RUBBERPLATE PARALLEL FLOW DIALYSER (TWISS-SOMERS)

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This dialyser was developed in 1960 at the same time as the Kiil dialyser. Its clinical use dates from 1964, since at first leaks were troublesome. The one-clamp assembly now offers a good protection against leaks and an even pressure on the whole surface of the mats (Fig. 1). By heavier compression the normal volume of 200 ml of blood (four units with surface area of 1 square metre) can be further reduced. The apparatus is compact and handy and therefore very practical in small dialysis rooms.

Fig. 1. One clamp assembly.
Four layer rubberplate parallel flow dialyser (Twiss-Somers). Volume 200 ml tubing included.
Low resistance to flow. Surface area 1 square metre.

There are two special applications:
1. Charcoal dialyser

The bath fluid can be regenerated by re-circulating it to a tank containing activated charcoal. 2–4 kg of charcoal are added to a bath of 25–50 litres (Fig. 2). A small apparatus results, very suitable for bedside-dialysis in any ward of the hospital or for home-dialysis.

2. One cannula haemodialysis

One cannula haemodialysis in children can be performed with a pumpless system, using the hydrostatic pressure of the bath fluid as driving force and the dialyser as pump chamber; 2 valves in the blood-lines regulate the to and fro movement in the cannula.

Dialyser

- Bath fluid sucked by pump into 25 litre reservoir
- Side tube to remove air bells from the pump tubing
- Tubing with filter to suck bath fluid from the reservoir into the dialyser

Pump

- 25 litre reservoir filled with bath fluid and 2–4 kg of activated charcoal
- The bath fluid is circulated and regenerated in the reservoir

Fig. 2. Charcoal dialyser.
Compact unit with small volume of bath fluid.