

Diapact® CRRT

Designed with Patient Safety in Mind



Avitum

HomeoSAFE
balanced by intelligence

B | BRAUN
SHARING EXPERTISE

The HomeoSAFE Concept



Main Advantages

The Diapact gives full freedom in terms of therapy, flexibility and efficiency:

- Real Renal Dose is easily achieved due to fewer bag changes
- High Renal Dose is achieved due to less interruptions during treatment
- High clearances can be achieved due to high flow rate options
- Full freedom to navigate through all CRRT modes
- New HomeoSAFE trainings to achieve better use



Software Intelligence
Accuracy
Fluid Balance
Expertise

Medical experts in the field have clearly stated that Fluid Balance is one of the key aspects during Continuous Renal Replacement Therapy (CRRT):

- The lack of success in modifying outcomes with intensive dialysis might be related to the absence of considering Fluid Balance as a component of dialysis dose.¹
- The possibility of making fluid balance errors during CRRT has been identified since the beginning of this modality of treatment.²

Since our top priority has always been to secure the Fluid Balance Management of your acute patient during extracorporeal therapies, the Diapact System has been developed with a unique software approach (HomeoSAFE) in order to secure the fluid exchanges, whatever the flow rate.

The HomeoSAFE Concept

One load cell for unsurpassed accuracy:

- Unique Fluid Balance Management regulated by the filtrate pump
- Automatic pump ramping for compensation
- Alarm suppression when bag is moving (vibration)
- Automatic fluid compensation if +/- 15 gr:
 - ▶ Net loss: effluent pump will reduce speed
 - ▶ Net gain: effluent pump will increase speed
- Safety maximum stop at 180 ml discrepancy

¹ Mehta, R.L.: Fluid balance and acute kidney injury: the missing link for predicting adverse outcomes? Nature Clin Pract Neph. 2009;5(1): 10-11
² Ronco C., Ricci Z., Baldwin I., Kellum J.: Management of fluid balance in CRRT: a technical approach. Int. J. Artif Organs. 2005;28(8): 765-76

CVVHFD

Full Therapy Flexibility Individually Adaptable at Any Time

CVVHFD Filtration/Back Filtration System

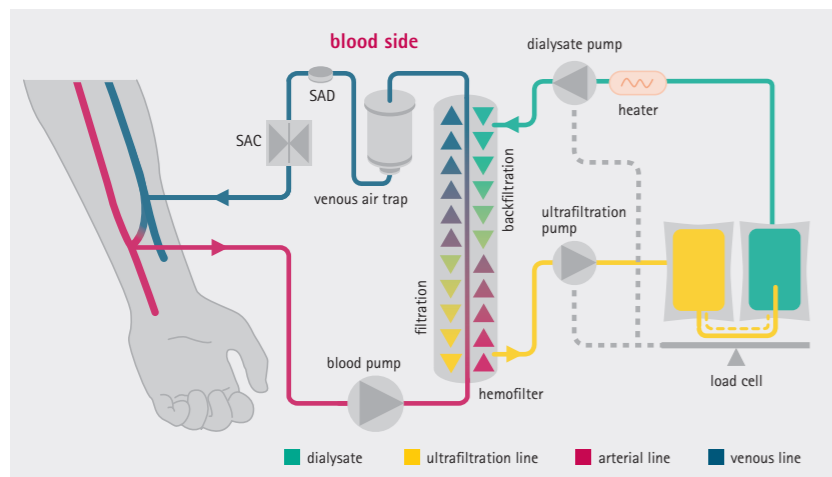
Using a high flux filter at low UF rates produces back filtration at the dialysate inlet of the filter. This back filtered fluid serves as a substitution fluid. The patient's fluid balance is maintained by the Diapact® CRRT System's single weighing scale.

The result of this therapy (CVVHFD –Continuous Veno-Venous High Flux Dialysis) is a combination of convective and diffusive clearances combined with the middle molecule clearance capability of the high flux filter.

