

## Technical Specification for IVF Laboratory Set UP

Sr. no	Name of Item	Description	Technical Specification
1.	<b>Ovum Aspiration Pump</b> With connecting tube with hydrophobic filter, and foot pedal actuator	Precision built, regulated, vacuum pump for ovum aspiration * Rapid suction response at the needle tip and is able to hold constant vacuum settings accurately, for long periods * Boost feature to clear blockages in Aspiration needle * Ultra-quiet, vibration-free operation. * Foot Pedal allows hands-free operation.	Power Supply: universal input 100-240 V AC, 50/60 Hz Vacuum : -10 to -500 mm Hg Dimensions : Width x height x depth : 220 x 102 x 336 (mm) Weight : 3.2 Kg
2.	<b>Heating block</b>	To keep temperature at 37 degrees Celsius	18 cavities for 14cc tubes
3.	<b>IVF Test Tube warmer</b>	IVF test tube warmer fits 14 test tubes 14 ml. * Adjustable temperature * Transparent front panel for viewing tubes * Removable panels for easy cleaning * Aluminium block covers 2/3 of the tube which gives better uniform heat to the tubes	Dimensions ( cm ): W:10 D:20 H:13,5 Heater power: 40W Set point: Ambient to 50° C
4.	<b>Test Tube Heater</b>	Clear front panel allows continuous observation of test tube contents. * Redundant temperature controller prevents overheating. * Panel is easily removable for decontamination. * Accepts (6) Falcon test tubes * Operating temperature is preset to 36.9°C or can be factory reset to meet individual requirement. * Unit should come with a polycarbonate stand.	For keeping the temperature at 37 degrees celcius With Alternate Power Supply
5.	<b>IVF Work station Integrated Laminar Flow</b>	4x2 feet Camera Set, which includes Camera, TV tuner Card, Cables and Connect providing Stereozoom Microscope due to	<b>Work Table</b> : with Mirror Finish Surface Cleanliness : Class 100 Particle Retention : 0.3 Micron Noise Level : 56 decibel ± 5%

*BLaw*

*Shaf*

*ME*

*Em*



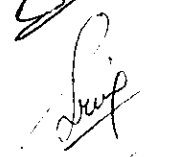
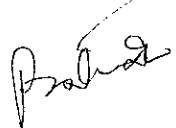
*C*

*A*

		<p>Compatibility.</p>	<p>Blower : Centrifugal Type          Illumination : Fluorescent Tubes with diffuser - 40W, 2ft          Power Sockets : 4 Nos. of-5 Amps Sockets          Power Supply : 220 V Single Phase , 50 Hz. 1.2 KVA          Temp. accuracy : <math>\pm 0.3^{\circ}\text{C}</math> (Room Temp needs to maintain <math>9^{\circ}\text{C}</math> less than set pt.)          Temp. Uniformity : <math>95\% \pm 5\%</math>          Monitoring System : 16" LCD Monitor used for visual Monitoring          Operation Mode: Switching Mode, Imported Switch  <b>HEPA- Filter</b>          Media : Ultra clean glass Fiber paper - Imported          Casing : Aliminium Box Type          Seperators : Minipleat no seperators          Retention : 0.3 Microns and above          Efficiency : 99.997 %  <b>Pre- Filter</b>          Media : Synthetic, Non-woven polyster fibers          Casing : Aluminium Flange Type          Retention : 10 Microns          Efficiency : 99.97 %  <b>INTEGRATED TABLE HEATING SYSTEM</b>          1. Integrated Table Heating area 45 Cms x 50 Cms. With          2. Microprocessor Based Temperature controllor          3. Heating Coil for Uniformity &amp; Stability STAGE          4. Microscope Fittings with Heating Stage Warmer with Microprocessor Based Temperature controllor -          6. Rectangular Aluminium with Anodized Block, with 15 ml</p>
6.	<p><b>IVF Antivibration Table for ICSI procedure</b></p>	<p>Air damped Anti-vibration table are designed to to meet requirements for all models of inverted Microscopes.          * The plate on top can either be stainless steel or stone.</p>	<p>* Standard Size : 1150mm x 720mm x 790-830mm</p>

