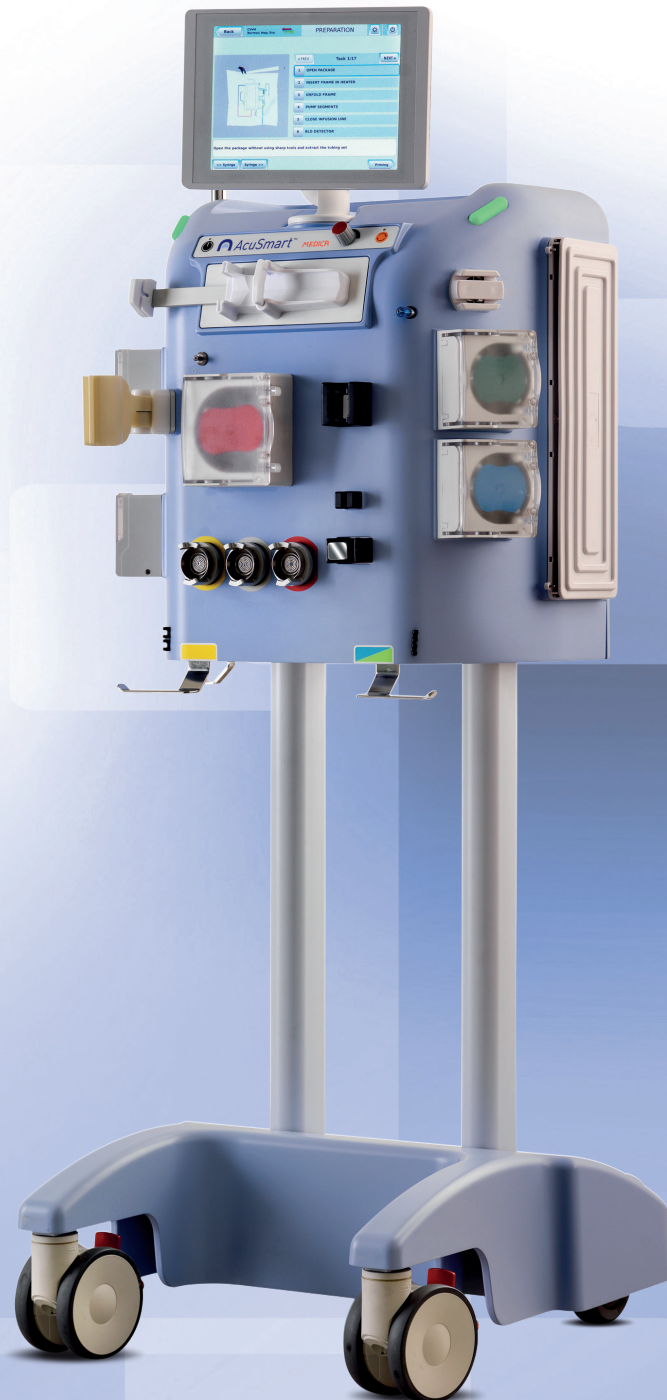
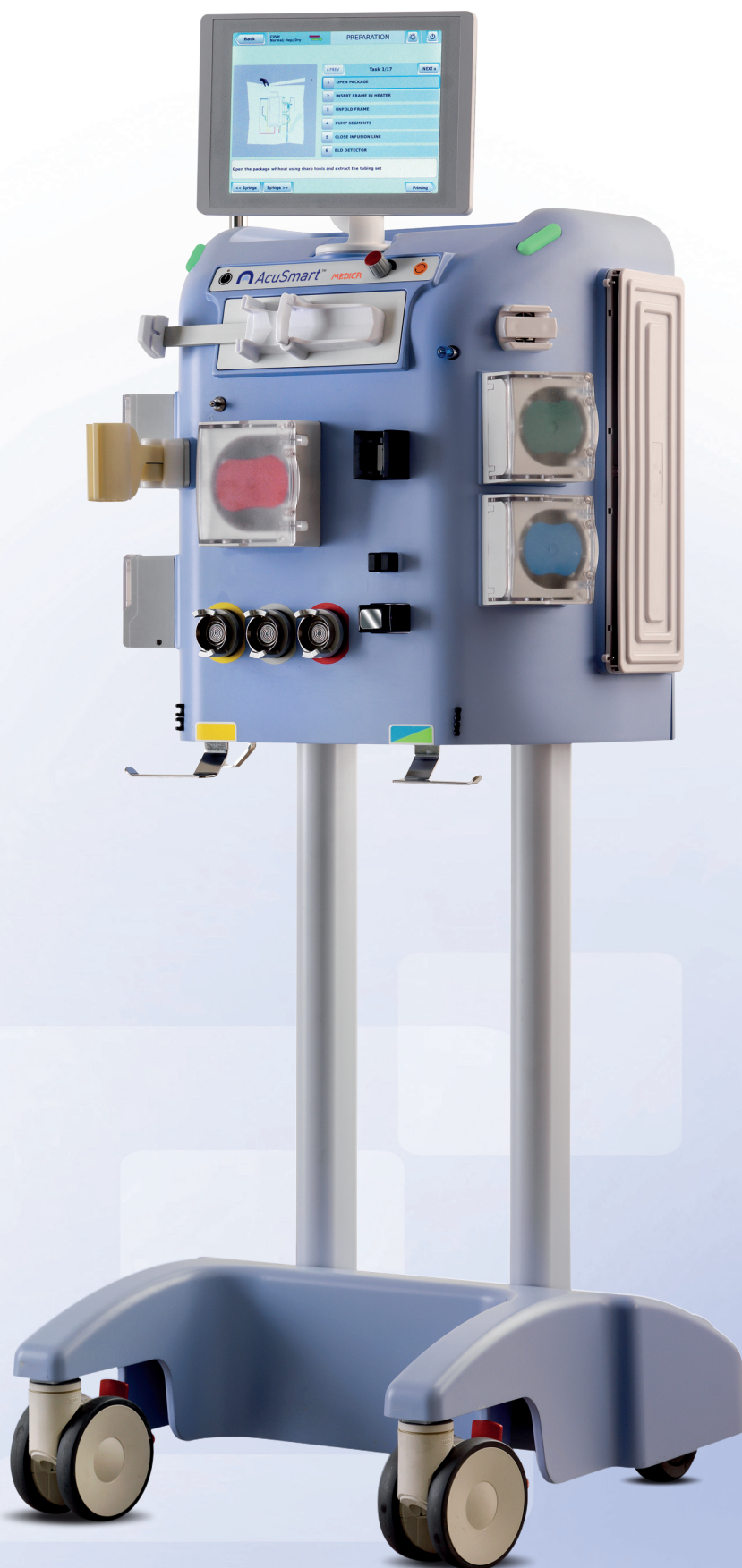


