

Mini External Fixator DIGITAL FRACTURES SET		
	DESCRIPTION	QTY.
LINK JOINTS		
	Alpha Mini Clamp (Upto 2mm Wire, 3mm rod)	10
	Beta Small Clamp (Upto 3mm wire, 4mm rod)	10
STRAIGHT RODS - knurled		
	Straight Rods 2mm x 75mm	2
	Straight Rods 2mm x 100mm	2
	Straight Rods 3.0mm x 100mm	2
INSTRUMENTS		
	Allen Key 2.0mm A/F disposable	1
	Allen Key 3.0mm A/F disposable	1
IMPLANTS & MISC.COMPONENTS		
K-wires -		
	"K" wires 1.2mm x 150mm	5
	"K" wires 1.5mm x 150mm	5

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Mini External Fixator - BASIC HAND SET		
DESCRIPTION	QTY.	
DISTRACTORS		
Double hole Distractor 75mm	2	
LINK JOINTS		
Alpha Mini Clamp (Upto 2mm Wire, 3mm rod)	10	
Beta Small Clamp (Upto 3mm wire, 4mm rod)	20	
Beta Small Clamp - Add on (Upto 3mm wire, 4mm rod)	2	
STRAIGHT RODS - knurled		
Straight Rods 3.0mm x 100mm	4	
Straight Rods 3.0mm x 150mm	2	
Straight Rods 3.0mm x 200mm	2	
Straight Rods 3.0mm x 250mm	2	
INSTRUMENTS		
Allen Key 2.0mm A/F disposable	1	
Allen Key 3.0mm A/F disposable	1	
IMPLANTS & MISC.COMPONENTS		
K-wires -		
"K" wires 1.5mm x 150mm	5	
"K" wires 1.8mm x 150mm	10	

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Hand Frame For Deformity Correction set with K. Wire

	DESCRIPTION	QTY.
	Distractor Single hole - 75mm	1
	Three-block Distractor for deformity correction	5
	Alpha Mini Clamp (Upto 2mm Wire, 3mm rod)	10
	Beta Small Clamp (Upto 3mm wire, 4mm rod)	20
	Beta Small Clamp - Add on (Upto 3mm wire, 4mm rod)	2
	Beta Small Clamp - 4 x 4 (Upto 4mm wires / rods)	4
	Bi-axial hinge joint	2
	Straight Rods 2mm x 100mm	2
	Straight Rods 3.0mm x 100mm	2
	Straight Rods 3.0mm x 200mm	2
	Straight Rods 3.0mm x 250mm	2
	Mini Traction bow (Half Stirrup)	5
	Spanner 6mm/8mm	2
	Allen Key 2.0mm A/F disposable	1
	Allen Key 3.0mm A/F disposable	1
	"K" wires 1.2mm x 150mm	5
	"K" wires 1.5mm x 150mm	5
	"K" wires 2.0mm x 150mm	5
	"K" wires 2.5mm x 150mm	5

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Basic Instrument Set, German Make

SR. NO.	Description	Set Qty.
1	Aluminium Case, long, yellow (for Basic)	1
2	S.S Tray for Basic Set Instruments (German pattern)	1
3	S.S Tray, separated for Instruments (German pattern)	1
4	Tension Device, ", Articulated	1
5	Countersink, ", Large, length 180mm	1
6	T-handle Q.C, ", Length 80mm	1
7	Load & Neutral Drill Guide, ", 4.5mm	1
8	Depth Gauge, " for large screws	1
9	Sharp Hook, " length 155mm	1
10	Drill Bit Q.C " - Ø3.2mm, Length 145mm	3
11	Drill Bit Q.C " - Ø4.5mm, Length 145mm	2
12	Tap Q.C " - Ø4.5mm, Length 130mm	2
13	Tap Q.C " - Ø6.5mm, Length 130mm	1
14	Hex. Screwdriver Q.C, " 3.5 A/F	1
15	Hex Screwdriver fibre handle, 3.5 a/f, length 270mm with groove for holding sleeve, for large bone screws	1
16	Holding Sleeve, ", large, length 120mm	1
17	Double Drill Sleeve, ", 4.5mm/3.2mm	1
18	Double Drill Sleeve, ", 6.5mm/3.2mm	1
19	Insert Drill Sleeve, ", 4.5mm/3.2mm, length 80mm	1
20	Template for contouring plates Large DCP/LCDCP, " - 9 H x 155mm	1
21	Template for contouring plates Large DCP/LCDCP, " - 12 H x 210mm	1
22	Combination Wrench, ", 11mm, length 140mm	1

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D.H.S Basic Instrument Set, German Make

SR. NO.	Description	Set Qty
1	Aluminium Case (Blue)	1
2	Lower Tray	1
3	Upper Tray	1
4	Guide Wire (2.5mm X 230mm Length)	10
5	C.H.S. 'T' Handle With Q.C.	1
6	Direct Measuring Device	1
7	C.H.S. Tri-Action Reamer Q.C. for 38mm Barrel length	1
8	DHS Reamer, for DHS plates with short barrel (for Use with Inner Drill of Standard DHS Triple Reamer, complete)	1
9	DHS Reamer, for DHS plates with short barrel (for Use with Inner Drill of Standard DHS Triple Reamer, complete)	1
10	C.H.S./D.C.S. Tap with Q.C. 12.5mm	1
11	Centering Sleeve For Tap	1
12	C.H.S. Wrench	1
13	Centering Sleeve for Wrench	1
14	Coupling Screw	1
15	Coupling Screw For Removal	1
16	Guide Shaft	1
17	Impactor For C.H.S. Plates	1
18	Adjustable Angle Guide 135-150 Deg.	1
19	DCS Triple Reamer, complete, for DCS plates	1
20	DCS Angle Guide	1

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Small Fragment Instrument Set, German Make

SR. NO.	Description	Set Qty
1	Aluminium Case, long, yellow (for Small Set)	1
2	S.S Tray, separated for Instruments (German pattern)	1
3	S.S Tray for Small Fragment Implants (German pattern)	1
4	Small Countersink, ", Tip 2.0mm	1
5	T-handle Q.C, ", Length 80mm	1
6	Load & Neutral Drill Guide, 3.5mm,	1
7	Depth Gauge for Small Screws,	1
8	Sharp Hook, " length 155mm	1
9	Screw Forceps,	1
10	Drill Bit Q.C " - Ø2.5mm, Length 110mm	2
11	Drill Bit Q.C " - Ø3.5mm, Length 110mm	2
12	Tap Q.C " - Ø3.5mm X 1.25mm Pitch, Length 110mm	2
13	Tap for Small Cancellous Bone Screws,	2
14	Hex Screwdriver Q.C. 2.5 a/f,	1
15	Hex Screwdriver with fibre handle, 2.5 a/f, for use with Holding Sleeve, for Small bone screws,	1
16	Holding Sleeve, length 80mm for Hex Screwdriver, Small,	1
17	Double Drill Sleeve 3.5mm/2.5mm,	1
18	Insert Drill Sleeve 3.5/2.5mm,	1
19	Bending Iron for Kirschner Wires 1.25 to 2.5mm Dia., length 120mm,	1
20	BENDING IRON USED IN PAIRS (FOR PLATE FOR 2.7MM SCREW),	1
21	BENDING IRON USED IN PAIRS (FOR PLATE FOR 3.5MM SCREW),	1
22	Bending Pliers For Finger Plates,	1
23	Wire Bending Plier, length 155mm,	1
24	Clips For Plates,	2
25	TEMPLATE FOR CONTOURING PLATE SMALL DCP/LC-DCP - 7H (87MM),	1
26	TEMPLATE FOR CONTOURING PLATE SMALL DCP/LC-DCP 9H (114MM),	1
27	Bone Holding Forceps, Self-centering, length 190mm, speed-lock	1
28	Reduction Forceps with points, wide, length 132mm, ratchet lock,	1
29	Reduction Forceps, serrated, length 140mm, ratchet lock,	1
30	Reduction Forceps with points, length 130mm,	1
31	Retractor, Small, 8mm wide, short, Narrow Tip, length 160mm	2
32	Retractor, 15mm wide, length 160mm	2
33	Periosteal Elevator, round edge, 6mm wide, length 200mm	1

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Mini Fragment Instrument Set, German Make

SR. NO.	Description	Set Qty
1	Aluminium Case, long, yellow (for Mini Fragment Set)	1
	S.S Tray for Mini Fragment Implants	1
	S.S Tray, separated for Instruments	1
2	Drill Bit Q.C. 1.1mm,	2
3	Countersink Shaft 1.5/2.0, length 52mm,	1
4	Small Countersink, ", Tip 2.0mm	1
5	Handle with Mini Quick Coupling,	1
6	Handle with Quick Coupling,	1
7	Depth Gauge for Mini Screws,	1
8	Depth Gauge for Small Screws,	1
9	Sharp Hook, " length 155mm	1
10	Screw Forceps,	1
11	Drill Bit Q.C. 1.5mm,	2
12	Drill Bit 2.0mm dia, length 100/75mm for quick coupling,	2
13	Drill Bit Q.C. 2.7MM,	2
14	Tap Q.C. 1.5mm,	2
15	Tap Q.C. 2.0mm,	2
16	Tap Q.C. - 2.7mm,	2
17	Screwdriver Shaft hexagonal, with holding sleeve (for 1.1/1.5mm screws),	1
18	Hex Screwdriver Q.C. 2.5 a/f,	1
19	Hex Screwdriver with fibre handle, 2.5 a/f, for use with Holding Sleeve, for Small bone screws,	1
20	Holding Sleeve, length 80mm for Hex Screwdriver, Small,	1
21	Double Drill Sleeve 1.5/1.1mm,	1
22	Double Drill Sleeve 2.0/1.5mm,	1
23	Double Drill Sleeve 2.7/2.0mm,	1
24	Bending Iron for Kirschner Wires 1.25 to 2.5mm Dia., length 120mm,	1
25	Bending Iron For Mini/Small Plates,	1
26	Bending Pliers For Finger Plates,	1
27	Wire Bending Plier, length 155mm,	1
28	Wire cutter, short, length 175mm,	1
29	Clips For Plates,	6
30	Holding forceps for small plate, length 135mm,	1
31	Reduction Forceps with points, wide, length 132mm, ratchet lock,	1
32	Reduction Forceps with points, length 130mm,	1
33	Retractor, Small, 8mm wide, short, Narrow Tip, length 160mm	1
34	Retractor, small, 6mm wide, short, narrow tip, length 160mm,	1
35	Retractor, 15mm wide, length 160mm	2
36	Periosteal Elevator, straight edge, 3mm wide, length 200mm,	1

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General Instrument Set, German Make

SR. NO.	Description	Set Qty
1	Aluminium Case, long, silver (for General Inst Set)	1
2	S.S Tray, separated for Instruments	1
3	S.S Tray, Matt Finish, unpartitioned, , German pattern	1
4	Chisel Handle, length 185mm	1
5	Chisel Blade, 10mm wide, length 81mm, thickness 0.9mm	1
6	Chisel Blade, 16mm wide, length 81mm, thickness 0.9mm	1
7	Chisel Blade, 25mm wide, length 81mm, thickness 0.9mm	1
8	Gouge, curved, for cancellous bone grafts, 10mm wide, length 250mm	1
9	Hammer 500g., length 230mm	1
10	Retractor, 8mm wide, short narrow tip, length 220mm	2
11	Retractor, 18mm wide, short narrow tip, length 235mm	2
12	Retractor, 24mm wide, long and wide tip, length 270mm	1
13	Periosteal Elevator, curved shaft, 14mm wide, length 200mm	1
14	Periosteal Elevator, round edge, 6mm wide, length 200mm	1
15	Periosteal Elevator, straight shaft, 14mm wide, length 200mm	1

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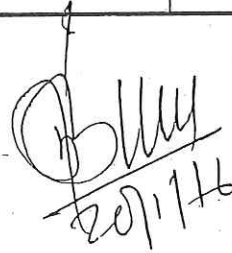
Wire Instrument Set, German Make

SR. NO.	Description	Set Qty
1	Aluminium Case, long, silver (for Wire Instrument Set)	1
2	S.S Tray, Matt Finish, unpartitioned, , German pattern	2
3	Wire tightener, length 240mm, with handle and two pegs,	1
4	Wire Passer, bending diameter 45mm,	1
5	Wire Passer, bending diameter 70mm,	1
6	Drill Bit 2.0mm dia, length 100/75mm for quick coupling,	1
7	Bending Iron for Kirschner Wires 1.25 to 2.5mm Dia., length 120mm,	1
8	Wire Bending Plier, length 155mm,	1
9	Wire cutter, short, length 175mm,	1
10	Wire Cutter, large, length 220mm,	1
11	Parallel Pliers, flat nosed, length 160mm,	1
12	Triple Drill Guide, 2.0mm, with three holes, opposite side, one hole,	1


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General Hip Set Imported

Sr. No.	DESCRIPTION	QTY
1	ALUMINIUM CASE, 2-PART, 600 x 275 x 95, INT HT MOD,	1
2	GENERAL HIP INSTRUMENT SET, TRAY 1	1
3	GENERAL HIP INSTRUMENT SET, TRAY 2	1
4	HEAD EXTRACTOR / JUDET EXTRACTOR	1
5	BOX CHISEL,	1
6	FEMORAL TAPER REAMER LARGE,	1
7	FEMORAL TAPER REAMER SMALL,	1
8	MURPHY SKID,	1
9	DIAMOND POINTED AWL,	1
10	INSERTER FOR CEMENT RESTRICTOR,	1
11	CHARNLEY RETRACTOR WITH WEIGHTS,	1
12	RETRACTOR (HOHMANN) LONG WIDE TIP 22MM,	1
13	PIN RETRACTOR,	1
14	RIGHT ANGLE RETRACTOR (BENT HOHMANN),	1
15	RETRACTOR RANAWAT PATTERN,	1
16	TROCHANTERIC ELEVATOR,	1
17	RIGHT ANGLE RETRACTOR (BENT HOHMANN), LONG,	1


