

입찰번호 Bidding NO.	입찰건명 Description	단위 Unit	수량 Q'TY
2024-034	인공신장기 소모품 구매조건부 임차 - 부산	SET	38

A. Specification

▶ Type A

<Hemodialysis Machine>

1. Ultrafiltration

- 1) Type : Volumetric control
- 2) UF Rate : 0~4,000ml/h (In steps of 10ml)
- 3) Pump Volume Accuracy : $\pm 1\%$
- 4) Parameters Displayed : UF goal, UF time, UF rate, UF Volume

2. Dialysis fluid flow range

- 1) Selectable : 0~1,000ml/min (Steps of 100ml/min)
- 2) AutoFlow : Automatic adaptation of the dialysate flow to the effective blood flow (factors adjustable)
- 3) EcoFlow : Stand-by flow during preparation and reinfusion (100ml/min)

3. Dialysis fluid conductivity and temperature

- 1) Range : 12.8-15.7mS/cm
- 2) Accuracy : ± 0.1 mS/cm
- 3) temperature : 34-39°C

4. ONLINEplus

- 1) Substitution Rate : 25~600ml/min
- 2) Accuracy : $\pm 10\%$
- 3) AutoFlow : Substitution ideally matched to effective blood flow

5. BPM, BTM, BVM, OCM

- 1) BTM : temperature measurement, body temperature control, recirculation measurement
- 2) BPM : Blood pressure, plus measurement. Interval time setting
- 3) OCM : online clearance monitoring (k.t/v, plasma Na+, clearance)

6. Water supply

- 1) Water inlet pressure : 1.5-6.0 bar
- 2) Water inlet temperature : 5-30°C
- 3) Max. drain height : 1m

7. Concentrate supply

- 1) Supply pressure : 0 to 100 mbar: 1 m suction height with Central Delivery System:
0.05 to 2.0 bar

8. Electrical data

- 1) Power supply : 100 to 240V AC +/-10% 50-60Hz
- 2) Current consumption : Approx. 6A (at 230V) at a water inlet temperature of 17°C

9. Emergency battery: 20-30minutes

10. Arterial pressure monitoring

- 1) Display range : -300mmHg to +300mmHg
- 2) Accuracy : +/-7mmHg
- 3) Resolution : 5mmHg

11. Venous pressure monitoring

- 1) Display range : -100mmHg to +500mmHg
- 2) Accuracy : +/- 7mmHg
- 3) Resolution : 5mmHg

12. Arterial blood pump

- 1) Blood flow range:30 to 600ml/min
- 2) Accuracy: +/-10%
- 3) Resolution: 10ml/min

13. Dimensions 5008S: 1680*350*780mm (H*W*D)

14. Disinfection and cleaning programs

- 1) Rinse temperature/flow: 37°C/600ml/min - 800ml/min (adjustable)
- 2) Hot rinse and hot disinfection diastal / citrosteril: temperature/flow: 85°C/600-800ml/min (adjustable)

15. Weight: 114kg

<Reverse Osmosis System 1>

1. Output water

- 1) Pure water Outlet Pressure : 0~2 Bar more
- 2) Pure Water Outlet Capacity : 20L/min (+5°C)
- 3) Remove rate of dissolved salts : 95% or more
- 4) Remove rate of molecules salts : 99% or more
- 5) Remove rate of molecules (200 Dalton over) : 99% or more
- 6) Remove rate of molecules (cfu) & Endotoxins : 99% or more
- 7) Water Conversion Factor : Max 75% or more