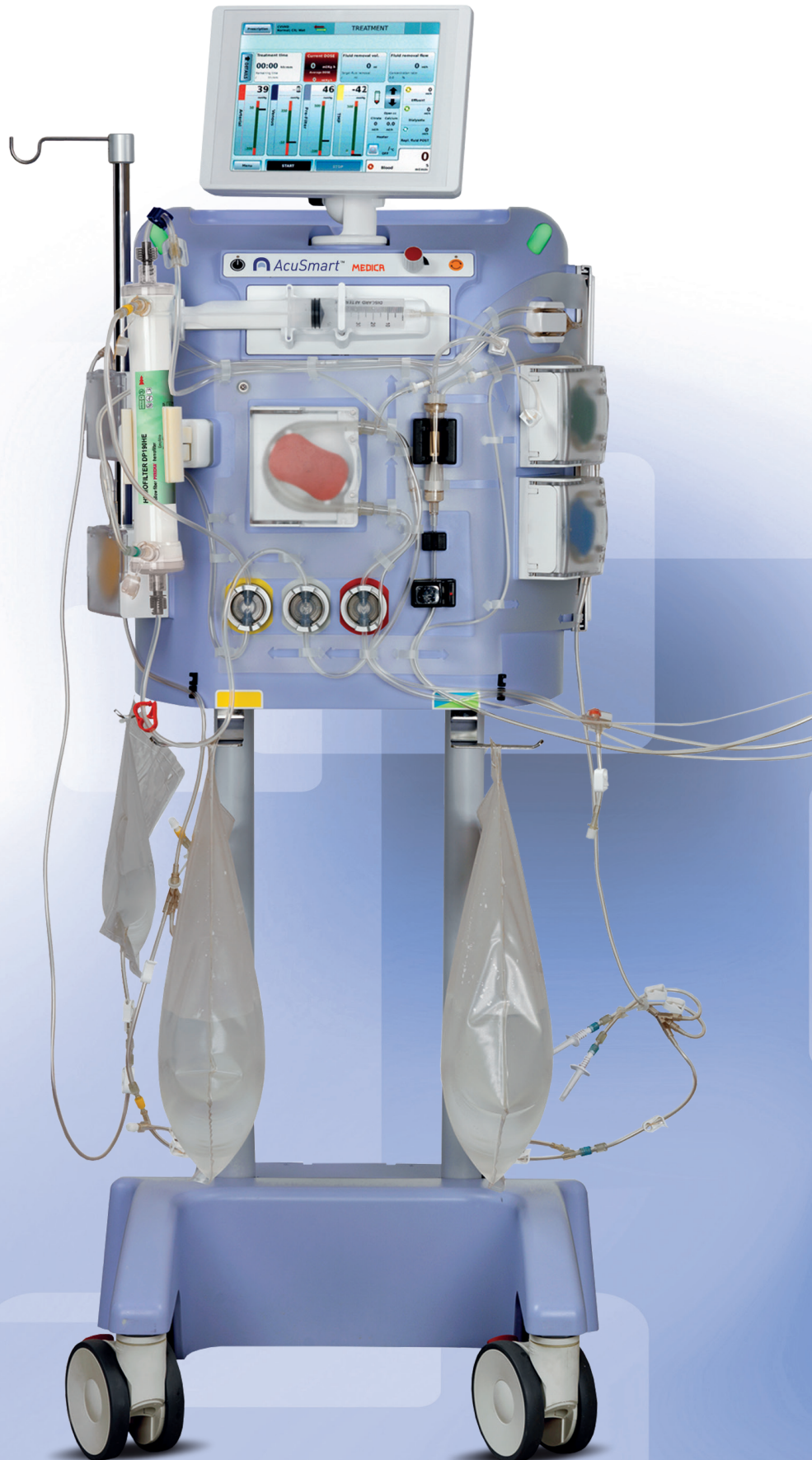
System for CRRT

*AcuSmart*TM



MEDICA





Kit Assembly

Enhanced Simplicity

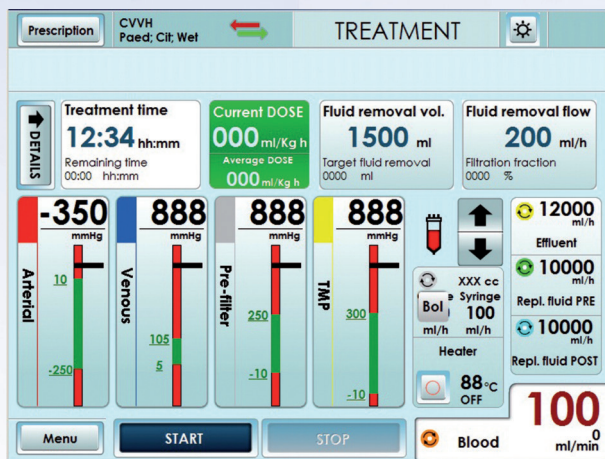
User friendly interface

Flexible

AcuSmart™ touch screen can be turned 180 degrees with up to 100 degrees of tilt in order to ensure visibility from various angles at the patient's bedside.