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MINI FRAGMENT SET

Sr. No.	Description	QTY.
1	Aluminium Case	1
2	Al. Lower Tray. for Implants	1
3	Al. Tray. For Screws.	1
4	Al. Middle/Upper Tray. For Inst.	2
5	Drill Bit Q.C. " Swiss Made 2.0MM	2
6	Drill Bit Q.C. " Swiss Made 2.7MM	2
7	Small Countersink	1
8	Tap Q.C. -" Swiss made 2.7mm	2
9	T' Handle Q.C.	1
10	Drill Guide & Drill Sleeve (2mm)	1
11	Tap Sleeve 3.5mm also Drill Sleeve 3.2mm	1
12	Depth Gauge for Small Screws Stainless Steel	1
13	Drill Bit Q.C. " Swiss Made 1.1mm	2
14	Drill Bit Q.C. " Swiss Made 1.5mm	2
15	Mini Countersink	1
16	Tap Q.C. " Swiss Made 1.5mm	2
17	Tap Q.C. " Swiss Made 2.0mm	2
18	Hex Screwdriver with fibre handle "-Swiss made 2.5 A/F	1
19	Hex Screwdriver with fibre handle "-Swiss made 1.5mm A/F for 1.5 & 2.0mm Hex Slot screws	1
20	Mini Drill Sleeve for 1.1mm & 1.5mm Drills	1
21	Depth Gauge for Mini Screw	1
22	Sharp Hook	1
23	Screw Forceps	1
24	Clips For Plates	5
25	Bending Iron For Mini/Small Plates	1
26	Bending Plier For Finger Plates	1
27	Holding Forceps For Small Plates, 135mm	1
28	Holding Forceps with Foot for Small Plates, 135mm	1
29	Reduction Forceps With Point 130mm	1
30	Retractor Short Narrow Tip, Small, Width 6mm.	1
31	Retractor Short Narrow Tip, Small, Width 8mm	1
32	Retractor with Broad Shank, for Small Fragment	2
33	Periosteal Elevator, Fibre Handle, Curved, Straight Edge, Width 3mm	1

B.W.M.
20/11/16


Instrument Set for Hemi-Arthroplasty

SR. NO.	DESCRIPTION	QTY.
1	Aluminium Case 2-Part With Lid For E0303.01	1
2	Rasp for Intermedullary Canal for A.M. Prosthesis	1
3	Rasp for Intramedullary Canal for Bipolar Prosthesis	1
4	Rasp For Intramedullary Canal For Thomson Prosthesis New Pattern	1
5	Aluminium Impactor with Tufnol Head For (A.M. Prosthesis	1
6	Impactor For Bipolar Prosthesis	1
7	Head Extractor for femoral head	1
8	Head Gauge For Prosthesis	1
9	Hohmann Retractor, Narrow Tip, 43mm	2
10	Slotted Hammer For Version Control	1
11	Intramedullary Reamer, Short, 300mm used for canal preparation for prosthesis	1
12	Kuntscher Diamond Pointed Awl	1


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BONE FORCEPS SET

SR. NO.	Description	Set Qty
1	Aluminium Case	1
	Al. Lower/Middle/Upper Tray for Instruments	3
2	Holding Forceps With Foot For Small Plate - 135mm	2
	Holding Forceps For Small Plate 135mm	2
3	Self Centering Bone Holding Forceps 150mm	2
	Self Centering Bone Holding Forceps 190mm	2
	Self Centering Bone Forceps 240mm	2
	Self Centering Bone Forceps 260mm	2
	Self Centering Bone Forceps 280mm	2
3	Reduction Forceps 140mm	2
	Reduction Forceps 160mm	2
	Reduction Forceps 170mm	2
	Reduction Forceps 180mm	2
	Reduction Forceps 220mm	2
	Reduction Forceps 240mm	2
4	Reduction Forceps With Point 130mm	2
	Reduction Forceps With Point 180mm	2
	Reduction Forceps With Point 200mm	2
5	Hook Holding Forceps Single Locator	1
	Straight Forceps For Fibula 210mm	1
6	Patella Forceps 175mm	1
7	Bent Forceps For Fibula 210mm	1
8	Malleolar Forceps With Two Point 210mm	1
9	Ferguson Bone Holding Forceps 8"	1
10	Ferguson Bone Holding Forceps 9"	1
11	Heygrove'S Bone Holding Forceps 8"	1
12	Heygrove'S Bone Holding Forceps 10"	1
13	Heygrove'S Bone Holding Forceps 12"	1
14	Burn'S Bone Holding Forceps Length 6"	1
15	Burn'S Bone Holding Forceps Length 7"	1
16	Burn'S Bone Holding Forceps Length 8"	1
17	Lane'S Fagg'S Bone Holding Forceps 12 1/2" Length	1
18	Lanes'S Bone Holding Forceps With Ratchet 10" Length	1
19	Martin'S Cartilage Forceps	1
20	Sequestrum Forcep (19cm) 7 1/2" Straight	1


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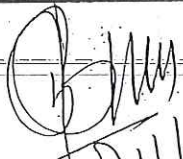
PLASTER INSTRUMENT SET

SR. NO.	Description	Set Qty.
1	Lorenz Plaster Shears	1
2	Plaster Cast Spreader	1
3	Plaster Knife	1
4	Plaster Saw With Allum. Handle	1
5	Plaster Cutting Scissors	1
6	Plaster Bender Small 7"	1
	Plaster Bender Big 10 1/2"	1
7	Plaster Cutting Saw - Electric	1
	Plaster Instrument SET	

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Large Cannulated Screw Instrument Set

SR. NO.	Description	Set Qty
	Aluminium Case, long, blue (for Large Cannulated Inst Set)	1
	S.S Tray 1 for Large Cannulated Instrument Set	1
	S.S Tray 2 for Large Cannulated Instrument Set	1
	Cannulated Insts - Basic Set	
1	Cannulated Drill Bit, 'Imported' Swiss-made dia 4.5mm/2.1mm, 230mm length	1
2	Cannulated Tap, 'Imported' Swiss-made dia 7mm, 230mm length	1
3	Cannulated Hex Screwdriver, 'Imported' Swiss-made, length 230mm for 7mm Cannulated Screws	1
4	Direct Measuring Device for 7mm Cannulated Screws	1
5	Parallel Wire Guide	1
6	Guide Wire 2.0mm with threaded tip, 230mm length	5
	Cannulated Insts - Optional	
1	Drill bit Q.C, 'Imported' Swiss-made, 2.0mm, length 100mm	1
2	Double Drill Sleeve 4.5/3.2	1
	Cannulated Insts - Optional, for Percutaneous Insertion	1
1	Parallel Drill Guide 4.5mm	1
2	Trocar 2.0mm	1
3	Drill Sleeve 4.5/2.0	2
4	Drill Sleeve 8.0/4.5	1
5	Protection Sleeve 11.0/8.0	1
	Large Cannulated Cancellous Screw Instrument Set	


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4mm Cannulated Instrument Set

SR. NO.	Description	Set Qty
1	DRILL BIT, 2.7/1.35MM DIA. CANNULATED LENGTH 160/130MM, FOR QUICK COUPLING,	1
2	TAP CANNULATED FOR 4MM CANNULATED SCREWS WITH QUICK COUPLING, LENGTH 147/60MM	1
3	SCREWDRIVER, HEXAGONAL, CANNULATED, FOR 3.5MM CANNULATED SCREWS, LENGTH 190MM	1
4	Guide Wire 1.25mm for small cannulated screws, length 150mm	1


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K.NAIL INSTRUMENT SET

SR. NO	Description	Set Qty
1	Kuntscher Diamond Pointed Awl	1
3	K-Nail Extractor, 'EaseExtract' Design with Safety Collar, with two hooks	1
4	Hammer 500 gms.	1
5	Kocher Bone Hook Medium	1
6	K. Nail Impactor	1
7	Kuntscher Nail Punch For Final Tapping	1
8	Kuntscher Nail Driver	1
9	K. Nail Set	1
10	Intramedullary Reamer	
	6,7,8 mm - 1 each	3
	9,- 14mm - 1 each	6
11	Guide Wire For K. Nail - set of seven sizes for Nails from 6mm - 15mm	7
	K Nail SET	


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SMALL FRAGMENT SET, DCP - COMPLETE

SR. NO.	Description	Set Qty
1	Aluminium Case	1
	S.S. Lower Tray For Instruments Used In Small Fragment Set (Std pattern)	1
	S.S. Middle Tray For Plate Used In Small Fragment Set (Std pattern)	1
	S.S. Upper Tray For Instruments Used In Small Fragment Set (Std pattern)	1
	S.S. Small Tray For Screws Used In Small Fragment Set	1
2	Drill Bit Q.C. 'Imported' Swiss Made 2.5mm	2
3	Drill Bit Q.C. 'Imported' Swiss Made 3.5mm	2
4	Small Countersink	1
5	Tap Q.C. -'Imported' Swiss made 3.5mm x 1.25mm	2
6	Tap Q.C. -'Imported' Swiss made 3.5mm x 1.75mm	2
7	T' Handle Q.C.	1
8	Double Drill Sleeve 3.5mm/2.5mm	1
9	Drill Guide & Drill Sleeve (2mm)	1
10	Tap Sleeve/Drill Sleeve 3.5/2.7mm	1
11	DCP Load & Neutral Drill Guide 2.5mm(For 3.5mm Screws)	1
12	Hex Screwdriver with fibre handle 'Imported'- Swiss made 2.5 A/F	1
13	Hex Screwdriver Q.C. Swiss made 2.5 A/F	1
14	Depth Gauge for Small Screws Stainless Steel	1
15	Sharp Hooks	1
16	Screw Forceps	1
17	Bending Iron For Small Plates	1
18	Bending Iron For Small Plates	1
19	Bending Pliers For Finger Plates	1
20	Template for contouring plates Small DCP/LCDCP - 5 H x 63mm	1
21	Template for contouring plates Small DCP/LCDCP - 7 H x 87mm	1
22	Self-Centering Bone Holding Forceps for Small Fragment 190mm	1
23	Reduction Forceps with Point 130mm	1

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24	Reduction Forceps Extra Small 140mm	1
25	Small Hohmann Retractor 6mm Wide	1
26	Small Hohmann Retractor 8mm Wide	1
27	Retractor Small Fragment With Broad Shank	2
28	Periosteal Elevator Small With Straight edge 6mm	1
29	Clips For Plates	5
	Small Fragment Set with Indian Pattern Case and Inner SS Trays (A+B)	


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MINI FRAGMENT SET WITH HEX SCREWS

SR. NO.	Description	Set Qty
	Aluminium Case	1
	Al. Lower Tray, for Implants	1
	Al. Tray, For Screws	1
	Al. Middle/Upper Tray, For Inst.	2
	Drill Bit Q.C. 'Imported' Swiss Made 2.0MM	2
	Drill Bit Q.C. 'Imported' Swiss Made 2.7MM	2
	Small Countersink	1
	Tap Q.C. -'Imported' Swiss made 2.7mm	2
	T' Handle Q.C.	1
	Drill Guide & Drill Sleeve (2mm)	1
	Tap Sleeve 3.5mm also Drill Sleeve 3.2mm	1
	Depth Gauge for Small Screws Stainless Steel	1
	Drill Bit Q.C. 'Imported' Swiss Made 1.1mm	2
	Drill Bit Q.C. 'Imported' Swiss Made 1.5mm	2
	Mini Countersink	1
	Tap Q.C. 'Imported' Swiss Made 1.5mm	2
	Tap Q.C. 'Imported' Swiss Made 2.0mm	2
	Hex Screwdriver with fibre handle 'Imported'- Swiss made 2.5 A/F	1
	Hex Screwdriver with fibre handle 'Imported'- Swiss made 1.5mm A/F for 1.5 & 2.0mm Hex Slot screws	1
	Mini Drill Sleeve for 1.1mm & 1.5mm Drills	1
	Depth Gauge for Mini Screw	1
	Sharp Hook	1
	Screw Forceps	1
	Clips For Plates	5
	Bending Iron For Mini/Small Plates	1
	Bending Plier For Finger Plates	1
	Holding Forceps For Small Plates, 135mm	1
	Holding Forceps with Foot for Small Plates, 135mm	1
	Reduction Forceps With Point 130mm	1
	Retractor Short Narrow Tip, Small, Width 6mm	1
	Retractor Short Narrow Tip, Small, Width 8mm	1

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20/11/16

DHS/DCS INSTRUMENT SET

SR. NO.	Description	Set Qty
	Aluminium Case 2-Part With Lid	1
	Aluminium Lower Tray For Insts. Used In D.H.S / D.C.S Sets	1
	Aluminium Middle Tray For Insts. Used In D.H.S / D.C.S Sets	1
	Aluminium Upper Tray For Insts. Used In D.H.S / D.C.S Sets	1
	Guide Wire (2.5mm X 230mm Length)	10
	D.H.S. Angle Guide (Q.C.) 135 Deg.	1
	D.H.S. Angle Guide (Q.C.) 130 Deg.	1
	D.H.S. 'T' Handl With Q.C.	1
	Direct Measuring Device	1
	D.H.S. Tri-Action Reamer Q.C. for 38mm Barrel length	1
	D.H.S. Tri-Action Reamer Q.C. for 25mm Barrel length	1
	D.H.S./D.C.S.Tap with Q.C. 12.5mm	1
	Centering Sleeve For Tap	1
	D.H.S. Wrench	1
	Centering Sleeve for Wrench	1
	CHS Coupling Screw	1
	Coupling Screw For Removal	1
	Guide Shaft	1
	Impactor For D.H.S..Plates	1
	Hex Screwdriver with fibre handle 'Imported'-Swiss made 3.5 A/F	1
	D.C.S. Tri-Action Reamer	1
	D.C.S. Angle Guide 95 Deg. With Q.C.	1
	Sub Total	
	CHS/DCS Set Complete with Indian Case & Trays	


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GENERAL INSTRUMENT SET

SR No.	Description	Set
1	Bone Awl With Eye Straight 5/32"	1
2	Plate Bender Pair	1
3	Roller Type Plate Bender	1
4	Stille Type Chisel Straight 7" 5mm, 10mm, 15mm, 20mm, 25mm, 30mm - 1 each	6
5	Stille Type Chisel Curved 7" 5mm, 10mm, 15mm, 20mm, 25mm, 30mm - 1 each	6
6	Charley'S Compression Clamp With 2 Pin	1
7	Lowman'S Bone Holding Clamp 4"	1
8	Lowman'S Bone Holding Clamp 5"	1
9	Lowman'S Bone Holding Clamp 8"	1
10	Volkman Curette Double Ended 4mm & 9mm, 6mm & 10mm, 9mm & 12mm	3
11	Chuck)	2
12	Universal Bone Drill With Imported Jacob'S Chuck And Key	1
13	Farabeauf Rugine Straight	1
14	Farabeauf Rugine Curved	1
15	Square Nails Extractor	1
16	Extra Hook For A.M. Head Extractor	1
17	Stille Horsley Bone Cutting Forceps 10" Length	1
18	Heygrove'S Bone Holding Forceps 8"	2
19	Heygrove'S Bone Holding Forceps 10"	2
20	Heygrove'S Bone Holding Forceps 12"	2
21	Burn'S Bone Holding Forceps Length 6", 7", 8"	3
22	Stille Gouge Straight, 5mm, 10mm, 15mm, 20mm, 25mm, 30mm, 35mm - 1 each	7
23	Stille Gouge Curved, 5mm, 10mm, 15mm, 20mm, 25mm, 30mm, 35mm - 1 each	7
24	Heath Mallet 250Gms.	1
25	Gigli Saw Introducer	1
26	Steinman Pin Introducer ('T' Handle With Plated Chuck)	1
27	Watson Jone'S Handle For Guide Wire	1
28	Lane'S Bone Lever Serrated End	2
29	Levers For Radius & Ulna	2
30	Stille Type Osteotome Straight, 5mm, 10mm, 15mm, 20mm, 25mm, 30mm, 35mm - 1 each	7
31	Stille Type Osteotome Curved, 5mm, 10mm, 15mm, 20mm, 25mm, 30mm, 35mm - 1 each	7
32	Mastoid Retractor	2
33	Gigli Saw Wires	10
34	William'S Screwdriver	1
35	Burn'S Self Holding Screwdriver	1
36	Bohler'S Stirrup Small With Steinman Pin	1
37	Bohler'S Stirrup Medium With Steinman Pin	1


