick coupling
- The instrument set should contain Small Screwdriver with hexagonal recess & groove, Length 200mm
- The instrument set should contain Holding Sleeve, Length 80mm
- The instrument set should contain Depth Gauge for 2.7mm to 4.0mm Screws
- The instrument set should contain Sharp Hook, Length 155mm
- The instrument set should contain Holding Clip 4.5 - 7.0mm
- The instrument set should contain Screw Forceps, self-retaining, Length 85mm
- The instrument set should contain DCP® Drill Sleeve 3.5 for neutral and load position
- The instrument set should contain Bending Iron, slit widths 4.5/2.5mm, Length 150mm, for Plates 2.7 and 3.5
- The instrument set should contain Bending Iron, slit widths 2.5/4.5mm, Length 150mm, for Plates 2.7 and 3.5
- The instrument set should contain Bending Pliers for Plates 2.4 to 4.0, Length 230mm
- The instrument set should contain Bending Template for DCP® 3.5 and LC-DCP 3.5, Length 87mm
- The instrument set should contain Bending Template for DCP® 3.5 and LC-DCP 3.5, Length 114mm
- The instrument set should contain Wire Bending Pliers, Length 155mm

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- The instrument set should contain Bending Iron, for Kirschner Wires 1.25 to 2.5mm dia., Length 120mm
- The instrument set should contain Reduction Forceps with points, Length 130mm
- The instrument set should contain Reduction Forceps with points, wide, ratchet lock, Length 132mm
- The instrument set should contain Reduction Forceps, toothed, ratchet lock, Length 140mm
- The instrument set should contain Bone Holding Forceps, self- centering, speed lock, Length 190mm
- The instrument set should contain Retractor, small, 8mm wide, short narrow tip, Length 160mm
- The instrument set should contain Periosteal Elevator, round edge, 6mm wide, Length 200mm
- The instrument set should contain Retractor, 15mm wide, Length 160mm
- The instrument set should contain Torque-limiting Attachment for LCP 3.5, 1.5Nm
- The instrument set should contain Drill bit with diameter 2.5mm for metal
- The instrument set should contain Conical Extraction Screw for PC-Fix
- The instrument set should contain Drill Bit with diameter 2.8mm, Length 165mm for quick coupling
- The instrument set should contain Screwdriver Shaft 2.5, Length 80mm
- The instrument set should contain Screw Holding Sleeve for LCP 3.5
- The instrument set should contain Threaded LCP Drill Guide for 2.8mm Drill Bit
- The instrument set should contain Handle with Quick Coupling

12. General Instruments

- The instrument set should contain Small Sharp Bone Hook, Length 230mm
- The instrument set should contain Medium Sharp Bone Hook, Length 230mm
- The instrument set should contain Retractor, 8mm wide, short narrow tip, Length 220mm
- The instrument set should contain Retractor, 18mm wide, short narrow tip, Length 235mm
- The instrument set should contain Retractor, 24mm wide, long and wide tip, Length 270mm
- The instrument set should contain Curved shaft Periosteal Elevator, 14mm wide, Length 200mm
- The instrument set should contain Round edged Periosteal Elevator, 6mm wide, Length 200mm
- The instrument set should contain Straight shaft Periosteal Elevator, 14mm wide, Length 200mm
- The instrument set should contain Hammer 500g, Length 230mm
- The instrument set should contain Chisel Handle, Length 185mm
- The instrument set should contain Chisel Blade, 10mm wide, thickness 0.9mm, Length 81mm

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- The instrument set should contain Chisel Blade, 16mm wide, thickness 0.9mm, Length 81mm
- The instrument set should contain Chisel Blade, 25mm wide, thickness 0.9mm, Length 81mm
- The instrument set should contain Gouge, curved, for cancellous bone graft harvest., 10mm wide, Length 250mm

13.LC-DCP & DCP BASIC INSTRUMENT SET (LARGE)

Material – Stainless steel

Grade - ISO 5832-1

The surgeon should be able to use these instruments in open reduction and for internal fixation by plating in fractures of large bones, like femur, tibia and humerus.

The instrumentation should allow for drilling, tapping, compression, neutralization, buttressing and fixation of 4.5 mm cortical screws and 6.5 mm Cancellous screws.

It should contain drill bits in 3.2 and 4.5 mm dia, taps for 4.5 mm cortical screws and 6.5 mm Cancellous screws, screw drivers, depth gauges, drill guides, bending press for 4.5 mm plates and contain templates for 4.5 mm compression plates and low contact compression plates

- The Instruments should have a Universal drill sleeve 4.5 /5mm
- A self retaining hexagonal screwdriver with torque limiting attachment having a 4Nm torque.
- The instrument should have LCP Bending iron 4.5/5 for bending the implants
- The instrument should have conical extraction screws of length 59mm & 196mm & drill
- bit 3.5mm dia for metal for extraction of damaged screws
- The torque limiting screwdriver should have screw-holding sleeve along with all other essential instruments to use the implants.
- All instruments must be enclosed in a aluminium case

Reduction forceps set

Material – Stainless steel

Grade - ISO 5832-1

This set should contain forceps for reduction, bone holding and distraction for large bones, small long bones, patella, fibula and malleoli.