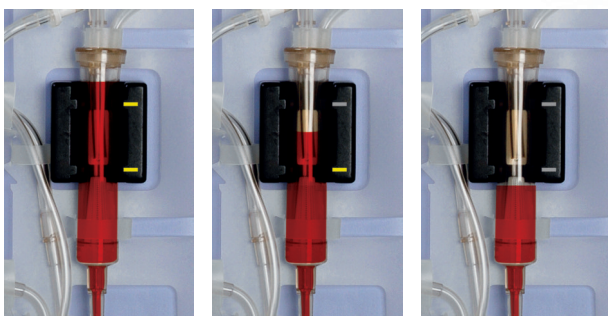
User interface

The screen design focuses on the most important parameters with distinct color coding, providing clear information at a glance.



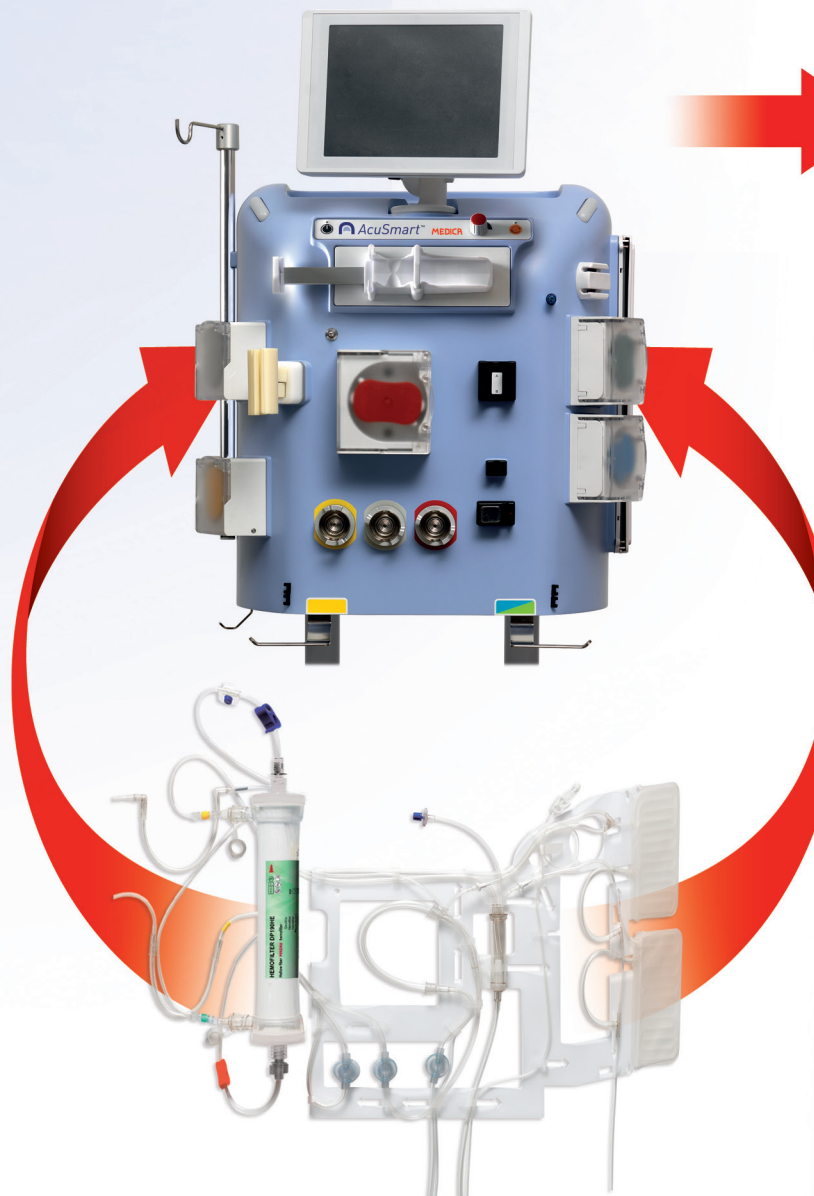
Automatic venous chamber adjustment

Venous chamber fluid level changes lead to frequent manual adjustment of the fluid level. AcuSmart™ is equipped with an automatic adjustment function of the venous chamber which avoids time-consuming manual adjustments and venous chamber related treatment interruptions.