Therapy Options

The Diapact offers a full spectrum of therapy options, including:

- SCUF for fluid overload
- CVVH low and high fluid exchanges for Acute Kidney Injury (AKI)
- Option to perform in CVVH or HVHF pre or post dilution
- Unsurpassed CVVHFD as compared to CVVHDF in terms of clearances (less fluids used)
- TPE and plasma adsorption available at any time
- Cascade Filtration available for severely septic patients
- Citrate option in CVVHD mode (e.g. Essen hospital protocol)



Low, Medium and High Fluid Exchanges

Operation of Diapact® CRRT is as simple as the sophisticated application options are diverse. Thanks to high flow rates of up to 15 l/h, the machine is suited for high volume therapies.

Full Spectrum of CRRT and Plasma Therapy Options Available

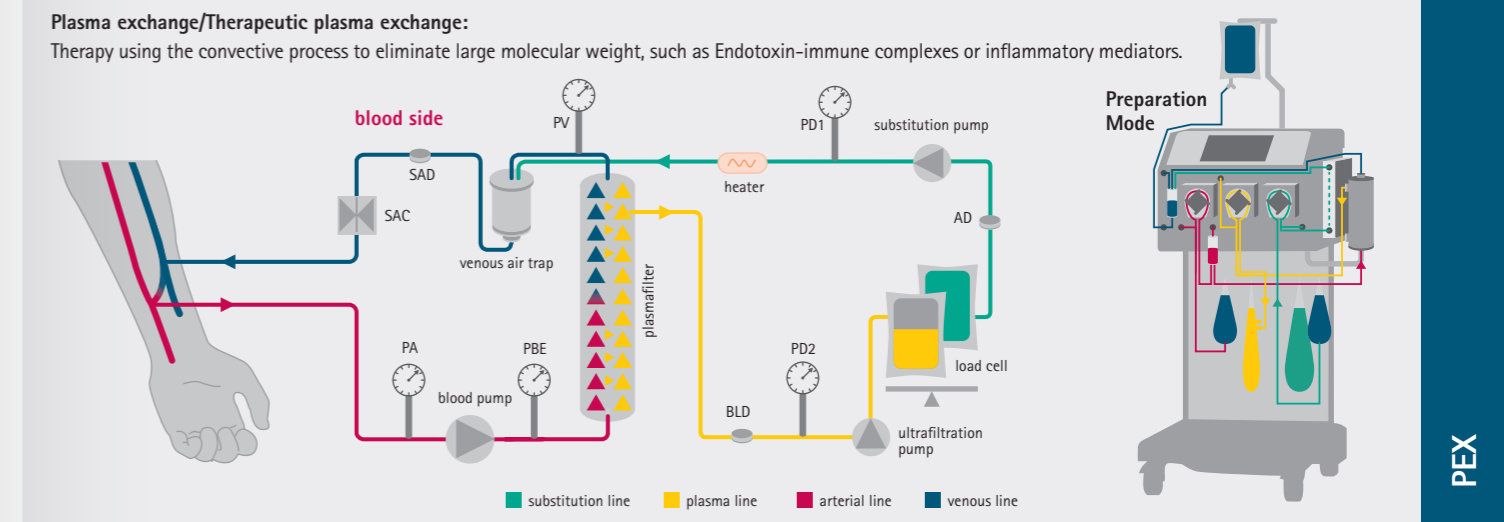
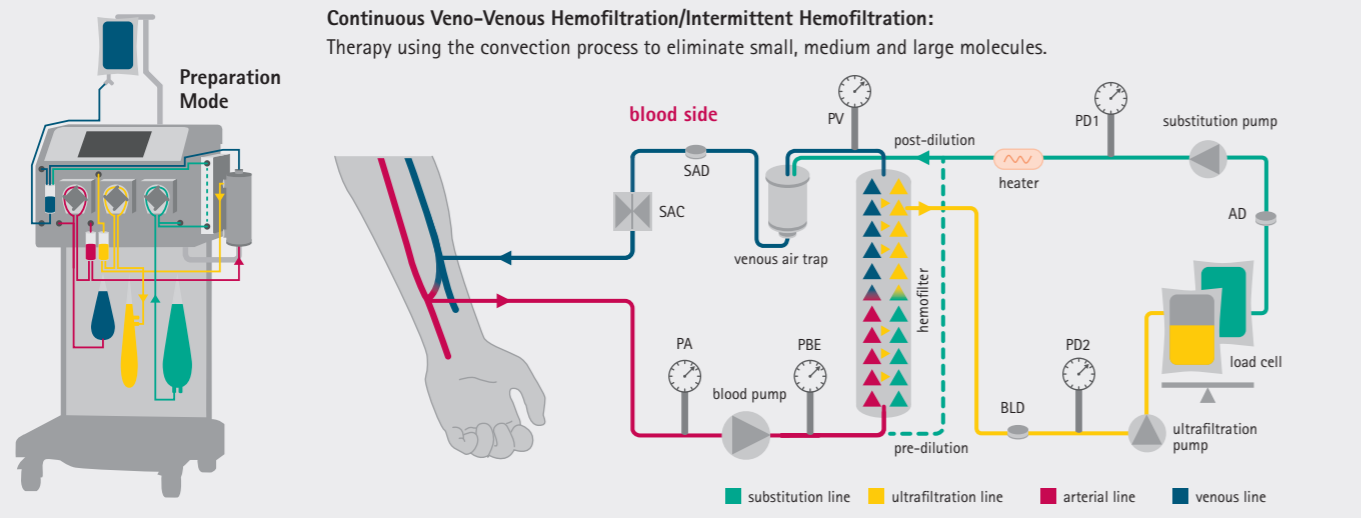
Easy to Navigate Through Therapies at Any Time During Treatment