2. Supply water demands

- 1) Input Capacity : min. 35L more
- 2) Input Pressure : 2 to 5 bar

- 3) Temperature : 5-25°C
 - 4) Hardness : 1 dH or less
 - 5) Iron : 0.1mg/L or less
 - 6) manganese : 0.1mg/L or less
 - 7) Chloride : 100mg/L or less
 - 8) Silica : 25mg/L or less
 - 9) Total dissolved salts : 1500mg/L or less
 - 10) Chlorine : 0.1mg/L or less
 - 11) Fouling index (S.D.I) : 5 or less
3. Drain Requirements : 15L/min or more
4. Connections
- 1) Inlet : UPVC female union, fits to pipe OD 25mm
 - 2) Drain : UPVC female union, fits to pipe OD 25mm
 - 3) Pure Water outlet & return : PEX or SUS female union, fits to pipe OD 20mm
5. Membranes
- 1) Membrane material : Modified polyamide, thin film composite
 - 2) Membrane configuration : Spiral wound
 - 3) PH-tolerance : 2-11
 - 4) length & Quantity : 10cm X 100cm, 6EA
6. Power Supply
- 1) Main voltage : 3Ø4W 380V, 60Hz, Earth
 - 2) Power Rating : 7.0kW
7. Display information
- 1) Easy touch screen
 - 2) Conductivity of the pure water are Digital displayed (us/cm)
 - 3) Reject flow rate to drain, Recycle water are Analogue displayed (L/min)
 - 4) Pure water are Digital displayed (L/min)
 - 5) Auto flushing time is setting displayed
 - 6) Water saving function
 - 7) Patrol Lamp
 - 8) Alarm & Stop S/W Function
8. High Pressure pump
- 1) Type : Multi-Stage centri Fugal Vertical Pump
 - 2) Overload Protection
 - 3) Supply Power : 380V, 3-phase(4 wires)
9. Automatic Start & stop by Level or Timer
10. Dimensions & Weigh
- 1) Dimensions (H X W X D) : W1,120 X D1,200 X H1,900mm

- 2) Weigh : 450kg
- 11. Pre Treatment system
 - 1) Uninterruptable power supply system : max. 48h
- 12. Line type & Tank Type U.V Lamp : 39W 2Set
- 13. Final Filter : 50,000 ~ 100,000 Dalton (0.05 ~ 0.1um/cm²)
- 14. Multi media Filter
 - 1) Volume : 150L or more
- 15. Softener
 - 1) Volume : 150L or more
- 16. Carbon Filter
 - 1) Volume : 150L or more
- 17. Feed Pump
- 18. Filter housing
- 19. pyrogen & Endotoxin Free Type Membrane Cartridge
- 20. Accessories

<Reverse Osmosis System 2>

- 1. Output water
 - 1) Pure water Outlet Pressure : 0~2 Bar more
 - 2) Pure Water Outlet Capacity : 24L/min (+5°C)
 - 3) Remove rate of dissolved salts : 95% or more
 - 4) Remove rate of molecules salts : 99% or more
 - 5) Remove rate of molecules (200 Dalton over) : 99% or more
 - 6) Remove rate of molecules (cfu) & Endotoxins : 99% or more
 - 7) Water Conversion Factor : Max 75% or more
- 2. Supply water demands
 - 1) Input Capacity : min. 35L more
 - 2) Input Pressure : 2 to 5 bar
 - 3) Temperature : 5-25°C
 - 4) Hardness : 1 dH or less
 - 5) Iron : 0.1mg/L or less
 - 6) manganese : 0.1mg/L or less
 - 7) Chloride : 100mg/L or less
 - 8) Silica : 25mg/L or less
 - 9) Total dissolved salts : 1500mg/L or less
 - 10) Chlorine : 0.1mg/L or less
 - 11) Fouling index (S.D.I) : 5 or less
- 3. Drain Requirements : 15L/min or more

4. Connections

- 1) Inlet : UPVC female union, fits to pipe OD 25mm
- 2) Drain : UPVC female union, fits to pipe OD 25mm
- 3) Pure Water outlet & return : PEX or SUS female union, fits to pipe OD 20mm

5. Membranes

- 1) Membrane material : Modified polyamide, thin film composite
- 2) Membrane configuration : Spiral wound
- 3) PH-tolerance : 2-11
- 4) length & Quantity : 10cm X 100cm, 7EA

6. Power Supply

- 1) Main voltage : 3Ø4W 380V, 60Hz, Earth
- 2) Power Rating : 7.0kW + Heating unit 12.0kW

7. Display information

- 1) Easy touch screen
- 2) Conductivity of the pure water are Digital displayed (us/cm)
- 3) Reject flow rate to drain, Recycle water are Analogue displayed (L/min)
- 4) Pure water are Digital displayed (L/min)
- 5) Auto flushing time is setting displayed
- 6) Water saving function
- 7) Patrol Lamp
- 8) Alarm & Stop S/W Function