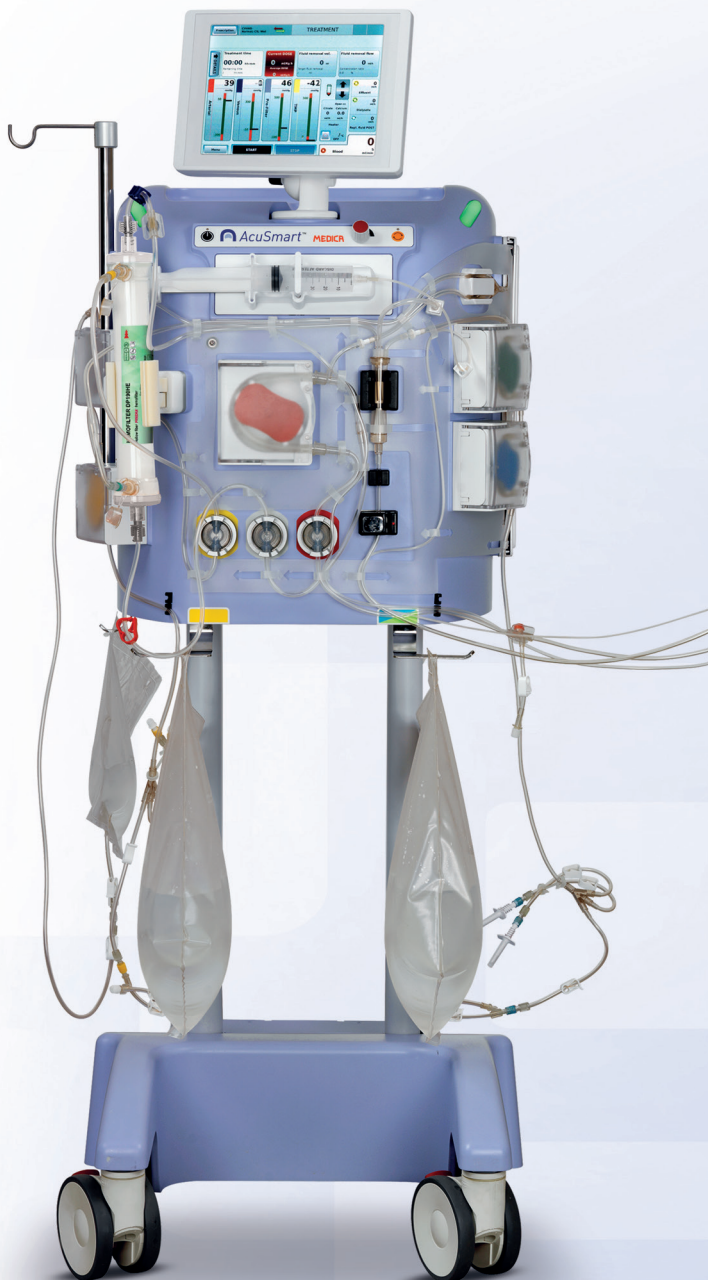


OPERATIONAL BENEFITS

A reliable and efficient device is essential for the demands of a modern Intensive Care Unit in supporting both doctors and nurses to provide the best possible care of the patient.



AcuSmart™ has been developed together with Key Opinion Leaders from the CRRT speciality field in order to facilitate their daily tasks and to minimize their workload.



Less trouble shooting

Smart bag alarm

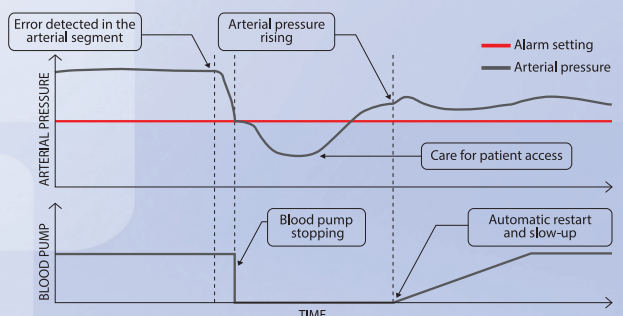
AcuSmart™ only alarms if the fluid bags move for more than 5 seconds. Alarms caused by checking the fluid bags or movement of AcuSmart™ are therefore minimised and user interventions are reduced.

Long maintenance intervals

15 Litres of fresh fluids can be connected to AcuSmart™ which allow, for longer intervals between bag changes: With an average flow rate of 1.5 l/hr AcuSmart™ can run for 10 hours without a bag change.

Automatic blood flow rate control

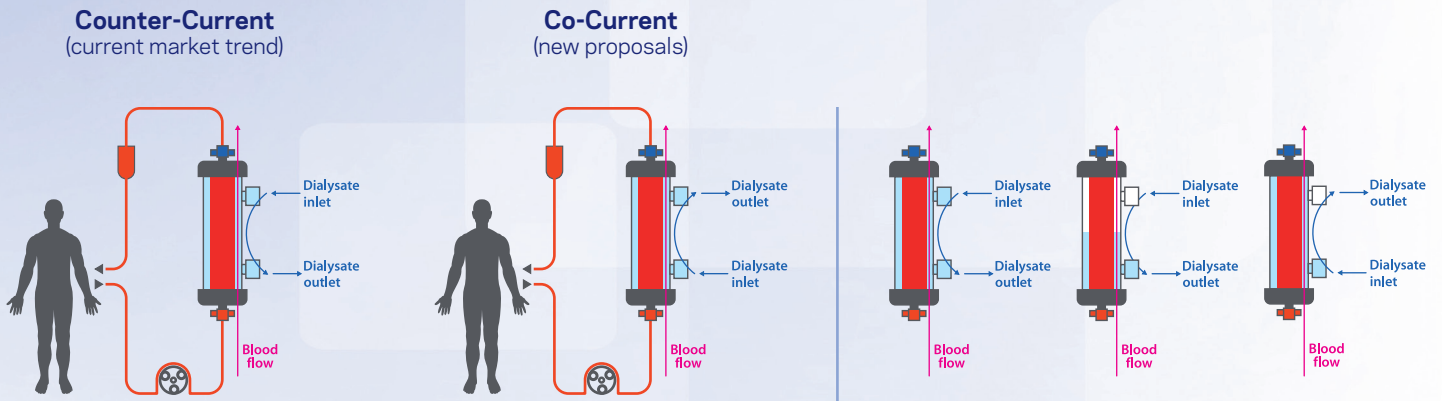
AcuSmart™ automatically adapts the blood flow rate to the arterial pressure. This ensures an accurate blood pump flow rate for the duration of the treatment.



Clinical Options

Choice of co-current/countercurrent

AcuSmart™ gives you the choice and flexibility to decide between the conventional countercurrent flow and a unique co-current flow option. This provides an improved priming efficiency by releasing air bubbles automatically in flow direction.