The bone holding forceps should be self-centering and should be available in all sizes.

General Instruments set

Material – Stainless steel

Grade - ISO 5832-1

The instruments should contain the following for general purpose orthopaedic use. Retractors 8, 18 and 24 mm wide, bone hooks, periosteal elevators, Hammer, chisel handle with detachable Chisel blades, 10, 16 and 25 mm wide, gouges for Cancellous bone grafts 5, 10 and 15 mm wide, curved and straight and retractors in various sizes.

DHS/DCS Instrument Set

Material – Stainless steel (instruments)

Material – Titanium (implants)

Grade - ISO 5832-1

- The instrument should have DHS/DCS® Threaded Guide Wire, 2.5mm dia., L 230/5mm
- The instrument should have Angled Guide 135° , 150°
- The instrument should have DHS/DCS® Direct Measuring Device
- The instrument should have Wrench for one-step insertion L 230mm
- The instrument should have T-Handle with quick coupling, L 80mm
- The instrument should have DHS® Triple Reamer
- The instrument should have Impactor for one-step insertion, L 260mm
- The instrument should have DHS/DCS® Tap, L 220mm
- The instrument should have locking Centering Sleeve
- The instrument should have Coupling Screw, cannulated
- The instrument should have Triple Reamer
- The instrument should have tapered ends to allow for submuscular insertion of the plate
- The instrument should be compatible with Trochanter Stabilizing Plates.

14. Wire Instruments set

Material – Stainless steel

Grade - ISO 5832-1

The instruments should contain the following for proper insertion, handling, cutting, bending, holding, and tightening of Circlage, kirschner wires:

Triple guide wire, wire passers, wire tighteners, holding forceps, wire bending pliers, wire cutter, wire mounts for compression plates, Circlage wires with eye in 1.00 and 1.25 mm dia, length 280 mm.

15. LOCKED COMPRESSION PLATING SYSTEM – LCP (SMALL)

- The Instruments should have a Universal drill sleeve 3.5 mm
- The instrumentation should have a drill bit of dia 2.8mm & a threaded LCP drill guide for the drill bit 2.8mm
- The instrument should have screwdriver shaft 2.5mm, length 80mm.
- The instrument should have LCP Bending iron for bending the implants.
- A self retaining hexagonal screwdriver with torque limiting attachment having a 1.5Nm torque.
- The torque limiting screwdriver should have screw-holding sleeve alongwith all other essential instruments to use the implants.
- The instrument should have conical extraction screws of length 61mm & 136mm & drill bit 2.5mm dia for metal for extraction of damaged screws.
- All instruments must be enclosed in a syncase with lid

16. LOCKED COMPRESSION PLATING SYSTEM – LCP (LARGE)

- The Instruments should have a Universal drill sleeve 4.5 /5mm

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- The instrumentation should have a drill bit of dia 4.3mm & a threaded LCP drill guide for the drill bit 4.3mm
- The instrument should have a self retaining screw driver shaft for 5mm locking head screws.
- A self retaining hexagonal screwdriver with torque limiting attachment having a 4Nm torque.
- The instrument should have LCP Bending iron 4.5/5 for bending the implants
- The instrument should have conical extraction screws of length 59mm & 196mm & drill
- bit 3.5mm dia for metal for extraction of damaged screws
- The torque limiting screwdriver should have screw-holding sleeve along with all other essential instruments to use the implants.
- All instruments must be enclosed in a syncase with lid

17. CHISEL AND IMPACTOR SET

- The set contains bone impactor of dia 6 in round and flattened shape of length 140mm
- It also contains bone impactor of dia 8mm in round shape of length 140mm
- Curved Gouge of 10mm & 15mm of length 140mm
- Flat Chisel, straight, 16mm wide of length 140mm
- The set is available in aluminium case

18. EXTERNAL FIXATOR

Large External Fixator

- Rod of dia 11 mm in
 - Carbon fibre
 - lengths 100 – 400 mm
 - carbon fibre rod, curved for pelvis
- Clamp, clip-on self-holding, MR-safe
- Aperture for rods 11 mm
- Schanz screw 5mm with lengths 125 – 200 mm
- All instruments must be enclosed in a Vario with lid with an insert for Schanz Screws
- The instruments should have Combination Wrench of diameter 11.0mm
- The instruments should have Socket Wrench of diameter 11.0mm, cannulated
- The instruments should have Combination Clamp, clip-on, self-holding, MR-safe
- The instruments should have Clamp, clip-on, self-holding, MR-safe
- The instruments should have Universal Chuck with T-Handle
- The instruments should have Adapter for Seldrill™ Schanz Screw with diameter 5.0 mm
- The instruments should have Compressor, open
- The instruments should have Short Trocar with diameter 3.5 mm

