



Aqua-Cleer

S.D.S.



Single Dialysis System

EQUIPMENT FOR HOSPITAL AND PHARMACEUTICAL WATER
MEDICAL DEVICE - CERTIFYING BODY 0373



Technical Sheet

GENERAL INFORMATION

In many hospital and pharmaceutical applications limited volumes of treated water are required with extremely high levels of purity (organic and inorganic). The possibility of purifying water in a single operation is a unique feature of Inverse Osmosis which allows 90-95% salt removal (depending on the nature of the salts). Moreover, the osmotic membranes reject bacteria, viruses and pyrogens, preventing them from passing into the water produced. This continuous physical process does not involve the use of the regenerating agents.

However, these requirements must also be reconciled with four all-important aspects:

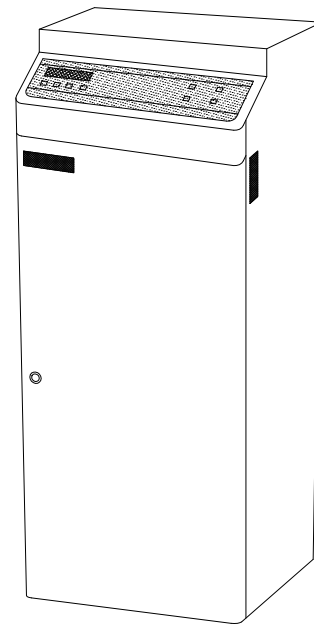
- Automatic control mechanisms
- Simplified management
- Limited size
- Contained costs

The S.D.S. fully meets these requirements, also providing also some highly interesting functional solutions, especially in relation to home or emergency dialysis.

DESCRIPTION OF THE SYSTEM

The SDS is produced in a compact size, housed in a cabinet and fitted with an innovative onboard "Touch Control" electronic control panel (24V). Fully insulated, it uses a high-efficiency quiet motor. It consists primarily of an inverse osmosis process which is preceded by filtering and dechlorination pre-treatments.

The presence of the break tank brings the device into line with the strictest European standards in this field.



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M002-56 - Rev 00 - 05/2001

The main elements in the hydraulic system are made from stainless steel. High quality recirculation when the device is switched on and off optimizes the characteristics of the permeate. The simple and automatic disinfection process not only allows the hydraulic system components to be sanitized but also an adequate cleaning of the osmotic membrane. The quality of the water produced is indicated by a precision conductivity meter; a programmable timer signals when the prefiltering cartridge should be replaced.

Quality System Certified according to UNI EN ISO 9001:2000 Norm

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OPERATING LIMITS AND TECHNICAL SPECIFICATIONS

The SDS is designed to produce exceptionally pure water; it must therefore be fed with water having characteristics as least suitable for use as drinking water.

Feed water characteristics

(Acceptable values)

- T.D.S.	: ≤ 1500 ppm
- Temporary hardness	: ≤ 35°F
- S.D.I.	: ≤ 3
- pH	: 7 ± 1
- Chlorine	: ≤ 0.2 ppm
- Iron	: ≤ 0.1 ppm
- Manganese	: ≤ 0.05 ppm
- Recommended temperature	: 10÷30°C
Temperature range	: 2÷35°C
- Feed pressure	: min. 1 bar max. 5 bar
Feed flow rate	: ≥ 300 l/h

Purified water characteristics

- Flow rate	: 80/100 l/h
- Salt removal	: ~ 96%
- Removal organic matter with molecular weight ≥ 200	: ~100 %
- Removal of bacteria and pyrogens	: ~99%

N.B.: flow rate depends on a variety of parameters: operating temperature and pressure are the main ones. At 20°C and with an active pressure of about 12 bar, the flow rates shown are obtained. Make sure that the recovery ratio does not lead to exceeding the solubility limit for the individual salts (it is advisable not to exceed a 50% recovery ratio).

MATERIALS

- a) **Composite cartridge pre-filtration:** able to remove undissolved impurities such as sand, turbidity, oxidized iron, etc. with a filtration level of 5 µm. The activated carbon present in the filter reduces the chlorine levels in the water, and likewise for pesticides, THM, micro contaminants etc.
- b) **Break Tank:** made from PE, it comes

complete with air filter and contains 10 litres of pre-treated water; it is controlled by an electronic level monitoring device.

- c) **High pressure pump:** the high pressure pump in the RO system can supply 300 l/h with an ΔPressure of 14 bar. It is made from stainless steel and fitted with an overpressure by-pass.
- d) **Osmotic Unit:** can remove 96% of salts, 100% of substances with molecular weight above 200, and 99% of bacteria and pyrogens. The membrane, housed in a stainless steel vessel, has an estimated average life of 24 months under normal working conditions.
- e) **Control devices:** feed water and pressurised water pressure gauges - flow meters for purified and waste water. Adjustment valve and automatic permeate recirculation.
- f) **Electronic control panel:** the programmable electronic control unit, fitted with backlit display, receives and gives all information and alarm data (both acoustic and visual). Other data useful to correct operation of the equipment can also be read, such as:
- product conductivity
 - calibration of conductivity alarm with pre-alarm set automatically
 - signalling, programmable, filter change
 - automatic start on stand-by from 1 to 99 hours
 - automatic sanitization cycle indicating operative times.

OVERALL DIMENSIONS

- Width	: 375 mm
- Depth	: 365 mm
- Total height	: 900 mm
- Shipping weight	: 50 kg

ELECTRICAL CONNECTIONS

- Power Supply	: 230 V-50 Hz
- Plug	: 16 A
- Absorption	: ~300 Watt

N.B.: use a power outlet fitted with high-sensitivity residual current circuit breaker to supply the machine (for safety and regulations purposes).