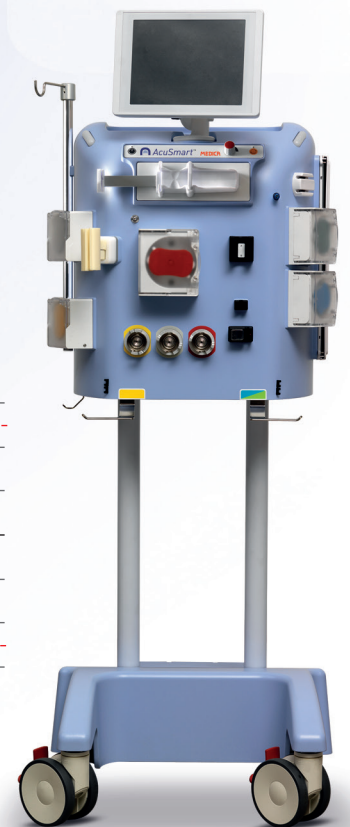
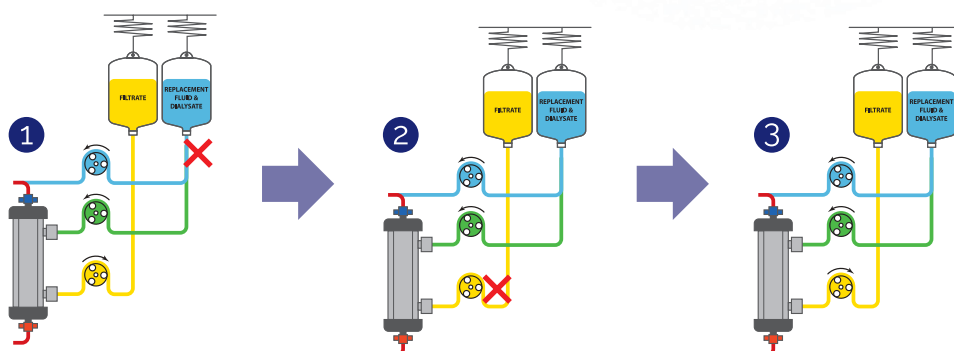
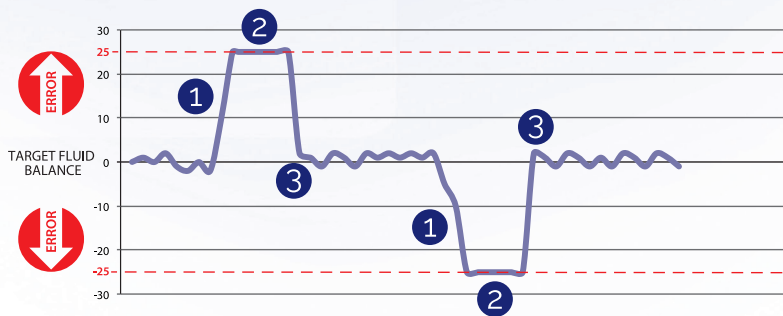


Additional Safeguardings

Advanced Fluid Balance control

AcuSmart™ has an advanced balance control system which ensures a balance error of 25g is not exceeded. This automatic monitoring and control system safeguards your patient from unexpected fluid balance inaccuracy that strongly influence the outcome of the CRRT treatment.

- 1 Forgot to unclamp the Substitution bag after bag change
- 2 Machine Stops the effluent pump until the patient fluid balance is adjusted to the normal level
- 3 The Machine function with all pumps operating



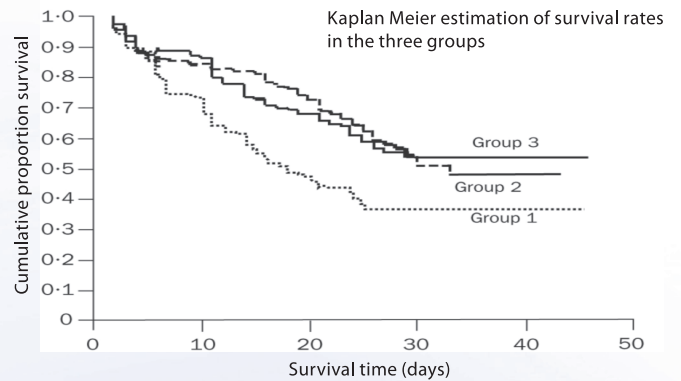


Dose mode

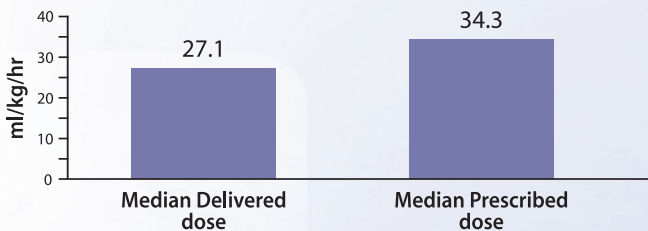
Importance of Dose Management in CRRT

CRRT Dose is one of the critical factors which influence patient mortality. The results of a single center prospective randomized study showed a higher survival rate among the group receiving a treatment dose over 35ml/kg/hr, compared to the group receiving the conventional dose of 20ml/kg/hr⁽¹⁾.

⁽¹⁾Claudio Ronco, et. al., The Lancet Vol 356: 26-30, July 1, 2000



Prescribed Dose vs Delivered Dose



The graph was generated from ⁽²⁾

However, a common problem with CRRT is the mismatch of prescribed and the delivered dose to the patient. Several clinical studies have shown that the delivered dose is generally lower in a range of 68-89% of the prescription⁽²⁾. Moreover effective delivered dose is not monitored.

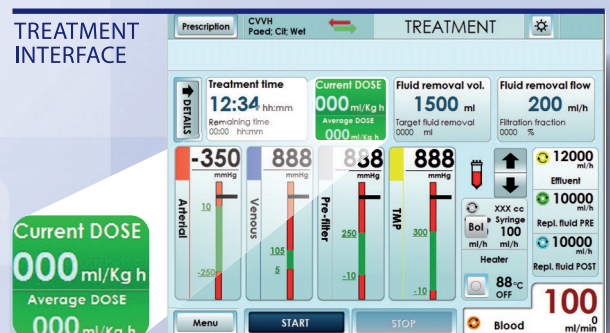
⁽²⁾Vesconi S, et. al., Critical Care Vol 13 No 2, 15 Apr, 2009

Dose Mode

DOSE Mode is specially designed to assess the balance between the prescribed dose and the delivered dose. In combination with the intuitive user interface, AcuSmart™ continuously updates the delivered dose information during the treatment.