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38	Bohler'S Stirrup Big With Steinman Pin	1
39	Self centering Bone Holding Forceps	
40	Self Centering Bone Holding Forceps 240mm	1
	Self Centering Bone Holding Forceps 260mm	1
41	Self Centering Bone Holding Forceps 280mm	1
42	Reduction Forceps	
43	Reduction Forceps 170mm	2
	Reduction Forceps 240mm	2
44	Patella Forceps 175mm	2
45	Retractor Short Narrow Tip Width 18mm	1
46	Steinman Pin	
47	Steinman Pin Ø4.0mm, Length 150mm	2
	Steinman Pin Ø4.0mm; Length 175mm	2
48	Steinman Pin Ø4.0mm, Length 200mm	2
49	Steinman Pin Ø4.5mm, Length 150mm	2
50	Steinman Pin Ø4.5mm, Length 175mm	2
51	Steinman Pin Ø4.5mm, Length 200mm	2
	General Instrument Set	

[Handwritten signature]

(5) For DPR Preparation of Biowaste –

4. Technical offer of the bidders should be in the proforma / format given below :

Technical Offer Proforma : To be filled after survey by the bidders (no manipulation should be entered). If found fake entry or shortage or missing of the medical centres then penalty will be implemented on the bidders. It may be in the form of monetary deduction of payments or in the worst case the order may get cancelled and EMD will be forfeited.

Proforma

Ward No	Name of Mohalla or Village	Name of Gali or Street	Sl. No	Name and address of Medical Centre	In case of Institute or Hospital or Nursing Homes no of indoor patients bed	Category (As per govt. norms) wise average calculation of approx. Bio Medical waste generated per day in Kg / Ltrs.					Remarks of the Surveyor if any
						Yellow bags cat. 1,2,3 & 6	Red bag cat. 3,6 & 7	Blue bag cat. 4 & 7	Black bag cat. 5,9 & 10	Liquid / Chemicals cat. 8	
e.g. RMC Ward No. 6	e.g. Morabadi Harihar Singh Road	e.g. Jatra Maidan Gali	1	e.g. M/s Krishnan Lab, 1st Fl. No.6 Tripti Mension	e.g. 50 Beds	e.g. 2 Kg	e.g. 5 Kg	e.g. 8 Kg	e.g. 10 Kg	In Ltrs.	e.g. It is a pathological & radiological centre

Note : The bidders have to fill the format as per examples given above.

Full signature of the tenderer with seal

Designation :

Dated :

CATEGORIES OF BIO-MEDICAL WASTE AS PER CPCB RULES 1998

Option	Waste Category	Treatment & Disposal
<u>Category No. 1</u>	Human Anatomical Waste (human tissues, organs, body parts)	Incineration @/deep burial*
<u>Category No. 2</u>	Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal)	Incineration @ / deep burial*
<u>Category No 3</u>	Microbiology & Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of micro-organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biologicals, toxins, dishes and devices used for transfer of cultures)	local autoclaving / micro-waving / incineration@
<u>Category No 4</u>	Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)	disinfection (chemical treatment @ 01/auto claving / micro- waving and mutilation/ shredding"
<u>Category No 5</u>	Discarded Medicines and Cytotoxic drugs (wastes comprising of outdated, contaminated and discarded medicines)	Incineration @/destruction and drugs disposal in secured landfills drugs disposal in secured landfills.
<u>Category No 6</u>	Solid Waste (Items contaminated with blood, and body fluids including cotton dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)	Incineration @ autoclaving / micro-waving
<u>Category No. 7</u>	Solid Waste (wastes generated from disposable items other than the waste shaprns such as tubings, catheters, intravenous sets etc).	disinfection by chemical treatment @ @ autoclaving/micro-waving and mutilation/ shredding###
<u>Category No. 8</u>	Liquid Waste (waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)	disinfection by chemical treatment@@ and discharge into drains.
<u>Category No. 9</u>	Incineration Ash (ash from incineration of any bio-medical waste)	disposal in municipal landfill
<u>Category No. 10</u>	Chemical Waste (chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)	chemical treatment @@ and discharge into drains for liquids and secured landfill for solids

@@ Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

Multilamination/shredding must be such so as to prevent unauthorised reuse.

@ There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

- Deep burial shall be an option available only in towns with population less than five lakhs and in rural areas.

+ Options given above are based on available technologies. Occupier/operator wishing to use other State-of-the-art technologies shall approach the Central Pollution Control Board to get the standards laid down to enable the prescribed authority to consider grant of authorization.

COLOUR CODING AND TYPE OF CONTAINER FOR DISPOSAL OF BIO-MEDICAL WASTES AS PER CBCB RULES 1998

Colour Coding	Type of Container -I	Waste Category	Treatment options as per Schedule I
Yellow	Plastic bag	Cat. 1, Cat. 2, and Cat. 3, Cat. 6.	Incineration/deep burial
Red	Disinfected container/plastic bag	Cat. 3, Cat. 6, Cat.7.	Autoclaving/Microwaving/Chemical Treatment
Blue/White translucent	Plastic bag/puncture proof Container	Cat. 4, Cat. 7.	Autoclaving/Microwaving/Chemical Treatment and destruction/shredding
Black	Plastic bag	Cat. 5 and Cat. 9 and Cat. 10. (solid)	Disposal in secured landfill

Notes:

1. Colour coding of waste categories with multiple treatment options as defined in Schedule I, shall be selected depending on treatment option chosen, which shall be as specified in Schedule I.
2. Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.
3. Categories 8 and 10 (liquid) do not require containers/bags.
4. Category 3 if disinfected locally need not be put in containers/bags.

GUIDELINES FOR DESIGN AND CONSTRUCTION OF BIO-MEDICAL WASTE INCINERATOR

1. General

1. These guidelines shall be applicable only to the new installation of incinerators. However, the existing incinerator shall be retrofitted with Air Pollution Control Device as mentioned in these guidelines.
2. Incinerator shall be allowed only at Common Bio-medical Waste Treatment Facility (CBWTF).
3. Installation of individual incineration facility by a healthcare unit shall be discouraged as far as possible but approval may be granted only in certain inevitable situations where no other option is available.

2. Incinerator

Following design criteria may be adopted for better performance:

- I. The incinerator shall be designed for capacity more than 50 kg/hr. For 50 kg/hr capacity, the minimum hearth area shall be 0.75 sq. m (8 sq. feet) and the minimum flow of the flue gas in the secondary chamber shall be 0.6 m³/sec at 1050°C. Each incinerator must be installed with an air pollution control system (as specified in the section 3).
- II. The size of the opening through which the waste is charged shall be larger than the size of the waste bag to be fed. The volume of the primary chamber shall be atleast five times the volume of one batch.
- III. The double chamber incinerator shall preferably be designed on "controlled-air" incineration principle, as particulate matter emission is low in such incinerator. Minimum 100% excess air shall be used for overall design. Air supply in the primary and secondary chamber shall be regulated between 30%-80% and 170%- 120% of stoichiometric amount respectively. Primary air shall be admitted near / at the hearth for better contact. Flow meter / suitable flow measurement device shall be provided on the primary & secondary air ducting. The combustion air shall be supplied through a separate forced draft fan after accounting for the air supplied through burners.
Optional: For higher capacity incinerators, typically above 250 kg/hr, other design e.g. Rotary Kiln shall be preferred.
- IV. A minimum negative draft of 1.27 to 2.54 mm of WC (Water Column) shall be maintained in the primary chamber to avoid leakage of gaseous emissions from the chamber and for safety reasons. Provision shall be made in the primary chamber to measure the Water Column pressure.
- V. The waste shall be fed into the incinerator in small batches after the fixed interval of time in case of fixed hearth incinerator and continuous charging using appropriate feeding mechanism incase of rotary kiln incinerator or as recommended by the manufacturer. The size of the hearth i.e. primary chamber shall be designed properly.
- VI. The sides and the top portion of the primary and secondary chambers shall preferably have rounded corner from inside to avoid possibility of formation of black pockets/dead zones.
- VII. The size of the secondary chamber shall be properly designed so as to facilitate a minimum of one second of residence time to gas flow. For the estimation of residence time in the secondary chamber its volume shall be calculated starting from the secondary burner tip to the thermocouple.

- VIII. The refractory lining of the chamber shall be strong enough to sustain minimum temperature of 1000° C in the primary chamber and 1200° C in the secondary chamber. The refractory & insulation bricks shall have minimum 115 mm thickness each & conform to IS:8-1983 & IS:2042-1972 respectively.
- IX. The Incinerator shell shall be made of mild steel plate of adequate thickness (minimum 5 mm thick) & painted externally with heat resistant aluminum paint suitable to withstand temperature of 250°C with proper surface preparation. Refractory lining of the hot duct shall be done with refractory castable (minimum 45 mm thick) & insulating castable (minimum 80 mm thick). Ceramic wool shall be used at hot duct flanges & expansion joints.
- X. The thermocouple location shall be as follows:
 In Primary chamber - Before admission of secondary air
 In Secondary chamber - At the end of secondary chamber or before admission of dilution medium to cool the gas
- XI. There shall be a separate burner each for the Primary & Secondary chamber. The heat input capacity of each burner shall be sufficient to raise the temperature in the primary and secondary chambers as 800±50°C and 1050±50°C respectively within maximum of 60 minutes prior to waste charging. The burners shall have automatic switching "off/on" control to avoid the fluctuations of temperatures beyond the required temperature range.
- a) Each burner shall be equipped with spark igniter and main burner.
 - b) Proper flame safeguard of the burner shall be installed.
 - c) Provide view ports to observe flame of the burner.
 - d) Flame of the primary burner
 - e) shall be pointing towards the centre of the hearth.
 - f) shall be having a length such that it touches the waste but does not impinge directly on the refractory floor or wall.
 - g) The secondary burner shall be positioned in such a way that the flue gas passes through the flame.
- XII. There shall not be any manual handling during charging of waste in to the primary chamber of the incinerator. The waste shall be charged in bags through automatic feeding device at the manufacturer's recommended intervals ensuring no direct exposure of furnace atmosphere to the operator. The device shall prevent leakage of the hot flue gas & any backfire. The waste shall be introduced on the hearth in such a way so as to prevent the heap formation. Suitable raking arrangement shall be provided for uniform spreading of waste on the hearth.
- XIII. A tamper-proof PLC(Programmable Logic Control) based control system shall be installed to prevent:
- Waste charging until the required temperature in the chambers are attained during beginning of the operation of the incinerator.
 - Waste charging unless primary & secondary chambers are maintained at the specified temperature range.
 - Waste charging in case of any unsafe conditions such as - very high temperature in the primary & secondary chambers; failure of the combustion air fan, ID fan, recirculation pump; low water pressure & high temperature of the flue gas at the outlet of air pollution control device.
- XIV. The incineration system must have an emergency vent. The emergency vent shall remain closed i.e it shall not emit flue gases during normal operation of the incinerator.

- XV. Each incineration system shall have graphic or computer recording devices, which shall automatically and continuously monitor and record dates, time of day, batch sequential number and operating parameters such as temperatures in both the chambers. CO, CO₂, and O₂ in gaseous emission shall also be measured daily (at least ½ hour at one minute interval).
- XVI. The possibility of providing heat recovery system/heat exchanger with the incinerator shall also be considered wherever possible.
- XVII. Structural design of the chimney / stack shall be as per IS:6533-1989. The chimney/stack shall be lined from inside with minimum of 3 mm thick natural hard rubber suitable for the duty conditions and shall also conform to IS:4682 Part I-1968 to avoid corrosion due to oxygen and acids in the flue gas.
- XVIII. The location and specification of porthole, platform ladder etc. shall be as per the Emission Regulations, Part-3 (COINDS/20/1984-85), published by CPCB.

3. Air Pollution Control Device:

It is not possible to comply with the emission limit of 150 mg/Nm³ (corrected to 12% CO₂) for Particulate Matter, without Air Pollution Control Device (APCD). Therefore, a bio-medical waste incinerator shall always be equipped with APCD.

- i) No incinerator shall be allowed to operate unless equipped with APCD.
- ii) The incinerator shall be equipped with High Pressure Venturi Scrubber System as ordinary APCD such as wet scrubber or cyclonic separator cannot achieve the prescribed emission limit. For the facilities operating for 24 hrs a day, APCD in terms of dry lime injection followed by bag filter can be considered. The details of High Pressure Venturi Scrubber System are given in ANNEXURE-I.

4. Incinerator room and waste storage room :

- i) The incinerator structure shall be built in a room with proper roofing and cross ventilation. There shall be minimum of 1.5 m clear distance in all the directions from the incinerator structure to the wall of the incinerator room.
- ii) Adjacent to the incinerator room, there shall be a waste storage area. It shall be properly ventilated and so designed that waste can be stored in racks and washing can be done very easily. The waste storage room shall be washed and chemically disinfected daily.
- iii) The floor and inner wall of the incinerator and storage rooms shall have outer covering of impervious and glazed material so as to avoid retention of moisture and for easy cleaning.
- iv) The incineration ash shall be stored in a closed sturdy container in a masonry room to avoid any pilferage. Finally, the ash shall be disposed in a secured landfill.

5. Operator of the incinerator :

- i) A skilled person shall be designated to operate and maintain the incinerator. The operator shall have adequate qualification in relevant subject and shall be trained and certified by the incinerator supplier in operation & maintenance of the incinerator.
- ii) There shall be at least one assistant designated at the incinerator plant to keep track of the wastes, records of incinerator operation, cleanliness of the surrounding area and incinerator & waste storage room. They shall also take care of waste charging and incineration ash disposal.

- iii) All the staff at the incinerator plant shall put on protective gears such as gumboots, gloves, eye glasses, etc. for safety reasons.
- iv) Any accident occurred shall immediately be reported to the facility operator. The facility operator shall have well defined strategies to deal with such accident/emergency.

