

Specification of Haemodialysis Machine

S.No.	Technical Specifications	Remarks
	Hemodialysis machine	
	Manufacturer	
	Brand	
	Type/Model	
	Country of Origin	
1	Hemodialysis machine must be new and shall be capable of	
1.1	Bicarbonate dialysis	
1.2	Volumetric ultrafiltration	
1.3	Profiling of UF, Sodium and Bicarbonate	
2	Display touch or alpha numeric LCD 10" or more	
3	Hemodialysis unit must have multi-color traffic light which is Integrated in the machine, monitor indicating treatment status	
4	Hemodialysis unit shall include following safety feature:-	
4.1	Self test	
4.2	Air bubble detector	
4.3	Blood leak detector	
4.4	Venous Blood Clamp	
4.5	Separate programme to monitor valve, sensor during treatment	
4.6	Blood detector during priming	
4.7	Bacterial filter which must be bypassable if needed	
5	Blood Pump	
5.1	Rate of 50-500 ml/min	
5.2	Compatible with all blood tubing available in market	
5.3	Blood flow rate must be shown in real time basis	
5.4	Readily adjustable	
6	Dialysate flow	
6.1	300 to 700 ml/min or more	
6.2	Step of 1ml/min	
6.3	Automatic adjustment of dialysate flow to the blood flow for dialysate saving	
7	Ultrafiltration	
7.1	Volumetric	
7.2	Isolated UF	
7.3	UF volume 0 to 4 L/h or more	
8	Heat exchanger availability	
9	Blood pressure monitoring	
9.1	Integrated into the machine	
9.2	Able to change UF rate and Blood flow depending upon BP	
10	Conductivity	
10.1	Range from 12.8 to 15 ms/cm	
10.2	Separate measurement of acetate and bicarbonate conductivity	
11	Separate Drain port must be available for blood tubing drain	
12	Power supply 220 to 240 v AC	

13	Battery back up 15 mins or more to support extracorporeal Blood flow during power failure	
14	Alarm	
14.1	Conductivity, Air bubble, Blood leak, UF, Power failure, water leak detect etc	
15	Disinfection	
15.1	Cold disinfection by Sodium Hypochlorite	
15.2	Hot citric rinse by Citric Acid	
15.3	Integrated both hot and cold and concentrate nozzle rinse	
16	Heparin Pump	
16.1	Syringe type 10, 20 and 30 ml	
16.2	Setting range 0.0 to 9.9 ml/h	
17	Venous and arterial pressure monitoring	
17.1	Venous Pressure Monitoring Range to -300 to + 500 mm Hg or high	
17.2	Arterial pressure monitoring range -300 to + 200 mm Hg or high	
18	Accessories	
18.1	10 Jar of 5L/jar of Hot sterilant per machine	
18.2	1/2" coupling nozzle per machine	
18.3	One set of Supply and Drain pipe per machine	
18.4	One extra set of Adult and pediatric cuff per machine to measure Blood Pressure	
19	Warranty, maintenance and training	
19.1	Two year warranty and five years AMC totaling seven years	
19.2	Spare parts price also must be quoted and pricing of spares will also be considered during price bidding	
19.3	Service & Technical manual along with staffs training	
19.4	Proper installation must be done by supplier and service center must be located in Kathmandu	
20	The HD machine should be FDA approved or European CE marked and ISO certified with No third party manufacturing allowed.	

Handwritten signatures and notes:
 1. A signature on the left side.
 2. A signature in the middle with "M" and "S" written above it.
 3. A signature on the right side with "W" and "P" written above it.
 4. A signature on the far right with "D" and "K" written above it.
 5. Some illegible handwritten notes and arrows pointing to the table rows.