Continuous Dose measurement

AcuSmart™ continuously updates the Dose status of the CRRT treatment. Downtime will also be calculated and AcuSmart™ will automatically adjust the treatment parameters to reach the target dose prescribed. Current DOSE shows the delivered dose in the current moment of the treatment. Average DOSE illustrates the overall dose which is measured from the beginning of the treatment.



Citrate Management

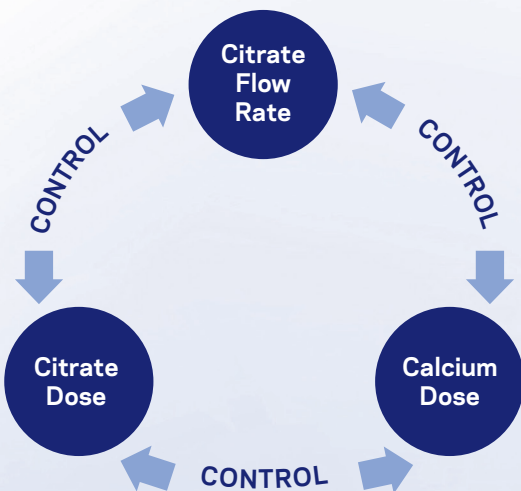
CRRT is a complex field of therapy which requires frequent monitoring. During the treatment effective anticoagulation is necessary in order to avoid bleeding risks and to insure better circuit survival. While heparin is still widely used, according to recent reviews citrate should be the first choice anticoagulant for CRRT. ^(1,2,3) AcuSmart™ greatly simplifies the challenging management of regional citrate anticoagulation (RCA) and enables the use of safe RCA with its Citrate Management protocol.

⁽¹⁾ Ouclemans-van Straaten, Citrical Care 2012,16:249, ⁽²⁾ Stucker, Ponte, Tataw, et. al., Critical Care 2012, 16:249, ⁽³⁾ KDIGO, 2B.

Effective and Safe

- RCA increases CRRT effectiveness due to longer circuit survival and less clotting, therefore decreases therapy interruptions and ensures the successful delivery of the targeted CRRT dose.
- RCA increases treatment safety due to reduced bleeding risks. ⁽⁴⁾

⁽⁴⁾ Hetzel, Schmitz, et. al., Nephrol Dial Transplant 2011,26:232-239



No more need of complex calculations:

1. Selected fluid type in initial set-up of machine as standard setting.
2. Go to "**Prescription**" screen and input *Haematocrit level and target blood flow rate*. Confirm by pressing "**Save**" button.
3. On "**Anticoagulant**" screen insert the prescribed *citrate flow (mmol/abd)* and *patient Ca⁺⁺ level (mmol/abd)*. Also confirm by pressing "**Save**".
4. If an adjustment of patient Ca⁻ level is needed, insert *additional calcium* to increase or decrease Ca⁺⁺ level of patient.

AcuSmart™ automatically calculates the citrate flow rate and Ca⁺⁺ infusion flow rate.

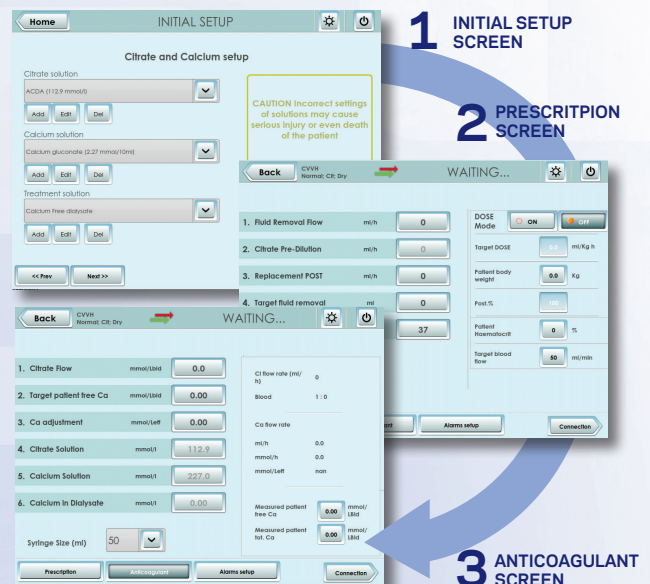
AcuSmart™ Citrate Management comes with the choice of two concentrated solutions:

- ACD-A 112.9mmol/L
- Trisodium 136mmol/L

Reliable Citrate and Calcium management

Integrated pumps for a reliable control of RCA:

- If blood flow rate is changed, the citrate and effluent flow rates as well as infusion flow will be automatically adjusted.
- Therefore, AcuSmart™ ensures that the Ca⁺⁺ replacement rates are in accordance with the doctor's prescription.
- Ca⁺⁺ infusion flow can be changed any time during the treatment according to the patient's Ca⁺⁺ level.



For a proper CRRT management, MEDICA offers a range of hemofilters, available in different sizes and connections to cover all CRRT needs for neonates, children and adults.

The range include 3 models based on the Medica proprietary membrane **MediSulfone®** and 10 models based on **PUREMA®**.