With its HomeoSAFE concept, the Diapact System is able to perform all acute blood purification modes safely. Its unique flexibility in terms of therapies enables you to deliver CVVHDF/CVH/HVHF/CVVHD/IHD in pre/post dilution at up to 15 l/h. Thanks to one load cell, it is able to accommodate up to 5 bags of 5 l (25 l), thus reducing the nurse's workload during CRRT.

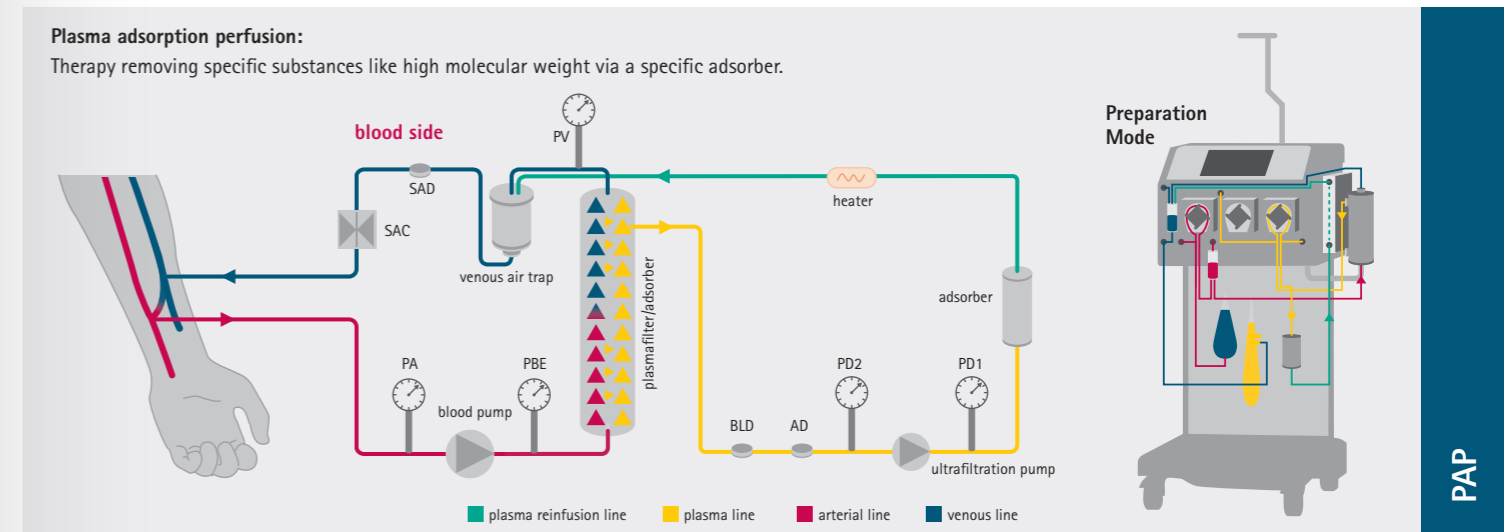
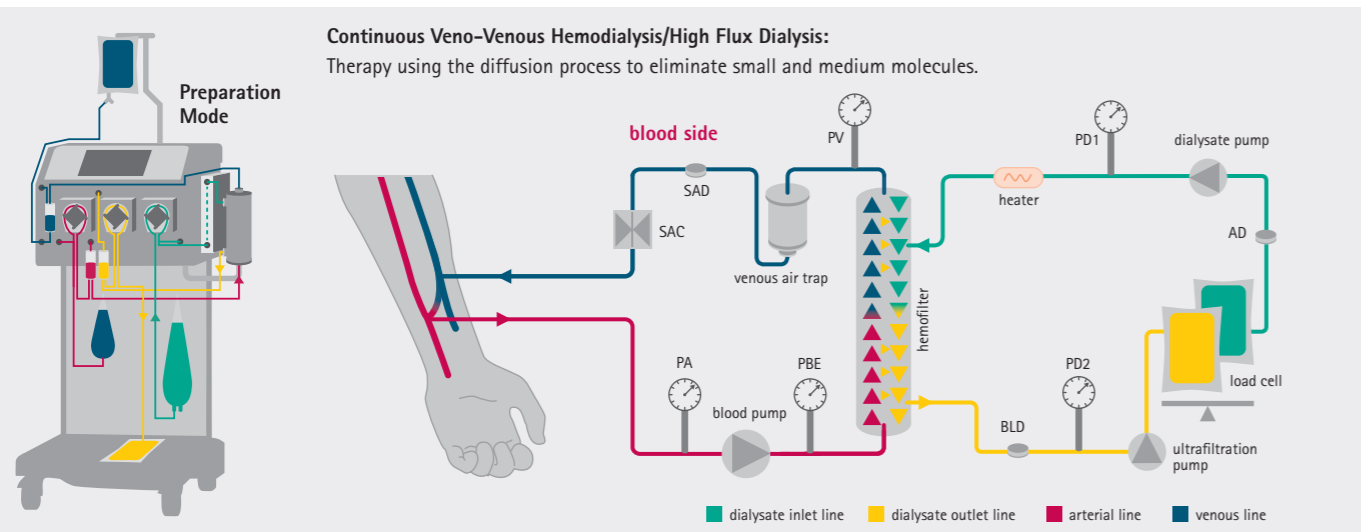
The versatility of the hardware gives you the option to perform Plasma Exchange (PEX) – Plasma Adsorption Perfusion (PAP) or Cascade Filtration in order to monitor the patient's state at any time. There is no need to prime in the most sophisticated therapy mode because all the lines are always primed, thus making it possible to navigate through all acute therapy modes.



CVH/HF + IHF Modes



CVHD/CVVHDF + IHD Modes



AD air detector | BLD blood leak detector | SAD safety air detector | SAC safety clamp | PA arterial pressure | PD1 filter inlet pressure | PD2 filter outlet pressure | PV venous pressure | PBE pre-filter pressure