[The guidelines will help in selection/installation of better incinerator system. However, it shall be ensured that the incinerator shall comply with the standards stipulated in the Bio-medical Waste (Management & Handling) Rules, 1998.]

ANNEXURE-I

Details of High Pressure Venturi Scrubber System

1. The venturi scrubber shall have minimum pressure drop of 350 mm WC to achieve the prescribed emission limit. The temperature of the flue gas at the outlet of the venturi scrubber shall be approx 70-80° C to ensure the saturation of the flue gas.
2. The venturi scrubber shall preferably be made of stainless steel - 316L grade or better material or mild steel lined with acid resistant bricks to avoid corrosion.
3. The water to be used in venturi scrubber shall be added with caustic soda solution to maintain the pH of the scrubbing liquid above 6.5.
4. The scrubbing medium shall be circulated @ 2-2.5 ltrs/m³ of saturated flue gas at venturi outlet. This shall be done using a pump & piping made of stainless steel - 316 grades or better material. The scrubbing medium shall be recirculated as far as possible.
5. Venturi scrubber shall be followed by centrifugal type droplet separator to remove water droplets from flue gas.
6. The material of construction of the droplet separator and interconnecting ducting from venturi scrubber to droplet separator, droplet separator to ID fan & ID fan to stack, shall be mild steel lined from inside with minimum 3 mm thick natural hard rubber suitable for the duty conditions and shall also conform to IS: 4682 Part I-1968 to avoid corrosion due to oxygen and acids in the wet flue gas.
7. The wastewater generated from the air pollution control device shall be properly handled so as to avoid any non-compliance of the regulatory requirements.
8. Stack emission monitoring and ash analysis as per the requirement of the Bio-medical Waste (Management & Handling) Rules, 1998, shall be done quarterly i.e. once in every three months and record shall be maintained by the facility operator.

Note :

1. For filling the above format the bidders have to fill according to the categories fixed by CPCB Rules for handling the Biomedical Waste as mentioned above.
2. Since incinerator is a technology for burning of biomedical wastes but "PLASTICS" which is one of major part of hospital waste can not be treated in the incinerators. Plastics need to be sterilized and then either crushed or shredded through various procedures; similarly needles need to be destroyed. So the bidders have to mention all the equipments in their DPR in such a manner that all types of generated waste must get treated as per norms/rules of CPCB Government of India.

3. The work area of survey for preparation of DPR is within radius of 30 Km (Thirty Kilometers) from Ranchi. The bidders must have to give their approx. estimate for equipments in such of manner, that it could meet the demand for further at least 10 years in anticipation with respect to increase of beds, clinics etc.

**CATEGORIES OF BIOMEDICAL WASTE & ITS RECOMMENDED TREATMENT
METHODOLOGY**

Category No.	Type of wastes	Container / Bags	Treatment methods
1	Human Anatomical waste	Yellow	Incineration / deep burial
2	Animal waste	Yellow	Incineration / deep burial
3.	Microbiology & Biotechnology waste	Yellow, Red	Autoclaving / Microwaving / Incineration / deep burial (As per schedule-II of CPCB
4.	Waste sharps	Blue, white	First disinfection by chemical treatment then autoclaving / microwaving the shredding then deep burial.
5.	Discarded Medicines & cytotoxic drugs	Black	Dry medicine to be incinerated or secured landfill and liquids to be disinfected/neutralized then landfill.
6.	Soiled waste	Yellow, Red	Incineration / Autoclaving / Microwaving & landfill.
7.	Solid waste	Red, Blue, White	First disinfection by chemical treatment then autoclaving / microwaving then shredding then landfill.
8.	Liquid waste	Containers	Chemical treatment for disinfection / neutralization then discharge into drains.
9.	Incineration Ash	Black	Disposal in municipal landfill.
10.	Chemical waste	Black	First chemical treatment for neutralization then liquid into drains & solids into secured landfill.

RECOMMENDED ON SPOT SEGREGATION METHODOLOGY

Yellow Bags	(1) Infectious waste (2) Used Bandages, gauge, cotton or (3) any other objects in contact with body fluids, human body parts placenta etc. (4) Microbial and pathological wastes.
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Red Bags	Plastic waste such as catheters, injections syringes, I.V. Tubings, I.V. bottles, blood bags, urine bags, all other type of infectious plastics
Black	All types of glass, bottles, broken glass articles, outdated / expired / discarded and used medicines, pesticides etc.
Blue	Needles (without syringes) blades, sharps, scalpels and all metal waste articles

5. **Price Bid Proforma :**

The bidders have to quote their prices in their own format for complete job of preparation and submission of DPR within stipulated time frame.

Total price offer for job completion Rs. (in words Rs.)

Full signature of the tenderer with seal & date

6. The full EMD shall be forfeited in case of backing out of the offer after acceptance.
7. The bidders have to provide Ward wise, Mohalla wise and Street wise (Gali wise) list of all the private & government dispensaries, clinics, hospitals, Medical Laboratories, Blood Bank, Health Centres, Nursing Homes, Medical Institute etc.
8. As proof of the actual survey done for submitting the bids, the bidders have to enclose or submit soft copy in which the photographs of the situated medical centres (as mentioned in para(i) must be present with their name so that it may be uploaded on the government website for public information
9. The name and address of the centres under surveyed works must be written firstly gali wise (i.e. all the centres situated in the particular gali or street must be at one place), then all the street or galies of a particular mohalla must be shown at one place in such a manner that if any one wants to click a particular medical shop or centre in a particular gali of mohalla or ward, it must be present nthe list of that very areas report in one click.
10. The bidders have to complete the full job and have to submit the DPR within 90 days from the date of issue of the confirmed work order failing which i.e. in case of late submission of the DPR, penalty will be charged on the bidder as per norms mentioned hereunder :-
 - j. After 07 days (one week) from stipulated date of DPR submission - @0.5% (point five percent) per week of total contract value upto 04 weeks
 - v. After 04 weeks @1% (One percent) of contract value per week upto 08 weeks
 - vi. After 08 weeks @2.0% (Two percent) of contract value per week upto 12 weeks.
 - vii. After 12 weeks the security money & EMD will be forfeited by RIMS and the bidder will be debarred / black listed for further participations.
11. After survey for calculation of waste generation, the bidders also have to calculate the means & mode of on spot segregation, medical waste collection and safe transportation from site to the disposal plant yard.

12. Simultaneously they have to calculate the average number & models of vehicle (such as covered three wheelers or four wheelers or heavy vehicles) in a sequence so that the medical waste may be transported from narrow streets to the disposal yard at Jhiri, Ranchi.
13. The bidders also have to calculate or provide the names, specification, number, capacity etc. of equipment (such as Diesel incinerators, Shredders, heavy duty autoclaves, covered trolley etc.) required for disposal of the whole generated medical wastes. During calculation & estimation of the required equipments, it must be considered that if incase there occurs any break down in any of the required listed equipment then an alternate arrangement for disposal of the medical wastes must be there. The assessment of equipments must be as per need of pollution Control Board norms. Simultaneously they have to provide the average / approximate estimates of each of the equipment.
14. They also have to assess or estimate the approximate annual running cost required (such as fuel, manpower, consumables like - carry bags, dust bins, collection bins, gloves shoes etc. for labourers, other handling small equipments for the working etc.) for the complete job.
15. The bidders also have to provider or suggest the line of action plan for successful implementation of the complete disposal process.
16. The bidders have to collect the documents related to ward wise area from Ranchi Municipal Corporation office by their own or they may download it from government web site.

(6) For Skin & STD –

1. Fully loaded and high end whole body phototherapy unit PUVA Chamber
2. Motorized high end surgical chair cum bed absolutely suitable for skin and cosmetic surgery
3. OT light absolutely suitable for all surgeries in skin

Technical specification as hereunder :

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15 01.
SPECIFICATION FOR SKIN AND STD EQUIPMENTS

Item ① FULLY LOADED AND HIGH END WHOLE BODY PHOTOTHERAPY

UNIT PUVA CHAMBER

- Dimension: Outer (mm): 1955 (H) x 1070 (W) x 1070 (D)
- Dimension: Inner (mm): 1870 (H) x 750 (W) x 750 (D)
- Power Required: 6KVA (24 Tubes)
- ELCB provided
- Tubes: TL 100W / 10R or TL100/01
- Reflectors: Imported aluminum mirror type
- Painting: High Quality (7 Line process) powder coating
- Chokes: Special UV Chokes
- Dosimetry: Provided
- Arrangements of Tubes: Computer calculated distance
- Design: Modular
- Cumulative Hour meter: Provided
- Cooling System: Provided
- Weight: 150 Kgs approximately
- The unit has 12 UVA + 12NB UVB Narrow Band UVB Tubes
(311 nm)

[Signature]
28/01/16

- Tubes from 100W, 6ft
- Special UV Chokes for maximum life for the tubes

- The Unit is provided with imported mirror type reflectors
- Cabinet made of high quality steel and powder coated
- In-built multi sensor dosimeter with dynamic range angular sensitivity (DRAS) Technology
- Cumulative hour meter is provided in embedded system with password
- Four line Liquid Crystal Display for the control panel
- Feather touch key pad provided
- Lock and Key provided for the control panel
- Personalized photo therapy patient data card is provided (100 Nos.)

~~Five~~ ^{mm} One Year Warranty against any manufacturing defects

- Computer calculated arrangements of the tubes, enables an even illumination of the body in the treatment field
- All safety features provided with trippers and independent control for each panel
- Small space required (elegant and compact)

- Large door, very easy to open from inside
 - Plenty of space in the cabin for the patient
-
- Cooling system provided for each panel
 - Easy to service and assemble (modular design)
 - The unit is provided with talking system
 - Minimal heat development due to low current consumption

Chandley
08/10/18

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021

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MOTORISED HIGH END SURGICAL CHAIR CUM BED

ABSOLUTELY SUITABLE FOR SKIN AND COSMETIC SURGERY

- Size: 2000 x 610 x 700 mm
- Multi position Section Couch
- Absolute Stable and Professional Design
- Remote Controlled Operational
- Elegant Upholsteries
- Power Operated: 230V 50Hz
- Adjustable Height
- The Surface should be made of electronic material
- Weight: 79Kgs
- Motors: 3 independent
- Available all English Colors

1
Changsheng
08/01/14

11 05.

③ ~~OF LIGHT~~ ABSOLUTELY SUITABLE FOR ALL
~~SURGERIES IN SKIN~~

- Four plus Four Cold Glass Reflector
- Double Dome compatible for Laminar Flow
- Ceiling Mounted Halogen Light / L.E.D.
- Shadow Less Cold & White High Intensity Light
- Spring Balance Control
- Power Supply Source through 2 nos
- Constant Voltage Transformer (CVT) with intensity Control facility with MCB in CVT for Short Circuit Protection.
- **Lux Output 1,40,000 ± 10%**
- Color Corrective Filter Glass to Minimize the Heat
- Dome Tilting 360°, 315° Arm Movement facility
- Sterilizable Focusing Adjustable
- Detachable Brass Chrome Plated Handle
- Rise in temperature from ambient 2° – 5° C.

Chand [unclear]
08/01/16

(7) For Dental Equpts –

List of Machine & Equipments for Newly constructed Dental Institute at RIMS, Ranchi for the items which were not quoted or approved or not procured due to some unavoidable reasons under previous tender notice no. 3422 dated 02.06.2015. The serial number of items are as per previous tender.

S.No	Name of Equipments
1.	Chair Unit :
	(a) Electrically operated basic dental Chair
4.	Ultrasonic Cleaner
5	Needle Burner
7	RVG
8	Intra Oral camera
9	Pulp tester
10	Glass bead sterilizer
11	Amalgameter
16	70mA, 110 KV High Frequency X-ray
18	Lead Apron
19	Lead Collar
20	Lead gonoidal protector
21	Lead gloves
23	Biopsy kit set
25	Microscope – (i) Binocular Microscrope (ii) Pentahead Microscope
26	Centrifuge
27	Microtome
28	Wax bath
29	Wather bath
30	Knife sharpner
31	Hot plate
32	Speser knife
34	Public Adress system
35	Demonsttration model for training
41	Bleaching unit
117	Ferguson mouth gag
150	O ₂ cylinder with mask
158	Pliar rack
159	Blue torch
160	Bone former
161	Typodant
162	Typodent articulator
163	Welder
164	Hydro solder
167	Extra oral / intra oral tracer

168	Hot water sterilizer
169	Geyser
170	Distill water apparatus
	LAB EQUIPMENTS
174	Pressure molding machine
176	Welder with soldering attachment
183	Sand blasting machine
184	Vaccume mixture
185	Curing pressure pot
188	Pindex system
190	Pneumatic chisel
192	Curing unit
194	Microsurveyor
196	Flask press
198	Mechanical press
200	Duplicator
201	Electrolyting polishing unit
202	Wax heater
203	Wax carver
210	B.P. Insturment
213	X-ray view box
214	Revolving stool
215	Suction machine
216	Online UPS 10 KVA

(1) Dental chair (Basic & advanced)

1(a) Basic Dental Chair

Dental Chair and Unit

1 Description of Function:

1.1 The dental chair and unit is required for dental examination and surgery.

2 Operational Requirements

2.1 The complete unit with dental chair and hand-pieces is required.

2.2 Complete unit with Micro motor, Air Rotor, Air motor, Ultrasonic Scalar, Micro motor (3000 to 40,000 rpm range) and Motorized suction.

3 Technical Specifications:

3.1 *Dental Chair Specifications:*

1.) Fully motorized hydraulically self-adjusting Chair with lifting capacity of 200 kgs.

- 2) Corrosion free construction and durable scratch resistant epoxy paint finish
- 3) Should have seamless ultra-thin upholstery to facilitate easy cleaning/ disinfecting
- 4) Double articulating headrest for comfortable support. Should have flip head rest to be used on patients on wheelchairs.
- 5) Footswitch with multifunction. It should provide all chair movements, adjustable and Programmable position, movement of return to zero and emergency stop.
- 6) The hand-rests should be fully adjustable and should rotate out of the way of the patient when he steps off.

3.2 Dental Unit Specifications:

1) Should be attached to the chair with overhead / underhead delivery system to accommodate up to following 4 modules:

- a) One Turbine connections with hand-piece
- b) One air-motor connection with air-motor and hand-pieces (straight & contra)
- c) One fiber optic air rotor connection with quick disconnect coupling and light cure unit to be attached to the same coupling
- (d) One 3 way-syringe with removable tip for sterilization.
- (e) All the controls of the chair should be touch pad on doctor's and assistant's sides.