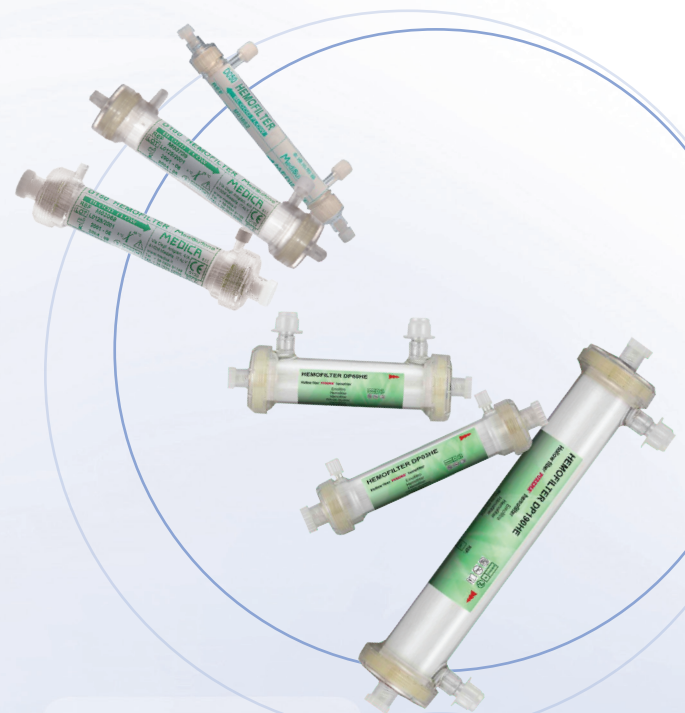
The high membrane permeability and excellent biocompatibility indicate the Medica Hemofilters for better CRRT performances.

The range of Medica Hemofilters includes:

- D050, D100, D150 based on **MediSulfone®** and DP03HE based on **PUREMA®**. These models are dedicated to neonates and children.
- DP07HE, DP09HE, DP12HE, DP15HE, DP60HE, DP120HE, DP150HE, DP190HE, DP230HE based on **PUREMA®**. These models are dedicated to adults.

HEMOfILTERS PRODUCT CODE

		Product Code ETO Sterile	Product Code Rays Sterile
D050 (0,075 m ²)	Paediatric	M03698	M03745
D100 (0,15 m ²)	Paediatric	M03739	M03984
D150 (0,25 m ²)	Paediatric	M03069	M03137
DP03HE (0,3 m ²)	Paediatric	M03912	M03915
DP07HE (0,7 m ²)	Adult	M03913	M03916
DP09HE (0,9 m ²)	Adult	M03893	M03901
DP12HE (1,2 m ²)	Adult	M03895	M03903
DP15HE (1,5 m ²)	Adult	M03897	M03905
DP60HE (0,6 m ²)	Adult	M03892	M03900
DP120HE (1,2 m ²)	Adult	M03894	M03905
DP150HE (1,5 m ²)	Adult	M03896	M03904
DP190HE (1,9 m ²)	Adult	M03898	M03906
DP230HE (2,3 m ²)	Adult	M03899	M03907



MediSulfone® is a registered trademark of Medica S.p.A

PUREMA® is a registered trademark of Membrana GmbH

Plasmafilters

Medica now also offers a range of **Versatile®-PES** Plasmafilters available with 0.05, 0.1, 0.2, 0.4, 0.6, 0.7 and 1.0 m² membrane area.

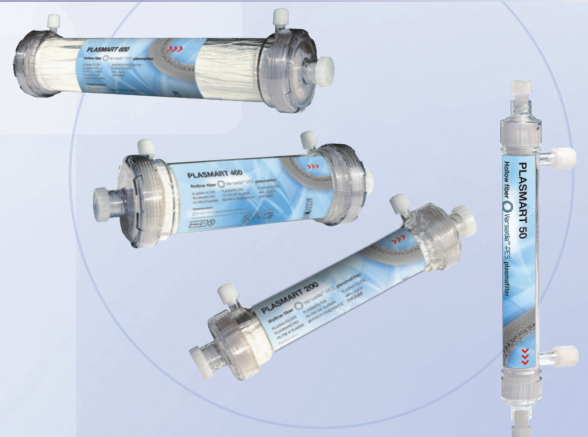
Versatile®-PES is a registered Trade Mark of MEDICA S.p.A.

Solutions

Available on request

PLASMAFILTERS PRODUCT CODE

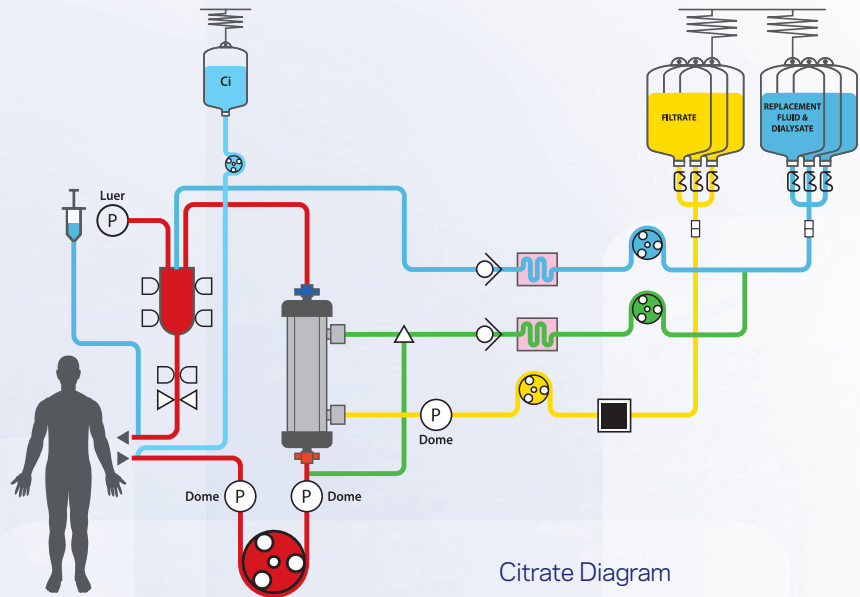
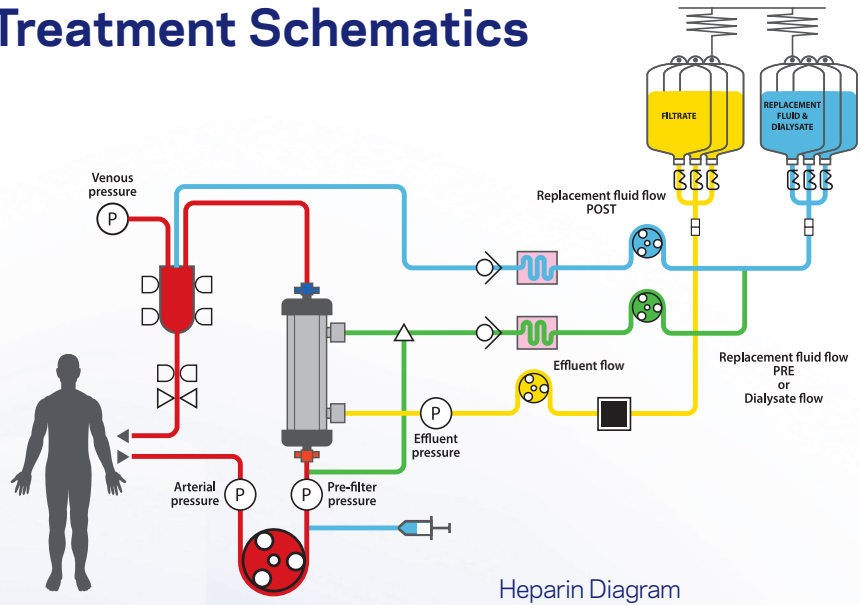
		Product Code ETO Sterile	Product Code Beta Rays Sterile
Plasmart 50 (0,05 m ²)	Paediatric	M03863	M03857
Plasmart 100 (0,10 m ²)	Paediatric	M03864	M03858
Plasmart 200 (0,20 m ²)	Paediatric	M03865	M03859
Plasmart 400 (0,40 m ²)	Adult	M03866	M03860
Plasmart 600 (0,60 m ²)	Adult	M03867	M03861
Plasmart 700 (0,70 m ²)	Adult	M90018	M90017
Plasmart 1000 (0,05 m ²)	Adult	M03868	M03862