*[Handwritten signatures and initials on the right margin]*

7.	<b>Hera Cell CO2 Incubator</b>	150 Litres 3 inner glass doors	150 liters internal Volume * TCD CO2 Sensor Soft touch control panel * Outer Door Heating Error Warning * Auto Start Function Inner Safety glass door * HEPA Filter for CO2 Inner safety glass screen ( 3 Pieces) Microprocessor PID temperature controller Temperature Sensor made up of Platinum Temperature range ambient above 5°C to 50°C ( ± 0.1°C at 37°C) Air- Jacket direct heating system * Over- Temperature Protection Smooth inner casing with rounded corners on all sides made of stainless steel Moist heating disinfect ion at 90°C *Disinfection duration 25 hrs 3 sets of shelves * Electric Suction Pump Relative Humidity 95 % Distilled water Volume 3 liters (Max) * Stackable 220V,50Hz * Connected Load 0.6 KVA
----	--	--------------------------------	--

8.	<b>Tri-gas Bench top Incubator</b>	<p>Compact, humidified TRI-gas incubator designed to maintain optimal environment for development of ova or embryos.</p> <ul style="list-style-type: none"> <li>* Has two chambers to hold eight 60mm petri dishes or twenty 30mm petri dishes or eight Falcon /Nunc Four well trays ( 32 chambers) in the two separate compartments, each with own lid.</li> <li>* The dual chambers have individual temperature control. Heating of both base and lid ensures even distribution of heat.</li> <li>* Direct contact of base with each culture dish ensures heat transfer by Conduction resulting in thermal stability.</li> <li>* Automatic gas purge on lid closure to maintain gas environment.</li> <li>* In built disposable humification system.</li> <li>* Uses pre-mix Gas &amp; Several units can be connected to one source of Supply.</li> <li>* 24 hour digital recording of MINC temperature and gas flow.</li> <li>* Time-stamped alarm notifications include description of event.</li> <li>* Graphical representation of data for rapid, comprehensive review.</li> </ul>	<p>For day 1 - day 5 Culturing  Dimensions : Width x height x depth - 405 x 195 x 385 (mm)  (Including allowance for gasline)  Weight : 12 Kg  Gas Supply : High Purity CO<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub> mixture. Nominal input pressure 150kPa.  Power : Universal Input 100-240 V AC, 50/60 Hz.  Safety : Designed to conform with AS3200.1 1990, IEC60601.1 and IEC61010.1  Two Stage Regulator for Tri Gas Cylinder</p>
9.	<b>Trinocular Stereozoom Microscope</b>		<p>Microscope body with 0.67-4.5X zoom optics, and 45 degrees inclination trinocular tube (C-mount)  Stand with ESD capability  Black and white reversible stage plate with ESD capability on black surface Eyepiece 10X with ESD capability, F.N. 22, focusable  Transmitted illumination base  Low voltage epi-illuminator</p>

*[Handwritten signatures and initials]*

			Power supply Halogen bulb Power Cord Stage glass Dust Cover
10.	<b>Sparmed Tower Air Cleaner to clean &amp; sterilize (CODA Tower)</b>	Advanced equipment designed to purify air of VOC's, CAC's, Particles, micro organisms, toxins, solvents and odour. * Consists of HEPA filter, potassium permanganate impregnated activated carbon filter and prefilter. * Colour LED on front panel to show carbon filter replacement time * 2 speed options - Full speed and half speed. * Ultra quiet - Noise level is less than 50dB (A) at full speed and less than 42 dB (A) at half speed. * Long Lasting with zero maintenance.	66 x 53 x 190 Width x Depth x Height (in cm)
11.	<b>Cryo Can with wheels</b>	For sperm, oocyte, embryo and blastocyst storage	J-12 For specimen storage - 47 Litres TA-26 For Liquid Nitrogen storage - 26 Litres
12.	<b>Liquid Nitrogen Storage Cryo-Freezers</b>	High performance modern construction and advanced insulation materials assure high thermal efficiency * New Rugged Construction - ribbed high strength aluminium body, magniformed necktube design, and more durable paint system * Easy operation lightweight snap-on cap and necktube assures tight closure and easy access, convenient larger handles. * Superior vacuum performance with super insulation provides maximum	Static Holding Time d : 109 Evaporation Rate litre : 0.23 Liquid Nitrogen Capacity : 25 Weight Em (lbs) : 23.2 (kg) : 10.5 Weight Fu (lbs) : 67.7 (kg) : 30.8 Neck Diam (in.) : 2.5 (mm.) : 64 Overall He (in.) : 25.8 (mm.) : 655 Overall Da (in.) : 15.6 (mm.) : 396 Liquid Withdrawal De : D050-8C00 Roller Base : R018-8C00 Tipping Stand P/N : D025-8C00