2) The design should be such that it can be simply cleaned and disinfected to reduce the possibility of cross infection. Autoclavable pad should be provided on the Unit where the hand pieces are placed.

3) Should have to reservoirs of water and disinfectant with automatic pressurization

4) Should have a non-retraction valve to avoid the reflux of contaminated materials

3.3 Spittoon/Water Unit Specifications:

1. Removable porcelain bowl, cup filler and spittoon nozzles which can be cleaned easily.
2. Water should get ON in the spittoon automatically as soon as the patient gets up for spitting.
3. Adjustable Timer up-to 15 seconds should be there to adjust timings of the water flow in the spittoon
4. One 3 way syringe should be there on the assistant side
5. Should have Hi/Lo suctions with easy reach filters. The high suction should be powered through a motorized unit.
6. Swivell spittoon should be provided.

3.4 Operating Light Specifications:

1. With luminosity of 20000 lux and 25000 lux with 620 degrees of rotation of light arm movements.
2. Should get ON and OFF with No-touch system for maintaining proper sterilization while working.
3. Color temperature of the light should be around 5000 Angstroms.
4. Light should allow Vertical, Horizontal, and Axial & Diagonal Movements for proper Focusing.

3.5 Oil Free Air Compressor (Medical Grade)

1. It should have Air moisture filter
2. It should have Non-retraction valve
3. It should have Pressure gage
4. It should have Air tank (capacity of 30-40 Lt.)
5. It should have Auto cut-off switch
6. It should give medical grade Air which is absolutely oil free

Technical Features

1200-1500 R P M, 230 Voltages/ 50 Hz

3.6 LED Light Cure Unit / Modular Light Cure Unit Specifications:

- Advances in the power output of light emitting diodes (LEDs) have allowed a LED light curing unit (LCU) with an 8 mm diameter light guide tip to achieve a similar depth of cure in a camphorquinone photo initiated composite, as a halogen LCU. .
- Blue LEDs can be used as photo detectors and may be of future use in dental radiometers.
- When assessing the output from an LCU it is not only important to know the spectrum and irradiance, but also whether the emission is pulsed or continuous.

3.7 Foot Control: Single foot control for all instruments with variable speed control
3.8 Dental Stool: Stable with 5-castor base, with load stabilizing gas spring. Backrest tilt should be adjustable - 2 Nos. (One for Dental surgeon and one for Assistant)

4 System Configuration Accessories, spares and consumables:

4.1 System as specified-

4.2 All consumables required for installation and standardization of system to be given free of cost.

5 Environmental factors:

5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%

5.2 The unit shall be capable of operating continuously in ambient temperature of 10 -40 deg C and relative humidity of 15-90%

5.3 Complete installation of the system including water input and drainage system has to be installed

6 Power Supply:

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

6.2 Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications. (Input 160- 260 V and output 220-240 V and 50 Hz)

7 Standards, Safety and Training

7.1 Complete system should be FDA approved product.

7.2 Manufacturer should have ISO certification for quality standards.

7.3 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450

7.4 Provision for Remote Diagnostics through RS-232C serial interface or equivalent.

8 Documentation:

8.1 User/Technical/Maintenance manuals to be supplied in English.

8.2 Certificate of calibration and inspection.

8.3 List of Equipments available for providing calibration and routine Preventive Maintenance Support. As per manufacturer documentation in service/technical manual.

8.4 List of important spare parts and accessories with their part number and costing.

8.5 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

User/Technical/Maintenance manuals to be supplied in English.

Certificate of calibration and inspection.

List of important spare parts, handpieces, and accessories with their part number and costing

Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out

Note – The bidders have also to quote the separate rates for (i) Scaler & (ii) Light cure system in such a manner that if the institute does not require the scaler or light cure system in few chairs, then its price may be deducted from the orders or payments to the bidders.

(4) Ultrasonic cleaner:

- It should have lengthened tank suitable for long dental instruments.
- It should have stronger transducer to get better cleaning effect.
- It should have digital timer for choosing different time of cleaning.
- It should have circuit protector & radiator fan to protect every parts in good condition after long working time.
- It should have Ultrasonic frequency 42,000 Hz
- It should have stainless steel tank.

- It should have tank capacity of 10 Liter.
- It should have tap system to evacuate water from the tank
- Elegant fibreglass casing for hygienic and rust free equipment with mesh bucket
- should be efficient enough to remove the dirt and debris from the crevices of instruments

(5) Needle burner with syringe cutter:

It is table top elegant look and capable of providing 1300⁰ C within a fraction of a second to melt the entire *metallic portion of the needle*. It has a high speed Motor with high speed HSS long lasting cutter. Motor is having auto start as soon as you introduce the syringe and slide. It can cut the syringe within a fraction of a second. Waste Container Tray is large enough to hold at least 150-200 cut plastic syringes

(7) RVG

- It should be based on advanced Hybrid latest / CMOS Technology.
 - It should have tapered sensor edges to maximize the patient comfort & for human oral structure.
 - It should have Ergonomic design targets form & function to ensure the optimal environment of comfort & functionality.
 - It should have minimum 1 million exposure life.
 - It should have Pixel Pitch not more than 0.035mm.
 - It should have Dynamic Range/Grey scale not more than 4096.
 - It should have Active Pixel Array –Minimum 24.01x33.04mm.
 - It should have dimension (W*L) – Minimum 29.2x38.7 mm.
 - It should have Superior image quality with reduced scan time with low x-ray dose or radiation
- Sensor Case.
- Aluminium case makes perfect ground & protect CMOS sensor from mechanical & electrical shocks
 - It should have flexible cable which is bend resistant.
 - It should have minimum cable length of 3 meter.
 - Sensor thickness should not be more than 5mm.
 - It should have Plug-in type USB 2.0 PC Interface guarantees the user convenience and simple interaction.
 - It should have integrated software program for diagnosis, communication and patient database tool password protected with following features:-
 - user friendly software, Easy to learn & convenient to use
 - All kind of image formats supported (bmp, jpg, tif, etc.)
 - Windows 7 compatible.
 - With direct CD burn option.
 - An integrated program for diagnosis and communication with the patient
 - Implant, Bleaching & Crown simulation feature

(8) Intra oral camera

1 Description of Function

1.1 Intra-oral camera is required for documenting video and still images of intra-oral procedures

2 Operational Requirements

2.1 High resolution Intra-Oral camera based on CCD technology

3 Technical Specifications

- 3.1. Should give true image (not a mirror image)
- 3.2. Light source integrated into handpiece
- 3.3. Sealed design and hygienic material for proper disinfection
- 3.4. The image live/freeze/save functions should be initiated by the station foot control
- 3.5. Ergonomical shape of handle
- 3.6. True imaging angle of 530 approx
- 3.7. Viewing orientation - 90o approx
- 3.8. Magnification – minimum 40X
- 3.9. Resolution – minimum 470 lines
- 3.10. Focal range – min. 6mm to infinity
- 3.11. Light source – four output halogen, 32,000 LUX at 10 mm
- 3.12. It should be supplied along with Desktop computer 20 inch screen, Intel Pentium Quad Core, 500 GB HDD, RAM 4 GB, DVD-RW, latest genuine windows version software and color laserjet printer.

4 Power Supply

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

5 Standards, Safety and Training

- 5.1 Should be FDA/ CE approved product
- 5.2 Manufacturer/ Supplier should have ISO certification for quality standards.

6 Documentation

- 7.1 User/Technical/Maintenance manuals to be supplied in English.
- 7.2 List of important spare parts and accessories with their part number and costing
- 7.3 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

(9) Pulp tester

- It should be capable to tests pulp vitality of an injured/non injured tooth.
- It should have three Preset speed mode (high-mid-low speed)
- It should be easy to operate
- It should have specifically designed for patient comfort
- It should be Convenient to operate
- It should have Maximum stimulus-80
- It should have automatic off function after three minutes
- It should be operated through 9 Volt long life high output batteries

(10) Glass bead sterilizer

Portable, easy to handle with a very low current consumption.

- variable from 150 - 250 deg C, and temperature within 25 to 30 minutes and maintain uniformly as long as it is on.
- Instruments may be kept only for 10 to 30 seconds and will be ready for use.
- With High quality glass for retaining the temperature.
- Minimum Unit power consumption for day long work.

On reaching 250 deg.C indicator light will be on and the Unit will be ready

(11) Amalgamator

- It should have Digital display for pre-dosed capsules.

- It should provide more safety, economy & quality to the amalgam preparation
- It should have Modern design, with rounded edges, made of resistant material
- It should have Easy-access control panel, easy visualization of all the functions of the equipment
- It should have the perfect homogeneity & consistency of the amalgam mixture which is ensured by the elliptic movements,
- It should have an amplitude of 25 mm & a frequency of 400 oscillations per minute
- In case of accidental opening, the movement is automatically interrupted
- It should have microprocessor for high precision and continuous selection time setting mode from 0 to 30 seconds,

(16) 70mA, 110KV high frequency x-ray machine (40KHz) with spring balanced mobile stand)

1 Description of Function

1.1 This equipment enables digital imaging of both panoramic and cephalometric x-rays

2 Operational Requirements

2.1 System with Panoramic as well as Cephalometric X-Ray is required with all the accessories.

2.2 Should cater to all types of patients including adult, pediatrics, standing, sitting and wheel chair patients.

3 Technical Specifications

3.1 Based on DC current

3.2 Focal spot is 0.4/0.5 mm according to IEC 336/1993 specifications

3.3 Inherent filtration : 2.5mm Al equivalent

3.4 Tube voltage min range 60 kV to 80 kV

3.5 Tube current min range 5 mA to 10 mA

3.6 Exposure time – Panoramic – 10-15 secs; Cephalometric – 0.5-20 secs

3.7 Pixel size – 96-99 µm

3.8 Image resolution – 5-9 lp/mm

4 System Configuration Accessories, spares and consumables

4.1 Standard Intel Quad core desktop with original windows software, 4 GB RAM, 500 GB hard disk, 20 inch TFT monitor, DVD-RW and suitable film printer

4.2 X-ray unit should be supplied with lead apron, thyroid collar and gonadal sheath

5 Power Supply

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

5.2 Five KV Servo Voltage stabilizer of appropriate ratings meeting ISI Specifications. (Input 160-260 V and output 220-240 V and 50 Hz)

6 Standards, Safety and Training

6.1 Should be FDA approved product

6.2 Manufacturer/ Supplier should have ISO certification for quality standards.

6.3 Electrical safety for dental x-ray unit conforms to standards for electrical safety IEC-60601 / IS-13450

7 Documentation

7.1 User/Technical/Maintenance manuals to be supplied in English.

7.2 List of important spare parts and accessories with their part number and costing

7.3 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

- (18) Lead apron (Zero Lead)**
- (19) Lead Collar (Zero Lead)**
- (20) Lead Gonadal Protector (Zero Lead)**
- (21) Lead gloves (Zero Lead)**
- (23) Biopsy kit**
- Dental Patho Lab Items -**
- (25) Microscope – (i) Binocular Microscope**

Coaxial coarse/fine knobs. Tension adjustment, Fine focus knob graduated, stage movement –XY direction on rack and pinion, Quadruple revolving nosepiece, with right hand mechanical stage, Blue filter, Dust cover, Mirror unit, Immersion oil, power cord, Halogen lamp, Binocular observation tube inclination 45°, Diopter adjustment on the left.

(ii) Pentahead Microscope

Multiobservation system for 5 persons, fixed low stage nose piece focus, 15mm focus stroke with coarse adjustment limit stop, torque adjustment for coarse adjustment knobs, high sensitivity fine focusing knob adjustment, built in illumination for transmitted light, light intensity manager switch, high colour reproductivity LED light source, built in condenser with swing.

- (26) Centrifuge**
- (27) Microtome**
- (28) Wax bath**
- (29) Water bath**
- (30) Knife sharpener**
- (31) Hot plate**
- (32) Spenser knife**
- (34) Public address system**
- (35) Demonstration model : assorted model to impart training and education**
- (41) Bleachig unit**

- It should be easy to adjust at any angle position
- It should have 6 piece high power LED
- It should have 1-30 min adjustable timer
- It should have wide LED screen
- Wavelength should be 420nm – 490 nm
- It should have 3 intensities (Max>6000 mW/cm²)
- Input power should be 100-240V AC, 50/60 Hz.

117. Ferguson mouth gag

150. Oxygen cylinder with mask

158. Pliar rack; space for hanging atleast 10 pliers

159. Blue torch

160. Base former

- 161. Typodont
- 162. Typodont articulator
- 163. Welder
- 164. Hydro solder
- 167. Extra oral /intra oral tracer
- 168. Hot water sterilizer

Hot & Cold water sterilizer electrically operated double tanks each with 45 ltrs. /hr capacity. The chamber should be of stainless steel. The unit should be with low water protection and Automatic Pressur cut off device. Special arrangement for cooling of sterile water to required temperature. With Boiler having safety valve, water filter, Steam release valve, pressure gauge, Dial thermometer etc.

- 169. Geyser
- 170. Distill water apparatus

LAB EQUIPMENTS

174. Pressure moldings machine :

It should be equipped with heat insulating material and devices
 It should have a timer to prevent overheating of heater
 It should have fuse to prevent overload
 It should have noise filter.

Power Supply: 110 or 220 V, 50/60 Hz

Heater Output: 550 W

Motor Output: 1250 W

It should have a CE certification.

It should be supplied with 100 sheets for fabrication of appliance

It should be able to fabricate Splint / ortho retainer, Surgical / implant stent, Temporary crown & bridge form, Bleaching / fluoride tray and Night / mouth guard.

176. Welder with soldering attachment

Power Supply: 220V, 50 HZ Max Current 20 A

Transformer Heating Protection

Capacity Regulator:

Spot Welding: 1-30

Braze Welding: 1-9

Heat Treatment: 1-9

Dimension of weldment: 0.2mm-1.8mm

Fuse 5*20mm, 20 A

183 Sand blasting machine

should have Two tanks for Micro & Macro blasting

should have Pressure Gauge

should have Pneumatic Foot Control

should have Air Filter
should have inbuilt Water Air Filtering System
should have Complete Elimination of Dust

184. Vacuum mixture

should be capable for Bubble-Free mixing of Investments and Stones under Vacuum
should have internal suction
should have Digital Timer for setting mixing time
should have Accurate and constant vacuum mixing

185. Curing pressure pot

188. Pindex system

should have Porecision Laser Pinhole Drilling unit
should have Accurate Drill Hole positioning system
should have Easily adjusting working position for excellent result
should have Zeiser type drill supplied

190. Pneumatic chisel:

(Pneumatic chisel with compressor)

- Stainless steel body with automatic oil feeder and provision of controlling incision power by handpiece.
- Air pressure maximum upto 5/6 bar
- Air consumption 40-50 lt/min.
- Noise level should not exceed 78 dB (A).
- Should be provided with a compatible compressor having following features:
 - o 100 % continuous operation possible
 - o Low noise levels between 50-60 dB (A)
 - o Moisture draining facility
 - o Compressor should have facility of automatic switch on and off according to demand
 - o 20 L tank capacity with air output 60-70L/min

Compact and should have wheels for easy movement

192. Curing unit

194. Microsurveyor

Dimensions : Length 100m.m. X width 80m.m. X Height 200 m.m. to Length 120m.m. X width 110m.m. X Height 250 m.m.