TUBING SETS PRODUCT CODE

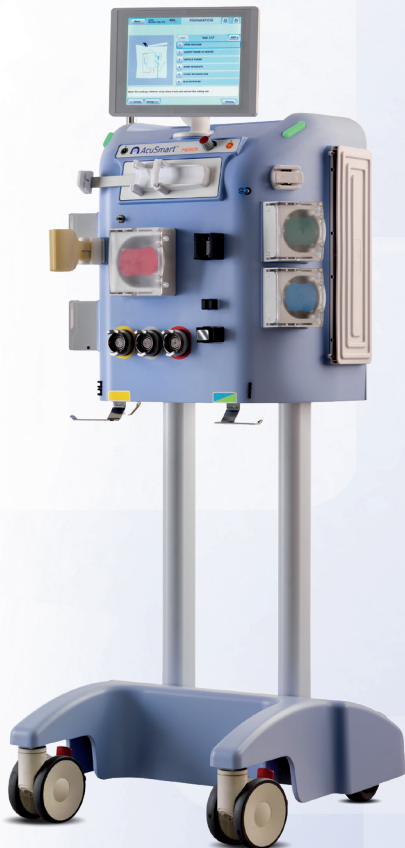
		Code	Ster.
AcuSmart line - C	Adult	M03873	R
AcuSmart line - CP	Paediatric	M03881	R
AcuSmart line - H	Adult	M03848	R
AcuSmart line - HP	Paediatric	M03874	R

Treatment Schematics



TREATMENT MODES NORMAL AND PEDIATRIC		
	Heparin	Citrate
CVVHDF	○	○
CVVHD	○	○
CVVH	○	○
SCUF	○	○
PE	○	○
HP	○	-
ECCO2R	○	-
ECCO2R + HF	○	○

SPECIFICATIONS



Treatment Modes (Heparin + Citrate)

Adult	CVVH, CVVHD, CVVHDF, SCUF, TPE, HP, ECCO2R, ECCO2R + HF
Paediatric	CVVH, CVVHD, CVVHDF, SCUF, TPE, HP, ECCO2R, ECCO2R + HF

Pump

Blood Pump	Flow Rate	5 to 400 mL/min
Filtrate Pump	Flow Rate	60 to 10.000 mL/h
Dialysate Pump	Flow Rate	60 to 10.000 mL/h
Replacement Fluid Pump	Flow Rate	60 to 10.000 mL/h
Syringe Pump	Flow Rate	0.5 to 15 mL/h
	Applicable Syringe	20, 30 and 50 mL disposable syringe
Citrate Pump	Flow Rate	1 to 1000 mL/h

Other Components

Blood Leak Detector	Sensitivity	> Blood Cell Concentration 0.15%
Inlet Pressure Monitor	Range	-500 to 500 mmHg
Venous Pressure Monitor	Range	-500 to 500 mmHg
Filtrate Pressure Monitor	Range	-500 to 500 mmHg
Arterial Pressure Monitor	Range	-500 to 500 mmHg
Heater for Dialysate	Range	33 to 39°C
Heater for Replacement Fluid	Range	33 to 39°C
Display	Size	10.4 inch
	Other	Software Upgrade via USB storage or CF card
Air Detector	Sensitivity	0,01 ml at 10 ml/min
Citrate Scale	Weight	MAX 2 kg
Ultra Filtration Scale	Weight	MAX 15 kg
Replacement/Dialysate Scale	Weight	MAX 15 kg
Battery	Operation Time	15 min for Blood Recovery
Electrical ratings	Rated Voltage	115 ÷ 230 VAC

Dimensions and Weight

Height	Width	Depth	Weight
150 cm	55 cm	75 cm	60 kg

Gruppo _____
MEDICA
_____ Group

MEDICA S.p.A.

Via degli Artigiani, 7 | 41036, Medolla (Modena) - ITALY

Phone +39 0535 51159 | Fax + 39 0535 52605 | info@medica.it | www.medica.it

 **UNI EN ISO 9001:2015**
UNI CEI EN ISO 13485:2016
0476