*[Handwritten signatures and initials on the right margin]*

		<p>holding times  * Optional equipment includes liquid withdrawal device, tipping stand, dippers and roller base</p>	Dipper P/N : R018-8C50
13.	<b>Embryology Lab - ICSI: Narishige Micromanipulator System</b>	IX73P1F manual frame with 1 port for fluorescence illuminator/magnification changer / right port, etc. 3 position light path prism (100:0/50:50/0:100) integrated. Motorised/coded Components can be attached. Light Intensity operation and mirror units indicator in front. Nosepiece is included. Binocular Tube Widefield eyepiece 10X, focusable. Mechanical right hand stage with fixed handle. Enough travelling range applied for slide glass, 35 mm dish as well as multiwell plate, circle stage inserts included. Sample holder for slide glass, 35 mm dish, multiwell plate as option. Stage stopper function is implemented for time-lapse or operation on stage. Long working distance condenser for DIC/RC observation Transmitted pillar. Front operation knob for condenser focus, focus stopper for reproduce position. Widefield eyepiece 10X. Lamp house for 100W halogen with long connection cord Cord. Halogen bulb Power Supply (200V) IX3-D6RES IX3-D6RES Coded 6 position nosepiece for DIC slider slot is available. U-NPCB L100 Cable for IX3-D6RES IX3-CAS Intermediate magnification changer placed on lower deck on IX73P1F. 3 position for 1x, 1.6x, 2x.	For Intracytoplasmic Sperm Injection in IVF Hamilton Thorne Inc. Lykos Laser System with Software to be provided along with this

*Handwritten signatures and initials on the right margin of the table.*

		<p>Polarizer for DIC and OHMC  Plan achromat objective  4x/0.1, WD 18.5  Plan achromat relief contrast  objective 10X, NA 0.25, WD  9.7  Long working distance  achromat relief contrast  objective  20X/0.4, WD 2.8  Power Cord  Light Blancing Filter  Frost Filter for IX3-ILL  Neutral Density Filter  Extention Cable Connecting U-  UCB and Halogen Lamp  C mount adapter  Direct image video port Oil  hydraulic joystic  micromanipulator set consists  of 2 each of drop handle oil  hydraulic micromanipulators,  motorised coarse positioners,  universal joint units, and an  adapter for IX3-ILL.  Microinjector with metal  syringe (SYR-11), including  glass syringe (SYR-12) and  HI-7 injection holder  Microinjector with metal  syringe, including HI-7  injection holder</p>	
--	--	---	--