Weight: 350 gms. To 500 gms.

- should have compact design and portability.
- should be useful for patient consultation and explanation of treatment.
- Should have freely adjustable points and easily readable scale lines.
- should come with all the attachments.

196. Flask press

198. Mechanical press

200. Duplicator

should have Heating Homogeneity, Eliminating Overheating Risks
should have 2 Possible Compounding Procedures-Continuous/Intermittent

should have 10 programs
should have Rotation Speed 30 Ltr/min
should have Capacity of 6 kg.
Weight not more than 20 kg

201. Electrolyting polishing unit:-

Application for non oxidizing dental alloys
Provide surface with bright,glossy and durable lusture

202. Wax heater

203. Wax carver

210. B.P. INSTRUMENTS STAND MODEL ADJUSTABLE TYPE

- Heavy duty stand
- Reliable, accurate, calibrated
- High quality component
- Velcro cuff
- Metallic silver coated
- 4castors wheel

213. X-RAY ILLUMINATOR VIEW BOX SIX PANEL

- SS metal housing
- Uniformly illuminated by white fluorescent lamps
- Plexiglas plate and roller pin for easy film holding
- Power supply 220 volt A.C main supply switch on front side
- Each viewing plane can be switch on separately

214. Revolving Stool

215. HI-VACUUM SUCTION MACHINE

- Anand's High Vacuum Suction Unit - India's First ISI Marked Suction Apparatus.
- Housing: Spot Welded, Oven baked cabinet (Also available with Stainless Steel Body)
- Capacity: -700 mm Hg \pm 10 regulable, flutter free vacuum control knob, 45 Ltrs / min.
- Pump Type: Double rotary vane pump
- Jars: Wide mouthed 2 x 2 Ltrs. (Polycarbonate) with self sealing bungs and mechanical over flow
- safety device.
- Tubing: 10 mm ID x 2 mtr (PVC)
- Vacuum Gauge: Bourden type 10 cm. Dia. 0-760 mm Hg calibration.
- Power: 230 V, 50 Hz, 4 \pm 0.5 Amps, 430 watts. (110 V on request)
- Noise Level: 50 dB A \pm 3 Almost whispers.
- Dimension & Weight: 50 x 38 x 70 cms, 40 Kg

216. ONLINE UPS 10KVA

(8) For Neuro Surgical Equpts –

1. ICP Monitor
2. Mobile C.T. Scanner
3. Cubicle track system of ICU beds
4. Patient warming system
5. DVT Prophylaxis device
6. Intra Operative Ultrasonography and colour Doppler
7. Stereotactic system with surgiplan software (for Neurosurgery)
8. Radio Frequency generator system (for Neurosurgery)
9. Ultrasonic surgical Aspirator
10. Hi frequency C-ARM system
11. Neuro navigation system
12. Mini plates and screws for fixation of Bone pieces and covering burr holes.
13. High end fully digital colour Doppler compatible to computer assisted spinal and neuro navigation.
14. Complete Multi-Dimensional Intra operative Surgical Imaging System (O-ARM)
15. Ultra Sonic Cleaner

Item No. 01

ICP Monitor Set

1. **Description:** Equipment is meant to monitor intracranial pressure in various compartment of brain digitally and in wave form on Multipara monitor.

2. Technical Specification:

- 2.1 Monitor should display mean systolic and diastolic intracranial pressure as digital display.
- 2.2 Micro sensor transducer having a strain gauge pressure sensor mounted in a titanium case should monitor ICP directly at the source—subdural, intra parenchymal and intra ventricular.
- 2.3 The ICP should get relayed electronically and get displayed at digital data rather than through hydrostatic column or fiber optics.
- 2.4 One touches zero function of transducers.
- 2.5 Facility to drain out CSF while monitoring.
- 2.6 User friendly setting for alarm functions.
- 2.7 Battery back-up facility for 2-3 hours.
- 2.8 Facility to be used for both adult and children.
- 2.9 Desired cable to be provided for wave presentation of ICP on multipara monitor.

3. Accessories:

- (1) 30 Subdural/Intraparenchymal transducer
- (2) 10 Intra ventricular transducer.
- (3) 5 Transducer cables

4. Environmental Factors:

The unit shall be capable of being stored continuously in ambient temperature of 0 – 50 deg. C and relative humidity of 15 – 90%

5. Power Supply:

Power input to be 180-270 VAC, 50 Hz Fitted with Indian plug.

6. The product should be both US FDA & European CE approved.

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19/8/14

Item No. 62

MOBILE CT SCANNER SPECIFICATION:-

A COMPACT, PORTABLE, BATTERY & LINE POWERED MULTI-SLICE CT SCANNER IS REQUIRED FOR CRANIAL AND CERVICAL SPINE APPLICATIONS IN NEUROSURGERY ICU AND OT. THE EQUIPMENT SHOULD BE FDA APPROVED.

I. X-RAY GENERATOR AND TUBE

1. SHOULD HAVE MULTI-SLICE CAPABILITY WITH MINIMUM OF 8 SLICES PER ROTATION.
2. THE TUBE VOLTAGE SHOULD VARY FROM 100-140 KV
3. X-RAY TUBE SHOULD BE FIXED ANODE OR BETTER.
4. SHOULD HAVE SOLID-STATE DETECTORS.

II. GEOMETRY

1. SHOULD HAVE A MINIMUM PATIENT OPENING OF 30 CM.
2. IMAGE FIELD OF VIEW SHOULD BE AT LEAST 250 MM.

III. IMAGE PROCESSING:

1. SHOULD HAVE CAPABILITY TO PERFORM NON CONTRAST CT (AXIAL), CT ANGIOGRAPHY (HELICAL), CT PERFUSION (AXIAL) AND 3D CT RECONSTRUCTION.
2. SHOULD ALLOW VOLUMERIC DATA ACQUISITION.
3. SCAN TIME FOR CT ANGIOGRAPHY AND CT PERFUSION SHOULD BE LESS THAN 4 MINUTES.

IV. IMAGE QUALITY:

1. THE RECONSTRUCTION MATRIX SHOULD BE AT LEAST 512X512

V. CONNECTIVITY:

1. SHOULD HAVE DICOM FUNCTIONS AND FULL DICOM 3 COMPATIBILITY. GIGABIT ETHERNET CONNECTIVITY IS ESSENTIAL AND WIRELESS CONNECTIVITY IS DESIRABLE. THE VENDOR HAS TO CONNECT THE EQUIPMENT WITH THE EXISTING PACS NETWORK OF THE HOSPITAL COMPATIBLE WITH THE DEPARTMENT OF NEURORADIOLOGY.

VI. ELECTRICAL SUPPLY:

1. SHOULD BE ABLE TO RUN ON SINGLE PHASE 220V AC
2. SHOULD HAVE AN INTERNAL AUTOMATIC VOLTAGE REGULATOR TO PROTECT AGAINST VOLTAGE FLUCTUATIONS AND POWER SURGES.
3. SHOULD BE SUPPLIED WITH INDIAN PLUG.

VII. PORTABILITY:

1. SHOULD BE COMPACT AND PORTABLE WITH ABILITY TO MOVE WITHIN ELEVATORS AND THROUGH NORMAL SIZED DOORS.
2. POWER DRIVE SYSTEM IF AVAILABLE SHOULD BE INCLUDED.
3. SHOULD HAVE BATTERY BACK UP FOR ATLEAST 2 SCANS

VIII. SAFETY:

1. SHOULD BE SAFE ENOUGH TO BE USED IN ENVIRONMENTS SUCH AS ICU AND OT
2. SHIELDING UPGRADE IF AVAILABLE SHOULD BE PROVIDED.
3. SHOULD SATISFY INTERNATIONAL RADIATION SAFETY REQUIREMENTS

IX. WORKSTATION:

A MOBILE WORKSTATION WITH ALL IMAGES PROCESSING SOFTWARE LOADED SHOULD BE PROVIDED.

Page No. 63

X. ESSENTIAL ACCESSORIES FOR USE IN OPERATION THEATER

1. SKULL CLAMP INCLUDING
 - PARK BENCH BASE UNIT & SPINDLE ADAPTOR
 - 150MM EXTENSION BARS
 - 1 BOX OF TITNIUM PINS CONTAINING 50 PINS
 - TORQUE WRENCHES -2
2. OT TABLE ADAPTOR
3. HORSE SHOE HEAD REST (ADULT & PEDIATRIC 1 EACH)
4. GEL PADS (ADULT & PEDIATRIC 1 EACH)
5. SILHOUETT SCAN BOARD (OR)
6. CERETOM SURGICAL DRAPER
7. NAVIGATION ADAPTOR

The cost of all individual item to be quoted separately otherwise bid will be rejected.

Item No. 03

SPECIFICATIONS OF HOSPITAL CUBICLE TRACK SYSTEM

Providing, Fabricating and fixing of Hospital Cubicle Track System comprising of the following components and specifications:

1) CUBICLE TRACK

Made of Aluminum Alloy of size 20 x25mm with 1.75 thickness having 50-60 microns powder coating in white color finish. Tracks are bendable to a radius of 300 mm at 90 degree to cover the whole bed.

2) CURTAIN:

Made of hospital grade premium quality Stain Proof fabric with High quality Net of 18" and 24" on top.

3) SUPPORTING SYSTEM OF TRACK CONSISTS OF THE FOLLOWING MATERIAL :

(a) Wall Bracket:

Made of CRC with white powder coating finish.

(b) Bridge Clamp:

Made of CRC steel with powder coating finish.

(c) Roof Clamp:

Made of aluminum pipe of 12.5 mm & 13.5mm inner & outer diameters. The Upper Circular Plate made of aluminum. These are with white powder coating (outer surface) finish & are of variable height fixed with ceiling with anchors, bolts, screws etc.

(d) Curtain Removal Point:

Made of CRC with SS finish for simple loading & unloading of curtain. (Also serves as an end hook retainer).

(e) Runners:

Roller wheel type runners made of Teflon for easy and smooth sliding of the curtain.

SPECIFICATION FOR PATIENT WARMING SYSTEM

1. Should be suitable for intra-operative applications.
2. Should consist of active warming arm-cum-shoulder section, pair of leg segments and abdominal segment to cover the entire body.
3. Should be based on semiconductor polymer foil for precise warming of entire patient body during & after surgery.
4. Size Abdominal Segment : (40-45) cm X (85-90) cm
 Arm & shoulder Section: (170-175) cm X (30-35) cm
 Leg Segment : (40-45) cm X (85-90) cm
5. Control unit should be cable of warming minimum four segments at a time.
6. Control unit should have Color TFT touch screen for easy operation.
7. Control unit should have touch screen display to select & display temperature of all segments at a time.
8. Control unit should automatically detect the number of segments which are connected to the unit and display the same on the screen.
9. Should offer precise digital temperature control with selectable temperature range of 37 to 40 degree in steps of 0.1°C
10. Arm cum shoulder segment should be divided in two sections capable of being switched ON or OFF independently depending upon the nature of surgery and condition of patient.
11. Should have facility to measure & display the real time core body temperature of the patient continuously on the screen.
12. Should also have on screen graphical display of patient body temperature for the entire duration of surgery.
13. Should have facility to independently adjust the temperature of individual segment.
14. Should have a provision to connect whole body blanket, pediatric size blanket, jelly based warming mattress / pad to the same control unit for future requirement.
15. Should have safety features such as Automatic check, Precise temperature control between warming system and patient, auto stop on detecting any problem
16. Should have non-latex ant-bacterially coated, blood and fluid resistant, washable and replaceable covers
17. The control unit should be light weight and small in size, easily attachable to LV rod / OT table with fixing claw
18. Should have low energy consumption and noiseless operation


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Specification for sequential intermittent pneumatic
compression system for DVT prophylaxis.

1. The controller should provide sequential, gradient & circumferential compression around the ankle, calf & thigh.
2. Controller should provide the pressure of 45 mm/Hg at the ankle area, 40 mm/ Hg at the calf area & 30 mm/Hg at the thigh area.
3. Controller should have graphic user interface of 3.2 inch colour LCD & provide greater visibility.
4. Controller should have VRD (Vascular Refill Detection) technology with three ways tubing & 6-8 hrs battery backup.
5. Consumable sleeves should have three bladders for giving optimal compression in different areas of the leg.
6. The compression system should be USFDA/ISO/CE Mark certified quality product.
7. SHOULD BE QUOTED WITH 50 PAIRS OF CONSUMABLE SLEEVES
8. PRICE OF CONSUMABLES TO BE QUOTED SEPERATELY AS WELL

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ITEM NO. 06

Intraoperative Ultrasound and Color Doppler for Neurosurgery

Ergonomic Design

Portable design, be ready at anytime and anywhere • At least 15-inch high resolution LCD monitor with wide-view angle • Standard PC keyboard, easy input • Two probe sockets with probe holder, better protection for probes • Rechargeable lithium battery, at least 1 hour scanning without power supply • Abundant peripherals: DICOM3.0, VGA, video out, USB, S-Video, Footswitch etc.

Mounted on trolley or easy portability

Comprehensive Functions

Complete working modes, outstanding 2D performance, sensitive blood flow imaging.

Complete working modes:

• B Mode, Dual B, 4B • M Mode, Steer M, • Color Mode, DPI Mode • PW Mode, CW Mode (optional)

• Premium B/W trolley system with color option • 15 inch antiglare high resolution LCD monitor • Imaging mode: 2D, M, 2B, 4B, B/M, PW, and HPRF • Advanced imaging technologies: u-scan(speckle reduction imaging), THI, Trapezoid imaging,

Multiple Transducers Intraoperative for brain spine, burr hole probe transducer:

Neuro Burr Hole Transducers

Multi Frequency Burr-Hole Transducer

Multi frequency (3-7.5 MHz) burr-hole transducer that is ideal for shunt placements and taking biopsy samples.