Automatic Fluid Exchange Decrease



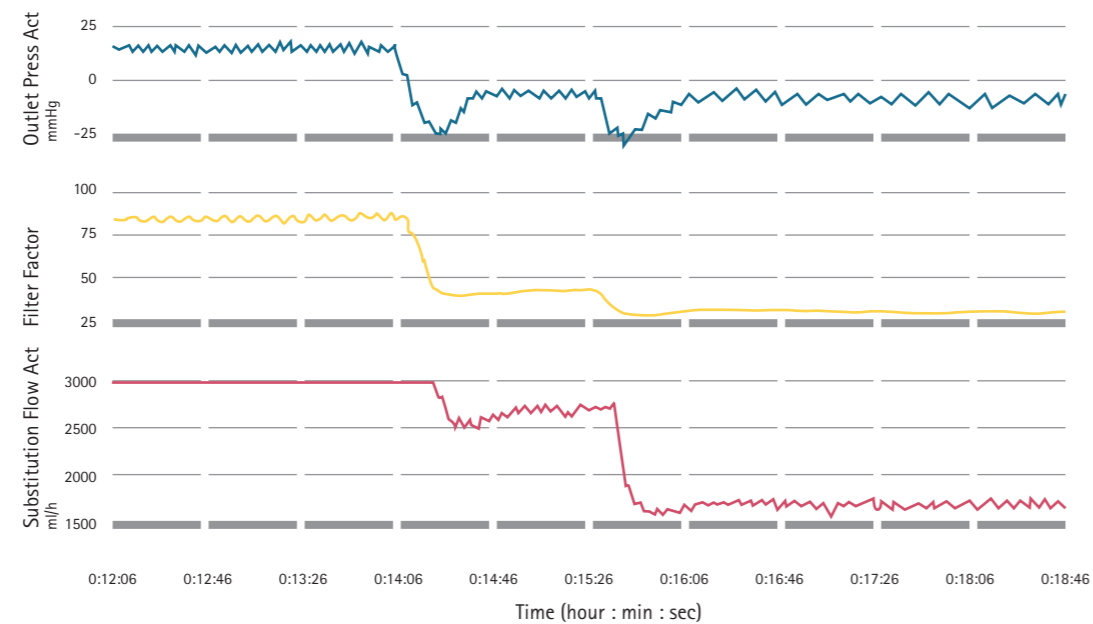
Another very frequent alarm during acute blood purification is the rapid increase in Transmembrane Pressure (TMP) due to the fact that the hemofilter is starting to saturate. A key advantage of the intelligence of the Diapact Software is the ability to modulate the Fluid Exchanges in order to prolong the lifespan of the hemofilter. The regulation of the ultrafiltration is always linked to the filtration ratio (blood flow as compared to filtration flow).

The HomeoSAFE Concept

- Avoid filter saturation during a sudden TMP increase
- Automatically stop treatment when TMP continues to rise
- Avoid incessant blood pump and fluid exchange stops
- Automatic pump ramping to avoid high filtration ratio
- Automatic reduction in fluid exchanges to avoid membrane saturation