*Blas*  
*Sup*  
*Pr*

## SPECIFICATIONS FOR ADVANCED ELECTRO SURGICAL UNIT with VESSEL FUSION

- ✓ An integrated system with 300W output generator and a single touch screen for Monopolar, Bi-Polar and Vessel Fusion integrated in one generator.
- ✓ The system must be micro-processor controlled which should identify the tissue type with a feedback of at least 434000 times/second on real time basis, and adjust the power to get the desired surgical effect on the tissue.
- ✓ System should have 2 monopolar output, 1 bipolar output and 1 Vessel Sealing output.
- ✓ The Monopolar output must have Cut, Blend, "Haemostasis with division (HWD)", Soft Coag, Fulgurate and Spray mode.
- ✓ The Bi-Polar must have Low, Standard and Macro mode with Auto Bi-Polar control.
- ✓ System should have separate monopolar, bipolar & Vessel Sealing foot pedal.
- ✓ The system should have one different Vessel Fusion output which should be able to seal artery, veins along with tissue bundle up to and including 7mm in diameter, and fused vessels should be able to withstand more than 3 times of normal systolic blood pressure.
- ✓ The Vessel seal system should be of minimum of 300W at a rated load of 20 ohms.
- ✓ The vessel sealing system should have simple audio visual feedback display from the generator. This should include :
  - System should have System Error Indicator
  - System should have System status indicators such as Self test, ready for use, ready for sealing/seal cycle complete, sealing in process
  - Seal cycle incomplete alert,
  - System should have usage limit indicator .
  - System should have instruments status indicator.
- ✓ The vessel sealing system should support open and laparoscopic hand instruments
- ✓ The vessel sealing hand instruments should have cutting independent of sealing.
- ✓ There should be an option of enabling or disabling the footswitches.
- ✓ Vessel sealing system should read with alarm indication even if sealing is not completed.
- ✓ Surgeon should have the facility to control the power from the sterile zone with a sliding control 3- button hand switching device.
- ✓ The system should have demo mode facility and recall facility to recall the last setting used by user.
- ✓ System should have bipolar resection with saline facility in-built in the integrated in main unit software without any interfacing cable.
- ✓ System should be compatible of REM polyhesive contact quality monitoring system.
- ✓ System should have audio-visual alarm facility, to indicate any breakage of direct contact between the patient and patient plate.
- ✓ All open surgery including head and neck and thyroid can be precisely controlled with very less thermal spread by using sealing technique.
- ✓ Integrated seal with choice of cut of 10 mm & 5 mm should be there.
- ✓ System should have 5 mm vessel sealing instrument with Blunt tip & Maryland Jaw for dissection and faster procedure.
- ✓ Both Footswitch and hand control mode should be available.
- ✓ System should be Compatible with Argon Coagulator and smoke evacuator
- ✓ Vessel sealing System should be US FDA approved.
- ✓ Vessel sealing all hand instruments should have US FDA approved.
- ✓ Argon machine should be compatible with any diathermy machine
- ✓ The system should be upgradable and should have RS232, USB, Ethernet port for on field software downloads, upgrades and serviceability.
- ✓ Monopolar and Bipolar and Vessel sealing footswitch.
- ✓ Three Button Hand switching pencils – Power Setting can be changed by the Monopolar pencil from sterile field.
- ✓ Contact quality monitoring return electrode .
- ✓ Universal adaptor-
- ✓ Open & laparoscopic 5mm seal and cut instrument with hand switch activation capability should provide with the system -
- ✓ 36mm jaw length, 180 degree rotatable instrument with curved blade





**ELECTRO SURGICAL DIATHERMY UNIT :**

	Specification
1	Instant response technology ensures that the power delivered remains virtually constant, regardless of the tissue type and should have smart tissue sensing technology which monitors changes in tissue impedance >400,000 times per second to adjust energy output accordingly.
2	Improved performance at lower power setting minimizes the risk of tissue damage and neuromuscular stimulation.
3	Three-section touch screen with enhanced ease of use, Simple controls and intuitive information displays.
4	Unit should have Advance mode for a unique combination of monopolar hemostasis and dissection while using a lower power setting resulting in less char, less thermal spread and less arcing than a traditional coagulation mode
5	Three internal microcontrollers reduce system reaction time and increase the system processing speed.
6	Spray coagulation voltage of no more than 9000 volts peak-to-peak output for board, but superficial coagulation with limited capacitive coupling.
7	Closed loop coagulation for all the monopolar and bipolar modes.
8	A power efficiency rating of approximately 98 or more for cut Performance.
9	Three cut modes, all controlled by instant response technology, offer surgeons a variety of choices. a. Low cut for delicate tissue or endoscopic cases. b. Pure cut for clean, precise cut c. Blend for cutting with homeostasis.
10	Coagulation modes: a. Desiccate for low Voltage contact coagulation suitable in endoscopic and delicate tissue work. b. High crest factor for efficient non contact coagulation in most applications. c. Low crest factor for lower voltage coagulation in requirements. d. Spray for coagulating large tissue areas with superficial depth of necrosis.
11	Three Bipolar modes: a. Different setting in bipolar are controlled by the instant response System. b. Precise, Standard, Macro setting utilize low voltage to prevent sparking.
12	Unit Should have Auto Bipolar Mode and power can be change from the sterile field by Monopolar pencil.
13	System compatible with other devices, including : a. Argon coagulation system. b. Ultrasonic surgical aspirators. c. Smoke evacuator d. Bipolar current monitor
14	Compatible with and used as the electrosurgical energy source for: a. Control RF ablation system. b. Electroblade rotary resection system c. Pacemaker lead extraction system.
15	Compatible with and the exclusive electrosurgical generator for the computer Motion herms voice command system.
16	Unit should be advanced – microcontroller based Technology
17	Unit should perform self test During Power ON.
18	Unit should have Digital Wattage Indications for Bipolar, Monopolar Cut and Coagulation.
19	Unit should have isolated Monopolar and bipolar outputs.
20	Unit should have Split Type Patient Plate contact monitoring System for Maximum Patient Safety (Unit should not be deliver power until and unless Maximum area of the patient plate is not covered to completely minimize the risk' of post operative H. F. burns)