Main Specifications

Array Type: Phased Array Insertion diameter: 12mm Scan angle/width: 90°

Frequency range: 3-7.5 MHz Puncture adapter: Included as standard

Sterilization: Plasma, 2% Gluteraldehyde, Cidex, Perasafe

Neuro Microsurgery Transducers

Multi Frequency Micro Surgery Transducer

Multi frequency (5-13 MHz) micro-surgery transducer that is ideal for tight situations and is the choice transducer for cervical spine scanning

Main Specifications

Array Type: Linear Array Insertion diameter: 10mm Scan angle/width: 10mm

Frequency range: 5-13 MHz Handling tool: MP-2749 (T-type) & MP-2750 (I-type)

Sterilization: Sterrad, Plasma Gluteraldehyde, Cidex

Linear Transsphenoidal Transducer

Super High Density, multi frequency, linear transsphenoidal transducer for scanning the pituitary gland, cervical spine, and use during other neurosurgical procedures.

Main Specifications

Array Type: Linear Array Insertion diameter: 10mm Scan angle/width: 5mm

Frequency range: 5-13 MHz Sterilization: Plasma, 2% Gluteraldehyde, Cidex, Perasafe

Craniotomy Transducers

20mm Multi Frequency Neuro Convex Transducer

Multi frequency (3-7.5 MHz) transducer with a smaller footprint (20mm) that is ideal for scanning during craniotomies. Stronger penetration is ideal for scanning deep cavernous tumors and other neuron lesions. Super high density which provides superb near field resolution and detail for needle guidance.

Main Specifications

Array Type: Convex Array Scan angle/width: 65°/20mm Frequency range: 3-7.5 MHz
Puncture adapter: MP-2458 Sterilization: Plasma, 2% Gluteraldehyde, Cidex,
Perasafe
20mm Multi Frequency Neuro Convex Transducer

Multi frequency (3.75-10 MHz) transducer with a smaller footprint (20mm) that is ideal for scanning during craniotomies.

Main Specifications

Array Type: Convex Array Scan angle/width: 20mm / 70° Frequency range: 3.75-10 MHz
Puncture adapter: MP-2458 Sterilization: Sterrad Plasma Gluteraldehyde, Cidex

20mm Multi Frequency Convex Transducer

Multi frequency (5-10 MHz) transducer with a smaller footprint (20mm) that is ideal for scanning during craniotomies with hemispheric sound thchnology which provides exceptional near field resolution and detail for needle guidance.

Main Specifications

Array Type: Convex Array Scan angle/width: 20mm / 65° Frequency range: 5-10 MHz
Puncture adapter: MP-2458 Sterilization: Plasma, 2% Gluteraldehyde, Cidex
Specify Life of Equipment in standard operating condition from the date of Installation.

- Each Item should be both US- FDA and European CE approved and Enclosed the Desired Documents mentioning the name of Item.
- Lot number and name of Company should be mentioned on each instrument.
- It Should also have mentioned country of origin manufacture on each instrument.

It should have

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Item No. 07

07

Stereotactic System Specification
The stereotactic system should be arc centered with a 190 mm radius, and be based on cartesian coordinate system
The cartesian coordinate system shall conform to the X, Y and Z nomenclature used in CT and MR Scanning
There shall be sterilization trays tailored for the frame and arc system included in the delivery
The principal components of the stereotactic system shall include a cartesian frame and a semicircular arc
Numeric coordinate values shall be engraved on the frame and the arc and be displayed in millimeters
The semi circular arc shall incorporate a sliding instrument carrier for use with instruments such as needles, electrodes, and other micro surgical instruments
There should be three options of lengths of the posterior post (long, medium and short)
The guide and stop inserts should be able to split into two parts to enable effective cleaning
The instrument carrier shall have separate adjustable instrument guide and stop so that the guide can be brought close to the skull opening in order to optimize accuracy
The stereotactic system should include CT and MR adapters to secure and support the patients head during scanning ensuring accurate imaging
The imaging adapters should be adjustable to ensure a parallel scan plan without involving manipulation of the gantry of the scanner
The total accuracy of the frame should be minimum 0.7 mm
The system (frame and arc) should be suitable for paediatric stereotaxy (for children over 2 years of age)
The frame should be compatible with X ray, CT and 1.5T and 3T MRI
The system should allow for transoral or transnasal intubation at any time during the procedure
The stereotactic system should allow for an approach inferior to the frame for posterior fossa and transphenoidal trajectories
The stereotactic system should provide ear pins for utilization as positioners and stabilizers for frame placement on the patient
The stereotactic system should allow for arc fixation to the frame in both the lateral as well as the sagittal orientation
The stereotactic system should be validated for gas sterilization (ETO), steam sterilization (autoclaving) and STERRAD (gas plasma sterilization)
The system should have a dedicated CT table fixation, Adaptor, indicator box and for MRI should have a dedicated adaptor and indicator box
The X-and /or Y coordinates should be set on both sides of the arc and frame to ensure the highest possible accuracy
The Stereotactic System should have an option for testing its accuracy of the complete frame and arc with the target stimulator

Item No. 07

The CT and MR Indicator box should not be a limitation for how low the frame may be mounted
The system should have the provision for three point fixation for high stability
The company should provide a tool that can be used to test the straightness of the needles and electrodes on request
The stereotactic system should provide tools for intraoperative image verification of the placement of clinical probes in relation to the target- Cross Hairs
The stereotactic frame should have a curved front piece which provides access to the patients airways. It can be fitted with the curve in the inferior or superior orientation
COMPULSORY ACCESSORIES
The system should have the vaccum and side-cutting principle of Sedan biopsy needle with a 10mm needle window with stop and guide of diameter 2.5mm
The coordinate frame should have an insertion cannula designed to obtain safe guidance of implants, electrodes or catheters using stereotactic technique.
The stereotactic frame should accompany a Haematoma Evacuator which allows evacuation of haematomas through a single burr hole
OPTIONAL ACCESSORIES
The Stereotactic Frame should offer a rigid and accurate fixation to the operation table headrest. The three point fixation allows for high stability even if the patient is shaking
The MicroDrive should be fully integrated with the Stereotactic Arc and provide exact positioning of electrodes in the brain when performing Micro Electrode Recording (MER), macro stimulation and DBS electrode implantation
The system should have the vaccum and side-cutting principle of Sedan biopsy needle with a 3mm needle window with stop and guide of diameter 2.1mm
The Stereotactic system should accompany with twist drills used to twist burr holes through the stereotactic arc of varying diameters of around 2 and 3 mm with a reducing tube for a smaller drill
The stereotactic system should provide instrument for safe puncturing of intracranial cavities with the insertion needle of diameter more than 2mm with accomodating catheters of more than 1.4mm diameters
The stereotactic system should provide instrument designed for the injection, as well as for diagnostic and therapeutic punctures, aspirations and evacuations

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<p>The system should also provide a 5 channel connection cable for the micromacro electrodes as an accessory</p>
<p>The microdrive should provide a universal guide tube for micromacro or microelectrode DBS lead at 20/30mm and DBS guide tube 40mm, 30mm before target point</p>
<p>PLANNING SOFTWARE SPECIFICATION</p>
<p>The system shall allow the user to virtually place the entry and target points directly within images of the patients brain acquired from CT, MR and Angiography</p>
<p>The system shall allow to interactively visualise and examine the tissue that the surgical pathway will effect</p>
<p>The system shall allow to avoid critical structures such as blood vessels, cranial nerves or other critical structures by adjusting the virtual surgical pathway prior to surgery. It shall be possible to simulate any number surgical pathway</p>
<p>The system shall have an intuitive and easy-to-use graphical interface and image handling</p>
<p>The system shall be able to import and display CT, MR, PET and Angiographic images. Images should be possible to directly import from CT, MR and PET scanners via hospital networks, CD or a USB key</p>
<p>The system shall automatically reconstruct images in directions other than that of the original tomographic image study that was imported</p>
<p>The system shall be able to fuse two image studies and have different fusion functions, including interactive blending in real time</p>
<p>Outlined targets and paths shall be possible to project onto all open image views and imaging modalities, including that targets outlined on angiographic images should be projected on to CT, MR and PET data sets</p>
<p>Targets should be possible to outline semi-automatically or manually, and non-continuous regions should be allowed</p>
<p>It shall be easy to simulate different surgical paths, and to manipulate them directly in the images</p>
<p>Localisation, planning and manipulation shall be possible across different images views(axial, coronal, sagittal) and modalities CT, MR, PET and Angios</p>
<p>Placement and visualisation of unlimited number of targets, entry-points and trajectories</p>
<p>The system must provide the user with stereotactic coordinates, including the ring and arc angle necessary to realise any virtual surgical pathways intraoperatively</p>
<p>Software must be able to recalculate new ring and arc coordinates for a predetermined surgical pathway if the surgeon desires to reorient the arc position for any of the following orientations. Right to left, left to right, anterior to posterior and posterior to anterior</p>
<p>It shall be possible to visualise planned trajectories along the probes eye view and parallel to the probe in both 2D and 3D format</p>
<p>The system shall have the ability to resume the entry point to plan any number of pathways</p>

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<p>The Planning software should have a pre-planning module which increases flexibility and saves time and resources by allowing the neurosurgeon to plan procedures days ahead of the surgery.</p>
<p>The system should enable co-registration of frame-based and frameless images</p>
<p>It should be possible to design a workspace that displays more than 4 image windows</p>
<p>The planning software should have ImageMerge facilities for better interpretation by enabling the co-registration of image studies with one other. It allows automatic and manual coregistration of any frameless image study with a frame based reference study.</p>
<p>Snapshots should be possible to take directly from the screen, allowing complete documentation of custom layouts and image sections</p>
<p>The system must have complete online help with advanced functions</p>
<p>The system should enable to combine different image modalities such as CT, MR and PET</p>
<p>It must be possible to have the planning system on a PC laptop</p>
<p>The system must be Linux based</p>
<p>The patient files should be organised in a true database that enables easy search, sorting and exporting of patient data</p>
<p>It must be possible for the user to design new workspace layouts which displays original or reconstructed images</p>
<p>OPTIONAL SOFTWARE LICENSES</p>
<p>It must be possible to define the AC-PC line whether or not it lies in a single image plane and also realign the patients image to the ac-pc plane</p>
<p>IT must be possible to realign the patients images to the AC-PC lines</p>
<p>It must be possible to localise functional targets defined by AC-PC line based formula</p>
<p>The software must offer a combination of sophisticated 3D matching, overlay of atlas countours on patient images, and interactive selection of displayed atlas countours to increase confidence and ease of use to identify correct targets</p>
<p>The software add on allows users to combine the physiological data of PET images with the anatomical data of CT and MR images using predefined color lookup tables</p>

Item No. 08

Neuro R. F. Lesion Generator Specification
Should have automatic lesion temperature control
There should be online monitoring of lesion parameters
Should have a Bar graph to monitor temperature
Electrodes with integrated thermocouple temperature sensing should be available
There should be Monopolar, bipolar and dual monopolar for brain lesioning
should provide Pain electrodes for Facet Denervation, rhizotomy and partial rhizotomy
Should have customized pain electrode for treatment of pain due to injury of the dorsal roots
there should be curved and straight disposable cannulas with various tip length for pain electrodes
Choice of Blunt and sharp tip option on curved disposable cannulas for pain electrodes
pain treatment with either continuous or pulsed RF should be available
The machine should have a compact size and a maximum weight of 5 kg
should be Easy sterile draping and sterile operations of all controls
Remote control of stimulation parameters should be available
All electrodes must be sterilizable in autoclave
Forceps coagulation option should be available
Technical Data to me entered in specification:
Should have continuous RF Lesion output of power 0-30w and waveform of 512 kHz sine and Time in sec and temp in C from 0-100
The Stimulator output range is 0-35V and frequency between 3-200 HZ with a square waveform
The Pulzed frequency of 512 khz , range 0-55V, 1-8 HZ, pulse duration 20,32, and time in sec 0-200
The Current in mA 0-15, impedance 20-1000, and temp C 0-100
The machine should have a Self test mode, protective circuits, and line power V AC 115/230
FDA/CE approval
OPTIONAL ACCESSORIES
Should have fine short electrodes with a length of more than 68 mm and diameter of 0.4mm and should include a cable and sterile tray with cannula tip 2mm (22G)
should have fine long electrodes with a length of more than 160mm and a diameter of 0.55mm and should include a cable and sterile tray with cannula tip 2mm(20G) and curved cannula tip 10mm (20G)
Should have a DREZ electrode to be used with the neurogenerator for lesioning preferably with tip L=2.0mm, D=.25mm with guide cannula and stainless steel guide cannula
Should have cannula tip 2mm(22G) and curved cannula tip 10mm(22G)sharp and blunt for electrode length more than 117mm and diameter 0.4mm
Should have monopolar lesion electrodes of tip diameters 1x2mm, 1x3mm, 2x2mm
The system should provide a bipolar macro electrode for macro stimulation and bipolar lesioning using the lesion generator and microdrive

Ultrasonic Surgical Aspirator

Ultrasonic surgical aspirator should have fragmentation, irrigation and aspiration facilities even for fibrous and calcified lesions.

1. Console should be lightweight and portable on trolley with single foot switch.
2. Main voltage should be as per Indian standard with perfect class of protection.
3. Console and hand piece should be capable of working continuous without any cooling system.
4. Should have in build suction system with high vacuum
5. Irrigation rate should be up to 50ml/min.
6. Hand piece should be lightweight sterilizable by steam autoclave or plasma.
7. Hand piece micro and Macro offered should have choice of outside and inside irrigation; Tip of hand piece must be reusable; can be used for long time continuously without cooling and getting heated. Central activation should be through foot switch.
 - (a). Macro hand piece, short angled with connecting cable frequency: 25 kHz and 35 kHz app.200g, length approx.4 cmm, tip diameter outer 3mm while inner 2 mm.central activation foot switch (one each of both frequency)
 - (b). Micro pen hand piece, long angled with connecting cable; frequency: 25 kHz and 35 kHz weight approx.100g, length about 10 cm, diameter outer 2-2.5 and inner 1.5-2.0(one each of both frequencies)
 - (c). Micro-pen-hand piece of 35 kHz for bony lesion removal of adequate size and weight
8. Minimum 20 pcs of consumable accessories should be provided and should be easily available thereafter.
9. Should be Magneto restrictive or piezoelectric technology based system.
10. Resonance frequency of tip should be in range of 20-45 kHz.
11. Should have original container for hand piece for storage and autoclaving.
12. Essential accessories are to be provided free of cost
13. Cost of consumable items should also be quoted separately.

Each Item should be both US- FDA and European CE approved and Enclosed the Desired Documents mentioning the name of Item.

All Instruments Should be highly heat resistance.

Lot number and name of Company should be mentioned on each instrument.

It should also have mentioned country of origin manufacture on each instrument.

The surface of the instruments should be non reflective.