- Improve Renal Dose due to less interruptions
- Prolong life span of the filter

The Diapact HomeoSAFE

- Blood flow automatically reduced by 25% as compared to current blood flow
- Maximum at 60 ml/mn



Automatic Blood Flow Reduction



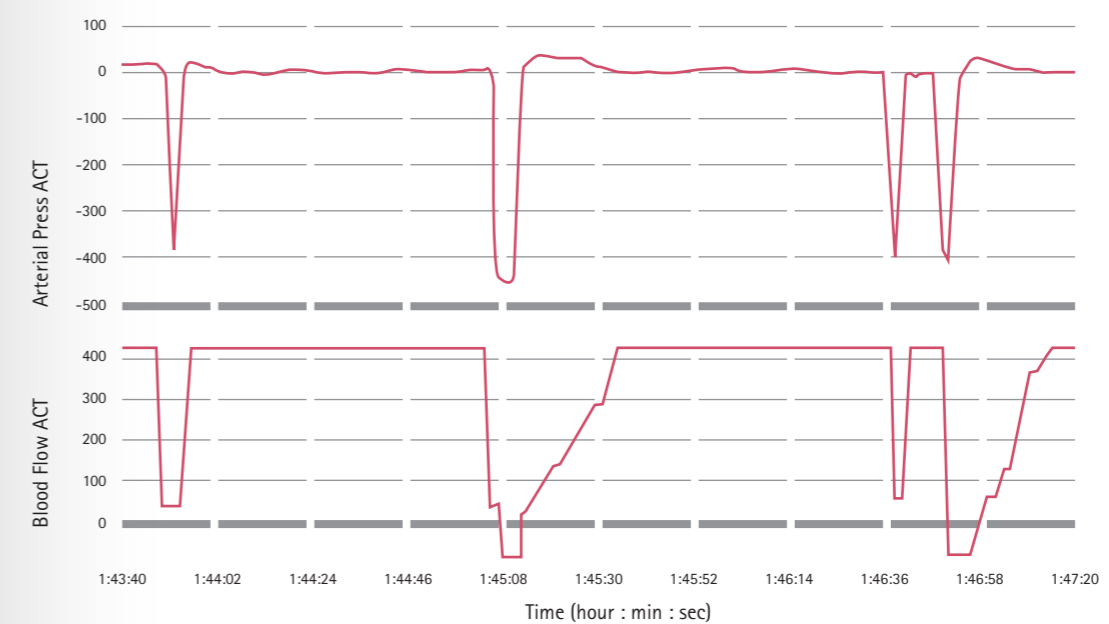
Largely due to catheter problems, pressure alarms are one of the most frequent types of alarm during CRRT, especially on the blood circuit (artery and venous sides). A unique advantage of the Diapact Software (HomeoSAFE) is the ability to automatically adapt the blood flow rate as compared to the blood pressure monitoring (low or high pressure in arterial or venous line). The Diapact software regulation avoids incessant blood pump stops (coagulation problems), which are leading to additional nurse work and also lowering the Renal Dose.