*BLLaw*  
*[Signature]*  
*[Signature]*  
*[Signature]*

21	Unit should have Audio Visual Patient plate Error Monitoring System.
22	Unit should Have at least 3 monopolar coagulation modes.
23	Monopolar Coagulation Should consist Spray for Non-Contact Coagulation, Fulgurate for underwater coagulation, Desiccate/Force for open. Coagulation.
24	Unit should have at least Three Bipolar Mode including Precise, Standard and macro. And Auto bipolar mode
25	Unit should Have Facility to use monopolar and bipolar function without Switchover.
26	Unit should have simultaneous coagulation facility in monopolarcoagulation.
27	Unit should have HF leakage monitoring system.
28	Unit should be compactable with three button monopolar pencil which can use to adjust the power output of the machine from the sterile field.
29	Unit should have Time-out Facility to prevent accidental activation
30	There should be soft coagulation mode to do precise surgeries in soft organs like Liver
31	Unit Should Have US FDA and European CE Approved
32	<b>OUTPUT WAVEFORMS: Bipolar</b> Precise - more than 300 kHz sinusoid Standard - more than 300 kHz sinusoid Macro - more than 300 kHz sinusoid
33	<b>Monopolar Cut</b> Low - more than 300 kHz sinusoid. Similar to the Pure Cut mode except the maximum Voltage is limited to lower value. Pure - more than 300 kHz sinusoid Blend - more than 300 kHz sinusoid bursts of sinusoid, recurring at 27 kHz intervals. 50% duty cycle envelope.
34	<b>Monopolar Coag</b> Desiccate - more than 300 kHz sinusoid repeated at 39 kHz, 8% duty cycle Fulgurate - more than 300 kHz sinusoid damped sinusoidal bursts with a repetition frequency of 30 or 57 kHz into 500 ohms. Spray - more than 300 kHz sinusoid damped sinusoidal bursts with a randomized repetition centered at 28 KHz Frequencies include 21 kHz <35 kHz.
35	Output is further modulated by a random 250 Hz envelope with a variable duty cycle.
36	Output power changes by less than 15% of 5 watts, whichever is greater as the line Voltage varies from 104-132 volts and 208-264 volts (at rated load).
37	The system should have current ammeter to make sure that while using bipolar the vessel is coagulated or not.
38	Should be able to activate two monopolar coagulation buttons at same time. There should have a option to enable or disable the shared coagulation facility.
39	Should have an option to enable and disable auto bipolar as per the requirement from the surgeon
40	Unit should be USFDA & CE approved.