8. High Pressure pump

- 1) Type : Multi-Stage centri Fugal Vertical Pump
- 2) Overload Protection
- 3) Supply Power : 380V, 3-phase(3 wires)

9. Auto disinfection (hot water 60°C-90°C) by Temp, Controller

10. Automatic Start & stop by Level or Timer

11. Dimensions & Weigh

- 1) Dimensions (H X W X D) : W1,120 X D1,200 X H1,900mm
- 2) Weigh : 450kg

12. Pre Treatment system

- 1) Uninterruptable Power Supply System : Max. 48h

13. Line type & Tank Type U.V Lamp : 39W

14. Final Filter : 50,000 ~ 100,000 Dalton (0.05 ~ 0.1um/cm²)

15. Multi media Filter

- 1) Volume : 150L or more

16. Softener

- 1) Volume : 150L or more

17. Carbon Filter
 - 1) Volume : 150L or more
18. Feed Pump
19. Filter housing
20. pyrogen & Endotoxin Free Type Membrane Cartridge
21. Accessories

► **Type B**

<Hemodialysis Machine>

1. Dimensions and Weight
 - 1) Width : 660 mm
 - 2) Depth : 700 mm
 - 3) Height : 1550 mm (without IV pole)
 - 4) Weight : < 135 kg
2. Electric
 - 1) Voltage : 230/240 VAC ($\pm 10\%$) or 115VAC ($*\pm 10\%$)
 - 2) Frequency : 50/60 Hz ($\pm 5\text{Hz}$)
 - 3) Battery backup : up to 15 min
3. Water Supply
 - 1) Must comply with local standards and ISO13959 standard
 - 2) Inlet pressure : 150 to 800 kPa (1.5 to 8 bar)
 - 3) Inlet temperature : +5 to +32°C (230V) or +10 to +32°C (115V)
4. Blood flow control
 - 1) Actual blood flow rate HD DN : 10 to 500 mL/min
 - 2) Blood pressure supervision
 - (1) Arterial : -300 to +150 mmHg
 - (2) Venous : +10 to +400 mmHg
 - (3) SNDP : +40 to 450 mmHg
 - 3) Blood Leak detection : Infrared Light
 - 4) Relative blood volume : -40% to +10%
 - 5) Air detection : Ultrasonic air bubble detector
 - 6) Heparin administration : 1.5 to 10 ml/h infusion rates
5. Dialysis fluid preparation
 - 1) Temperature : +34.0 to +39.5°C
 - 2) Flow rate (HD treatment) : 300-800 mL/min (by step of 50 mL/min)
 - 3) Sodium range : 130 to 160 mmol/L
 - 4) Bicarbonate range : 24 to 38 mmol/L
 - 5) pH (optional) : 1.0 to 13.0 pH units

6) Substitution fluid (on-line HDF/HF) : 1.2 to 27 L/h (maximum 150 L)

6. Fluid removal by ultrafiltration

1) UF volume : 0 to 24 L, in steps of 0.05L ($\pm 2.5\%$ or ± 50 ml/h of the value)

2) UF rate : 0 to 3 L/h

7. Hygiene

1) Heat, and chemical disinfection

2) Integrated heat mode with Baxter CWP

3) Heat with cartridge (disinfection + deproteneization or decalcification)

4) Chemical Stand-by mode

5) Weekly disinfection program with auto-On/Off

6) Disinfection process history

7) Ultrafilter management

<Reverse Osmosis System 1,2>

1. Pure water

1) Output: capacity in liters/minute at a pure water outlet pressure of 200kPa, Central RO:
23 l/min at +5°C

2) Quality: Depends on inlet water quality

3) If potable water is used, the following rejection rates will be obtained

(1) Total dissolved salts: >95%

(2) Molecular : >200 Dalton

(3) Bacteria (CFU) & endotoxins: >99%

(4) Water Conversion factor : Max. 75%

2. Water Supply

1) Min input: 60 l/min or more

2) Pressure: 250 to 500 kPa

3) Temperature: +5°C to +25°C

4) Quality: Potable water should be used. Additional pretreatment is normally necessary