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- The instruments should have Long Trocar with diameter 3.5 mm
- The instruments should have Handle for Drill Sleeve
- The instruments should have Short Drill Sleeve 5.0/3.5
- The instruments should have Long Drill Sleeve 5.0/3.5
- The instruments should have Short Threaded Drill Sleeve 6.0/5.0
- The instruments should have Long Threaded Drill Sleeve 6.0/5.0
- The instruments should have Connecting Rod □ 5.0 mm, length 150 mm, Stainless Steel

Medium External Fixator

- Rod of dia 8 mm in
 - Carbon fibre
 - lengths 120 – 320 mm
- Clamp, clip-on self-holding, MR-safe
- Aperture for rods 8 mm
- Schanz screw 4mm & 5 mm with lengths 80 – 175 mm
- All instruments must be enclosed in a Vario with lid with an insert for Schanz Screws
- The instruments should have Combination Wrench with diameter 8.0 mm
- The instruments should have Wrench, hexagonal with diameter 3.5 mm with T-Handle
- The instruments should have Combination Clamp, medium, clip-on, self-holding, MR-safe
- The instruments should have Clamp, medium, clip-on, self-holding, MR-safe
- The instruments should have Drill Sleeve 4.0/2.5
- The instruments should have Adapter for Seldrill™ Schanz Screw diameter 4.0 mm
- The instruments should have Adapter for Seldrill™ Schanz Screw diameter 5.0 mm
- The instruments should have Universal Chuck, small, with T-Handle
- The instruments should have Short Trocar with diameter 3.5 mm
- The instruments should have Long Trocar with diameter 3.5 mm
- The instruments should have Trocar with diameter 2.5 mm
- The instruments should have Handle for Drill Sleeve
- The instruments should have Short Drill Sleeve 5.0/3.5
- The instruments should have Long Drill Sleeve 5.0/3.5
- The instruments should have Short Threaded Drill Sleeve 6.0/5.0
- The instruments should have Threaded Drill Sleeve 4.0
- The instruments should have Long Threaded Drill Sleeve 6.0/5.0

19.CSS 4.5

- The cannulated screw system 4.5 should contain Titanium screws.
- The screw range should be available in lengths of 20 to 72mm.
- The screws should be self-drilling

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The set should contain the following instruments.

- Drill Bit $\phi 1.5$ L110/85 2flute
- Drill Bit $\phi 3.2/1.75$ cann L170/140 4flute
- Cannulated Countersink $\phi 4.5$
- T-Handle with Quick-Coupling
- Double Drill Guide 4.5/3.2
- Parallel-Guide for Guide-Wires $\phi 1.6$ adjustable
- Trocar $\phi 1.6$ $\phi 4.5$
- Drill Sleeve 3.2/1.6 $\phi 4.5$
- Drill Sleeve 7/3.2 $\phi 4.5$
- Protection Sleeve 9.5/7 $\phi 4.5$
- Cannulated Hexagonal Screw Driver $\phi 4.5$
- Holding Sleeve
- Direct Measuring Device $\phi 4.5$
- Cleaning Stylet $\phi 1.6$
- Hold-Clip for Washers
- Screw Forceps self-hold L85
- Lid for case
- Case for Instrument Set for Cannulated Screw $\phi 4.5$ mm without Lid
- Guide Wire $\phi 1.6$ with thread-tip with trocar L15

20. CSS 6.5

- The cannulated screw system 6.5 should contain Titanium screws.
- The screw range should be available in lengths of 50 to 120mm.
- The screws should be self-drilling
- The screws should be available in 16mm thread length and 32mm thread length

The set should contain the following instruments.

- Case for Instrument Set for Cannulated Screws $\phi 6.5/7.3$ mm without Lid
- Case Lid
- Rack for Cannulated Screws $\phi 6.5/7.3$ mm
- Drill Bit $\phi 5$ cannulated with length 300/250 3flute
- Parallel-Guide for Guide-Wires $\phi 2.8$ adjustable
- Trocar $\phi 2.8$
- Protect-Sleeve with diameter 12/8.5mm
- Drill Sleeve with diameter 8.5/2.8mm
- Protection Sleeve 15.5/13mm
- Hexagonal cannulated Screw Driver $\phi 6.5+7.3$
- Large Holding Sleeve
- Cleaning Brush $\phi 2.9$
- Holding Clip for Washers
- Cleaning Stylet $\phi 2.8$

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- Direct Measuring Device for GuideWires $\phi 2+2.8$
- Screw Forceps self-holding length 85mm
- Guide Wire $\phi 2.8$ with thread-tip with trocar of length 30mm