Specification for High End C-ARM for Neurosurgery

10 C-Arm Specifications

A X-RAY GENERATOR

Frequency : 40 KHz or better
Power output : 20 KW or more
KV range : 40-110 KV or better
mA in radiography : 20mA 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 X-Ray tube-Head

Must have anode heat capacity of min 70,000 HU & cooling rate of min 35,000 HU/Min
Should have dual focal spots
Collimation : motorized iris and motorized rotating blades
Tube assembly filtration of 3.0 mm Al or higher

C C-Arm mechanism and control panel (digital work station)

Locks for stabilization at desired position
It should have the following range of movements:
Motorized vertical movements more than 400mm
Horizontal travel : 200mm or more
Orbital movement : (-) 30 deg. To (+) 90 Deg. (120-Deg. Or more)
Swing / panning movement : +/- 12 degrees or more
Source Image distance : 900 mm or more
Depth of c-arm : 650 mm or more

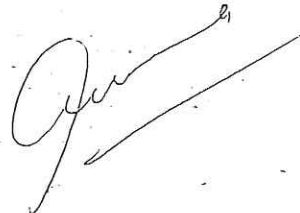
D Control panel (Digital work station)

It should have the following facilities :
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

E Integrated image processing, recording and memory system :

a Image Intensifier tube

Input diameter 9" with Triple field (9/6/4)
Minimum central resolution (at monitor) : 2.0 lp/mm or better at 9" FOV



- b. **CCD camera**
CCD camera with 1Kx1K resolution for high resolution image acquisition
 - c. **Integrated image processing, memory and recording system should have**
Medical Grade Monitor (Two Mon.)
Min. 18 inch or more, black and white, flicker free, high resolution (1280x1024 pixels or better), medical grade flat screen TFT, automatic and manual control of brightness and contrast, mounted on mobile trolley with locking device.
 - s. **Digital image processor**
Provision to record multiple images on CD, DVD & USB with embedded DICOM viewer.
Image processing at 1K x 1K Matrix
Contrast enhancement, edge enhancement, zoom facility
Recursive filter for detecting motion
Last image hold
Image rotation, vertical and horizontal reversal
Medical imaging software's with ability to store 70,000 images or more in hard disk
DICOM option
 - e. **Additional features**
The equipment should work on a Power supply of 220-240 Volts, 50-60 Hz, 15 amp.
Built in UPS to protect & save patient data.
 - ii. **Regulatory / Safety Requirement**
Equipment should have AERB Type Approval Certificate for radiation safety.
Equipment should have CE for EU product with notified body identification number or PDA certificate.
2 yr warranty & 5 yr OMC should be included with provision of supply of spare parts of the model supplied for next 10 years.
- I. The system supplied should be complete in all aspects and ready to use in all aspects of its functions.

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Item No. 1611

Neuro Navigation System (Image Guided System for Cranial & Spinal Applications)

1. The System should be easy to set up, user friendly, intuitive and should work under Linux / Unix/ Windows operating system environment.
2. The navigation system should have point as well as surface registration with accuracy prediction system.
3. The navigation system must have dynamic referencing so that registration is not lost even if camera or the patient moves.
4. Should have facility for marker less registration.
5. Should have user friendly application software.
6. The system should have facility of keeping optical camera and viewing system together or separately to allow optical use of O.T space. The system should have two monitors, one for the surgeon and the other for the OT/Technical staff.
7. The surgeon Monitor should be high resolution (at least 1920 x 1200, 60 Hz) with a viewable size of at least 24" widescreen.
8. It should have hybrid tracking system with active and passive instrument.
9. It should have universal instrument adapter tracking system with active & passive option.
10. The system should have image guided spinal instruments like short drill guide, Awl, Probe and Tap system with straight or T-handles option.
11. The system should include a frameless biopsy system with needles.
12. The system should interface with all major microscope systems available at Hospital
13. The Microscope interface should be such that the navigation system can track microscope's focal point & trajectory plan.
14. The Microscope interface should give heads up display.
15. The navigation system should have hardware & software for stereotactic surgery including functional stereotactic procedures. The software should reorient the scan images along the AC-PC plane. The stereotactic system should be adaptable to major frames like Leksell and CRW.
16. Navigation system should have a Grid & Deformable Atlas for better navigation.
17. The system should have 3D graphics capability and software to merge CT & MRI images of machine present at Hospital
18. Look ahead view capability to show the images at 1mm to 20mm (increments of 1mm) in front of the probe.
19. All applications should have US FDA, CE or BIS approval.
20. The bidder shall provide all updates, software and hardware support for the systems and accessories during the warranty and CMC period.
21. The spine application should be a unified spine application which should comprise of 3D spine (Spine Navigation with Spine CT Data) and virtual fluoroscopy navigation for spine.
22. The application should be able to memorize multiple surgeon preferences for each procedure.
23. There should be a wireless control from the sterile field in form of surgeon mouse.
24. It should be able to do a customized setup and automated functional check. It should have universal instrument adaptor tracking system with active and passive option.
25. System should have facility of virtual fluoroscopic navigation for spinal applications compatible with 9"/12"C-Arm available at Hospital
26. The System should have Navigation instruments for Minimal invasive Spine Procedures.
27. 5 Years Warranty with spares and further 5 Years CMC with spares. Should have service centre in the Eastern Region of India
28. Undertaking to stock an inventory of all spares for 10 years.
29. Man Power should be provided for supporting cases for 5 years.
30. *It should have at least three (3) installations in Govt. Institutes in India. The performance certificate from the end users must be enclosed in the tender document.*

For Neuro-Navigation
and O Arm

To add in Specification

— It should have at least 3 (Three) installations in Govt. Institute in India and required the performance certificate from the end user.

Amir G
7/21/16
Dr. Amir Kumar
M.S., M.Ch.
Professor & H.O.D.
Dept. of Neuro Surg
RIMS, Ranchi

Item No. ~~12~~ (12)

1. Miniplate Fixation Set

Description: Miniplate fixation set is for cranial repair of craniotomy site and closure for burr hole site or craniectomy site by MRI compatible Titanium plate/screw/mesh for rigid fixation and protection. It should have US FDA / CE approved. The desired document should clearly indicate the name of instrument in FDA and CE certificate. All instruments should have name of company and code no. It should contain the following minimum components

Screw driver with blade for cross & square, twist drills with handle for screw with thread

Plate bending forcep

Plate holding forcep

Plate cutting forcep

Self drilling screw 1-1.5 mm dia & 3mm long

Self drilling screw 1-1.5 mm dia & 4 mm

Self drilling screw 1-1.5 mm & 5 mm

2 holes titanium plate approx.. 15 mm

4 holes titanium plate

Long multihole titanium plate about 6 cm

Titanium mesh approx... 6x9 cm

Burr hole titanium cover 20 mm

Double Y titanium plate approx...15-20 mm

Container for storage and sterilization of same company

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**HIGH END, LATEST, PREMIUM FULLY DIGITAL COLOR DOPPLER
COMPATIBLE TO COMPUTER ASSISTED SPINAL AND NEURO NAGIVATION**

- SHOULD BE OF LATEST TECHNOLOGY
- SHOULD HAVE AT LEAST 19" LCD/TFT COLOR DISPLAY
- SHOULD SUPPORT B,M,COLOR,PW,POWER DOPPLER MODES
- **Directional power Doppler and advance dynamic flow/e flow MUST BE PRESENT For small flow detection.**
- SHOULD HAVE 3 ACTIVE AND ONE PARKING PORT
- **SHOULD HAVE HIGH FRAME RATES MORE THAN 700 FPS**
- SYSTEM DYNAMIC RANGE SHOULD BE MORE THAN 170DB
- **SHOULD HAVE TISSUE HARMONIC IMAGING CAPABILITY IN ALL PROBES**
- SHOULD HAVE REAL TIME COMPOUND IMAGING TECHNOLOGY
- BOTH REAL TIME AND FROZEN ZOOM UPTO 16 TIMES
- **SHOULD HAVE INTEGRATED TOUCH SCREEN/PLASMA TOUCH SCREEN FOR USER FRIENDLINESS**
- REAL TIME QUANTIFICATION OF DOPPLER PARAMETERS WITH SMART TRACE
- FACILITY OF PANAROMIC VIEW/EXTENDED FOV MUST BE PRESENT
- **SPECIAL SOFTWARE FOR INTIMA MEDIA THICKNESS CALC (IMT PACKAGE)**
- ALL PROBES SHOULD BE MULTIFREQUENCY WITH MINIMUM 5 FREQUENCY SELECTIONS
- **CINE LOOP MEMORY OF MORE THAN 15000 FRAMES AND 60 SEC M/D SCROLL**
- SCANNING DEPTH MINIMUM 24 CMS
- EXHAUSTIVE SOFTWARE FOR WHOLEBODY APPLICATIONS WITH REPORT FORMATS
- 1000 PATIENT DATA MEMORY SHOULD BE AVAILABLE

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- SHOULD HAVE INTEGRATED HARD DISK FOR IMAGE STORAGE/RECALL WITH COMPLETE IMAGE MANAGEMENT
- DIRECT COMPATIBILITY TO ATTACH INKJET/LASERJET PRINTER ALONG WITH A CD-RW MUST BE AVAILABLE
- THE SYSTEM MUST HAVE FACILITY FOR UPGRADATION TO REAL TIME 4D IMAGING USING ABDOMINAL & TRANSVAGINAL VOLUME PROBE(PRICES TO BE OFFERED OPTIONALLY)
- TISSUE DOPPLER IMAGING SHOULD BE AVAILABLE AS OPTION
- ANGULAR M-MODE/ANATOMICAL M-MODE OPTION SHOULD BE AVAILABLE
- THE UNIT SHOULD BE DICOM READY FOR CONNECTING TO REMOTE SERVER/LASER CAMERA
- **PROBES – (THREE PROBES)**

THE SYSTEM SHOULD BE QUOTED WITH MULTI FREQUENCY MICRO SURGERY TRANSDEUCERS FOR SURVICAL SPINE SCANNING (5 - 13 MHZ).

ANOTHER PROBE (LINEAR) – SUPER HIGH DENSITY MULTI FREQUENCY LINEAR TRANSSPHENOIDAL TRANSDEUCERS FOR SCANNING THE PITUITRY GLAND, SURVICAL SPINE AND OTHER NEURO SURGICAL PROCEDURES.

ANOTHER PROBE (MICRO SURGERY) – TINY TRANSDEUCERS TO HANDLE TIGHT SITUATIONS FOR SUVICAL SPINE SCANNING.

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14 General Specifications : Complete Multi-Dimensional Surgical Imaging System

- It should have a 270° to 360° scan and should be motorized with more than 100 images and two levels of 3D slice thickness.
- It should have a Telescoping door-section for lateral-patient access
- The Imaging components should be in enclosed housing for increased patient and staff safety.
- It should be Fully functional with no component movement in and out of sterile field.
- It should have a High resolution fluoroscopy (> 50 LP/in. in low dose mode)
- It should have High resolution 3-D - Axial, Coronal, Sagittal planes.
- It should have 20 kW to 32 kW X-ray generator for imaging dense anatomy.
- It should have Large 30" (diagonal) display for superior viewing at a distance.
- It should have the Ability to go 'full-screen' on any image for superior viewing at a distance.
- It should have a Wireless, sterile mouse control of image viewing.
- It should have a Robotic positioning system in 6 degrees of freedom.
- It should have the Ability to position x-ray tube on either side of patient in lateral 2-D imaging for decreased surgeon exposure.
- It should have a Storage of pre-set imaging positions for quick, accurate access to commonly viewed images, avoiding the need for re-scouting.
- It should have a Storage of pre-set 'park' position for easy access to patient while imaging is not required.
- It should have a Power drive for easy handling of imaging system.
- It should Utilize 40 x 30 cm digital flat panel detector, 3 megapixel (2K x 1.5K; pixel pitch of 0.192mm) for increased image quality (large field of view, square images without distortion).
- It should Complete 3-D image acquisition in ~13 seconds.
- The 3-D image should be displayed in less than 30 seconds from initiation of acquisition.
- The Bore diameter of the imaging system should be more than 78cms.
- The source to image distance should be more than 39".
- The imaging system should have a provision for selecting region of interest for automatic brightness and window/level control.
- The imaging system should have a automatic noise reduction, edge enhancement, full screen zoom, digital image rotation, digital window/level control, left/right and top/bottom image reversal, positive/negative image inversion.
- The imaging system should be able to store more than 10,000 2D images and more than 200 3D scans on hard disk.
- The imaging system should have a CD R/W.
- There has to be various outputs like Ethernet, USB, Composite video, S- video.
- The imaging system should have DICOM functions.
- The imaging system should offer two levels of operation allowing optimal slice thickness/reconstruction time selection based on the clinical application.
- The imaging system should offer 12cm volume cube or more anatomical coverage.
- The imaging system should have different types / features of rotation like Orbital, pivot, swivel, Iso-wag.
- The Multi - Dimensional Surgical Imaging System should be compatible with Surgical Navigation system.

It should have at least 3 (Three) installations in Govt. Institute in India and performance ~~rep.~~ Certificate from end user should be attached.

Anand
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SPECIFICATIONS FOR ULTRASONIC CLEANER

- 1) Ultrasonic cleaner for cleaning of different types of instruments.
- 2) Should have a tank volume of 40-45 liters.
- 3) Should operate between 35-40 kHz frequencies.
- 4) Should have integrated automatic degassing function.
- 5) Should have integrated heating and have a knob for setting the required temperature.
- 6) Should have electronic time and temperature control. System should have temperature display and monitoring.
- 7) Should have a temperature controlled auto start function.
- 8) Should have an integrated drain knob for easy and safe drainage and safety switch off.
- 9) Should be supplied with basket and cover for tank.
- 10) Should evenly distribute the ultrasonic wave's distribution.
- 11) Should run on 220 V power supply.
- 12) The Manufacturing company should meet standards i.e ISO 9001 , ENISO 13485 & European CE/ US FDA .
- 13) The essential detergents, chemicals for 100 cycles should be supplied with the system..

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(9) For Refrigerator –

1. 180-200 ltr capacity refrigerator with voltage stabilizer and foot stand.
2. 250-300 ltr capacity refrigerator with voltage stabilizer and foot stand.
3. 350-400 ltr capacity refrigerator with voltage stabilizer and foot stand.


(10) For Lead Apron –

1. Lead apron coat type 0.5mm PB, lead Eqv. Size- 60 x 100cm
2. Thyroid shield 0.5mm PB
3. Gonoids Shield 0.5mm PB
4. Lead goggles with side protection 0.5mm PB (Imported)
5. X-Ray Barrier, size-6"x 3" made of pre laminated board. 1.5 mm lead equivalent mounted on 50mm dia castor with lead shutter
6. Apron stand for five apron hanging capacity. Frame made of MS tubular frame powder coated finish.
7. Lead Cap


Director

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28/01/16


28/1/16