Membrane and machine life expectancy may be reduced if the system is

Operated outside the limits stated bellow

5) Hardness: <1dH

6) Iron: <0.1 mg/l

7) Manganese: <0.1 mg/l

8) Chloride: <100mg/l

9) Silica: <25 mg/l

10) Total dissolved salts: <1500 mg/l

11) Chlorine: <0.1 mg/l

12) Fouling index (S.D.I): <5

3. Drain Requirements: 60 l/min

4. Connections

- 1) Inlet : PVC Female union, fits to pipe OD 25mm
- 2) Drain : PVC female union, fits to pipe OD 32mm
- 4) Pure water outlet & return : PVC female union, fits to pipe OD 25mm

5. Membranes

- 1) Membrane material: modified polyamide, thin film composite
- 2) Membrane configuration: spiral wound
- 3) PH-tolerance: 2- 11
- 4) Length & Quantity: 170Cm & 4

6. Power Supply

- 1) Main voltage: 380V, 60Hz
- 2) Power rating: 2.5KW + Heating unit 9.0KW
- 3) Fuse: 32 AT (slow blow)

7. Display information

- 1) Conductivity of the raw water , pure water & return water are displayed (us/cm)
- 2) Reject flow rate to drain, Pure water , Inlet water & return water are displayed (l/min)
- 3) Total elapsed time in operation of the main pump
- 4) Auto flushing time is displayed
- 5) Water saving function
- 6) Time channel function
- 7) Alarm list is displayed

8. High pressure pump

- 1) Water, not containing explosive substances, solid particles or fibers
- 2) The liquid must not attack the pump materials chemically
- 3) 380V, 3-phase (five wires)
- 4) Under water pump

9. Noise Level

- 1) 0 < Approx. 62dB(A)

10. Disinfection

- 1) Auto disinfection (hot water 60°C to 90°C) by time Channels

11. Finish of timer

- 1) Automatic start & stop by time Channels

12. Dimensions & Weigh

- 1) Dimensions : Height 2010 mm / Width 2100 mm / Depth 670 mm
- 2) Weight
 - (1) Unit : 525 kg
 - (2) Operation : 1005kg

B. Consist of

▶Type A

1. Main Unit	38	SET
2. RO System (Include accessory)	2	SYS
3. Operation & Service Manual	38	SET

▶Type B

1. Main Unit	38	SET
2. RO System (Incl. Accessory)	2	SYS
3. Operation & Service Manual	38	SET

Remarks

1. 무상하자보증기간은 정상가동확인완료일로부터 임차종료일까지로 한다.
(모든 부품 포함 조건)
2. 해당병원 Interface 연결에 필요한 EMR, PACS 연동 시 모든 비용은 업체에서 부담한다.
(추후 새로운 EMR/PACS 도입 시, 재연동 등에 필요한 모든 비용 또한 포함한다.)
3. 기술 및 사용부서에서 서비스 요청 시 4시간 이내 정상가동이 가능하도록 지원하며,
불가능할 경우 대체장비를 지원하는 등 정상운용이 가능하도록 지원한다.
4. 조립설치 후 Packing Box 및 발생 잔여물은 납품회사 책임 하에 회수 조치한다.
5. 제조일자는 3개월 이내인 제품을 납품하는 것을 원칙으로 한다.
6. 장비설치 후 임차기간 내에 수리가 불가한 치명적인 결함이 2회 이상 반복되면 동급
이상의 신제품으로 1개월 이내 즉시 교체해야 한다.
7. 장비 설치 및 가동에 필요한 시설관련 사항
 - 1) 장비계약업체는 시설공사 필요 시 계약 전에 장비 설치 및 가동에 필요한 시설에 관한
시방서(공사범위 및 시공주체 등을 상세히 기술함)를 병원 시설부/의공실과 협의 후
작성하여 제출해야 하며 설치 전 그 사항을 반드시 확인하여 설치에 이상 없도록 한다.
 - 2) 장비 반입에 따른 병원의 모든 시설물에 대한 상태 변경 발생 시 장비계약업체는 병원
시설물을 원상태로 책임 시공하여 복원해야 한다.
8. 설치 후 하자보증기간 내 격월 장비 점검 및 Calibration을 실시한다.