# Technical Specification of Hysteroscope

Sl.N.	INSTRUMENTS WITH SPECIFICATION
1	<b>OFFICE HYSTEROSCOPE TELESCOPE:</b> Forward-Oblique Office Hysteroscope Telescope 30°, enlarged view, diameter 2.9 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated
2	<b>OFFICE HYSTEROSCOPE SHEATH :</b> Hysteroscope sheath for diagnostic continuous irrigation size 4.5mm outer sheath and 3.8mm inner sheath for use with 2.9mm hysteroscope telescope
3	<b>OPERATING SHEATH:</b> size 4.3 mm, with channel for semirigid 5 Fr. Operating instruments, with 1 stopcock and 1 LUER-Lock adaptor, for use with Continuous-Flow Operating Sheath
4	<b>CONTINUOUS-FLOW OPERATING SHEATH:</b> size 5 mm, with 1 stopcock and 1 LUER-Lock adaptor, for use with Operating Sheath
3	<b>STANDARD HYSTEROSCOPE TELESCOPE:</b> Forward-Oblique Hysteroscope Telescope 30°, enlarged view, diameter 4 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated,
4	<b>EXAMINATION SHEATH :</b> Examination Sheath, diameter 5.1 mm, with 1 LUER-Lock adaptor
5	<b>EXAMINATION SHEATH :</b> Examination Sheath, diameter 5.2 mm, with 1 LUER-Lock adaptor
6	<b>CF EXAMINATION SHEATH :</b> Continuous-Flow Examination Sheath, diameter 6.2 mm, for use with Inner Sheath, with 1 LUER-Lock adaptor
7	<b>CF OPERATING SHEATH :</b> Operating Sheath, size 5.4mm, with 5 Fr. channel for operating instruments, with 1 stopcock and 1 LUER-Lock adaptor, for use as Inner
8	<b>CF OPERATING SHEATH :</b> Operating Sheath, Inner size between 4.9-5.0mm and outer size 6mm with 1 stopcock and 1 LUER-Lock adaptor, for use as Inner Sheath
9	<b>SCISSOR :</b> Scissors, blunt tips, 5 Fr., length 40 cm, single action jaws, semirigid,
10	<b>SCISSOR :</b> Scissors, pointed jaws, 5 Fr., length 40 cm, single action jaws, Semirigid
11	<b>BIOPSY &amp; GRASPING FORCEP :</b> 5 Fr., length 40 cm, double action jaws, Semirigid
	<b>PUNCH:</b> semirigid, through-cutting, single action jaws, 5 Fr., length 40 cm
	<b>BIOPSY SPOON FORCEPS :</b> semirigid, double action jaws, 5 Fr., length 40 cm
12	<b>PALPATION PROBE :</b> Compatible with abovementioned sheath
13	<b>POLYPECTOMY LOOP :</b> Compatible with abovementioned sheath
14	<b>BALL ELECTRODE :</b> Compatible with abovementioned sheath
15	<b>NEEDLE ELECTRODE :</b> unipolar, 5 Fr., length 34 cm
16	<b>BIPOLAR DISSECTION ELECTRODE:</b> semirigid, 5 Fr., length 36 cm
17	<b>UNIPOLAR CORD :</b> High Frequency Cord with 4 mm plug HF-unit,300 CM
18	<b>BIPOLAR CORD :</b> High Frequency ,300 CM
	<b>RESECTOSCOPE SHEATH:</b> including connecting tube for in- and outflow, for continuous irrigation and suction, 22 Fr., oblique beak, fixed Inner Sheath 26055 XB with ceramic insulation, for use with Working Elements
	<b>STANDARD OBTURATOR:</b> for use with Resectoscope Sheaths
	<b>WORKING ELEMENT:</b> Cutting by means of a spring. Movable thumb ring. In rest position the electrode tip is inside the sheath.
	<b>CUTTING LOOP:</b> angled, 22 Fr.,
	<b>COAGULATION ELECTRODE:</b> pointed, 22 Fr
	<b>COAGULATION ELECTRODE:</b> ball end, 22 Fr., diameter 3 mm
19	<b>DISINFECTION TRAY:</b> Disinfection/Sterlization tray with sieve tray to lift, suitable for hysteroscopic instruments
20	<b>STORAGE AUTOCLAVABLE TRAY:</b> Storage hard plastic tray with sieves suitable for all hysteroscope instruments and should be autoclavable
21	<b>IRRIGATION AND SUCTION DEVICE- ENDOMAT</b> Controlled irrigation and suction unit for operating hysteroscope and TCRE procedure to maintain intrauterine cavity pressure as desirable by surgeon. Pressure of irrigation to be maintained between 0- 200 mm of Hg. Flow to be maintained between 0 - 500 ml/min. Suction pressure to be maintained between 0-50 K Pa. Should be consisting of : Main unit with digital display, Pump head, Indicator and preset and actual value for pressure, flow, suction, with sensor attachment for reusable dome. Automatic dome detection facility. Should be supplied with the following accessories: Hysteroscope reusable tubing set (2 nos), Reusable pressure dome ( 2 Nos.), Suction bottle of 5 L ( 2 ) , suction bottle cap with stand and suction tubing set reusable 2 Nos.

The core Operating Hysteroscope like Telescopes, Controlled suction irrigation unit, hand instruments(bipolar forcep, unipolar forcep, HF needle etc.) should be from single manufacturer for system compatibility.