

APEMA

DIVISION HEMODIALYSIS

AP10RO

DIALYSIS PORTABLE UNIT
(Water Treatment Included)

IDEAL FOR ICU, RESIDENTIAL DIALYSIS
AND EMERGENCIES

DOMESTIC WATER SUPPLY - CONNECTED
RATE: 1.5 L/MIN NO ADDITIONAL
PRESSURE REQUIRED

IT INCLUDES INVERSE OSMOSIS AND
PRETREATMENT WITH DISPOSABLE
CARTRIDGES

46 X 60 CM SURFACE REQUIRED
CONCENTRATE LARGE CANS INCLUDED

SUPPLIED WITH REVOLVING WHEELS FOR
ENABLING DISPLACEMENT

VARIABLE BICARBONATE AND SODIUM
AUTOMATIC SUPPLY THROUGHOUT
DIALYSIS

KG/HOUR AND KG/TOTAL SINGLE-STEP
DIGITAL MEASUREMENT-BASED
ULTRAFILTRATION MODULE WITHOUT ANY
WEARING-OUT PIECES

OPERATOR ERROR-PROTECTED
AUTOMATIC DISINFECTION, DESCALING
AND RINSING

IT OPERATES WITH VERY HIGH
PERMEABLE FILTERS (TRIACETATE)

SIMPLER MAINTENANCE, LOWEST COST
AT MARKET.

IT MEETS IEC 6001-2-16 STANDARD
REQUIREMENT



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Upon designing its new **AP10Ro** units **APEMA** has finally solved the problems connected with ICU and residential dialysis. These units are also applicable to other cases where neither water treatment nor places for big-sized models are available. By utilizing international inverse osmosis-based newest technology on hand and its own designed pumps, APEMA has developed a fully mute unit including water treatment for haemodialysis purpose to be used at ICU facilities but without increasing standard dialysis unit surface area.

WATER TREATMENT

Built-in inverse osmosis unit may produce up to 60 Liters/hour of water for haemodialysis with a saline rejection of 99%. This unit may be fed with running domestic water supply as from any faucet with no additional pressure. The only requirement lies that it must supply 90 L/hour. Built-in pre-treatment system is composed of 2 low-cost disposable block-activated cartridges for sediments and carbon (duration rate: 10.000liters of water)

Unit pump itself sucks in both sterilizer and descaler that treatment operation requires.

SUPPLY

These units prepare the solution with bicarbonate or acetate automatically. The concentrations of bicarbonate (ranging between 20 and 40 milliequivalents per liter) and sodium total (ranging between 130 and 160 milliequivalents per liter) are programmed independently and may be adjusted during dialysis. A highlighted advantage of this equipment is that it can be used with powdered bicarbonate without any problems. Said powder may be dissolved in a large can. It must be also noted that proportioner will exactly take the amount of bicarbonate as required for the programmed level notwithstanding large can's concentration. Thus, dissolution errors will not affect dialysis. This does not occur in units volumetrically providing a fixed ratio (1/35, 1/40 or 1/45). A dissolution error dissolution error will bypass the unit. The chance of using powdered bicarbonate leads to cost reduction. Proportioner has a duplicate security system. It also includes 2 conductometers for bicarbonate solution and another 2 for acid solution in such a way that one of them operates regulating and the other operates controlling. System accuracy exceeds 1% of programmed values.

ULTRAFILTRATION MODULE

Ultrafiltration control system determines UF rate ranging between 0.01 and 2.50 kg/h, with an accuracy of 2%, as well as removed total weight of 0.01 to 9.99 kg. Measurement method is based on exactly weighing an ultrafiltered sample through an electronically monitored system. This is achieved by means of a very simple single-step hydraulic system thus avoiding complicated mechanical methods often used by other devices, such as volumetric ones, having valves cycling once per second resulting in wear-out and maintenance needs. As this product contains a single-step hydraulic circuit, both disinfection and rinsing are remarkably enabled as compared to volumetric equipments alternating two closed systems. This unit performs an automatic cleaning cycle, descaling, sterilizing and rinsing throughout a 30-min. period. The equipment includes safety locking device to prevent operator error. Disinfection cycle will not start if patient's lines are connected or if big can-connected hoses have not been removed for cleaning purposes. Moreover, feeding shortage-caused uncompleted disinfection will be alarm-warned.

CENTRALIZED CONTROL BOARD

APEMA utilizes updated electronic technology intended to monitor and display all parameters that must be taken into account throughout dialysis under International Electrotechnical Commission (IEC) 6001-2-16 safety standards (Medical Electric Equipment - Particular Requirements for Safety of Haemodialysis). Alarms are clearly identified. If temporary cancellations occur, they are also recorded. Main function soft-touch pushbuttons are timed to avoid operation mistakes caused by pushing the wrong location. Ultrafiltration measurements, transmembrane pressure, temperature, blood flow are digitally displayed. Both visual and blood pressure are displayed in bars for enabling their image.

BUBBLE ALARMS AND BLOOD LOSS

Air-in-blood warning alarm operates by means of an ultrasound detector finding bubbles and foam in burette. Sensor has been designed in such away that may be suited to the several lines currently existing at market according to user convenience. Thus, sensitivity is easily adjustable to prevent false alarms but without affecting safety. When the alarm turns on, blood pumping stops and venous line is clamped. If blood flow is not replaced in 60 seconds, the system lowers transmembrane pressure to 0 for abolishing ultrafiltration. Blood loss alarm has a photoelectric sensor that can detect a portion of blood in 10000 of dialysis solution (adjustable from 1 to 10). When operated, this alarm proves to have the same action as that of air-in-blood detector. Dialyzer flow is adjustable and measured with an accurate flowmeter supplied with an low flow alarm. A degasifier operating with a special vacuum-making pump and air separator cartridges is included.

BLOOD PUMPS

Pump head has 2 auto-adjustable rollers for compensating tube variations. It is easily removed for cleaning. Control circuit maintains a steady speed within the 1% of the programmed value.

HOW BUILT

Pump head has 2 auto-adjustable rollers for compensating tube variations. It is easily removed for cleaning. Control circuit keeps speed steady within 1% of programmed value.

DIMENSIONS

Width: 46 cm ; Depth: 32 cm ; Height: 136 cm ; Base (w/ large can): 55 x 48 cm.