The HomeoSAFE Concept

- With catheter clotting
- With lines kinked
- During patient mobilization
- During hypotension episodes
- Automatic blood flow/filtrate ratio adjustment
- Improve Renal Dose due to less interruptions
- Prolong life span of the filter

Filtration Ratio:

- CVHD/HFD/HF: warning at 25%
- CVHD/HFD/HF: maximum limit at 40%



Fluid Warmer

A very frequent issue faced during CRRT is hypothermia episodes due to the level of fluid exchanges. The Diapact System has a fully integrated fluid warmer, which is adjustable from 20 to 39°C, thus helping the patient to keep a continuously accurate body temperature.



The Diapact System has the most accurate, efficient and safe fluid warmer due to

- Specific design of the plates improving accuracy and efficacy
- Fully automated priming due to pre-connected line and bag in the set
- Large surface area for optimal heat exchanges
- Double channel safety control at low or high fluid exchanges

Benefits

- Heat safely from 20°C (in case of cardiac arrest) to 39°C (for HVHF)
- Ability to change temperature within the therapy modes
- Heat fluids accurately even at very low fluid exchanges (low body weight)
- Heat fluids (replacement/dialysate) at the actual temperature selected

Training and Services

The New Advanced Education Program

Sales excellence is our divisional commitment and sharing expertise our corporate promise. Quality of care is our philosophy. Our goal is to ensure that everybody has the knowledge and expertise needed to fulfill her or his task and is encouraged to build a network to share expertise. We promise to expand our expertise continuously for the well-being of patients and to share it with our partners and the healthcare community.



Web-based Training Lessons

- Renal Anatomy & Physiology
- Acute Renal Failure
- What is CRRT?
- Delivery of CRRT
- CRRT Considerations



Live Training

- Introduction to Diapact HomeoSAFE
- Preparing the Diapact System
- Treatment Mode
- Trouble Shooting Management



Hands-on

- Preparing the Diapact System
- Treatment Modes
- Pressures, Alarms and Fluid Balance
- Flow and Order Sheet Templates/Forms

1

2

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Service

Sharing Expertise expresses our personal promise: We want to expand and share our knowledge about products, processes and markets in dialogue with customers, partners and colleagues. In this way, our expertise will be incorporated in products that represent the three core values of our company: innovation, efficiency, and sustainability.

This promise is very valuable in terms of healthcare. As one of the leading companies on the global healthcare market, our wealth of knowledge is enormous: 40,000 staff members across all continents link their competence and experience each and every day in order to develop innovative, efficient and sustainable products. Our expertise in the field of extracorporeal blood therapy is very special, notably, that of a system provider. We want our capability and expertise to be rewarding – for medical practitioners, for patients and for even better global healthcare. The B. Braun Avitum Education Program covers all the special fields of extracorporeal blood therapy (hemodialysis, acute dialysis and apheresis).

Diapact® CRRT – The HomeoSAFE software approach has high technology for Fluid Balance Management:

- Unsurpassed Fluid Balance accuracy
- High safety aspects in terms of fluid exchanges
- High hemodynamic stability response for Total Fluid Management, thus preventing hypovolemia (excessive fluid loss) and hypervolemia (excessive fluid gain)
- The Diapact System has the one of the most efficient fluid warmers due to the design of the plates: 20 to 39°C

The load cell can accommodate up to 25 l on the fluid side, thus reducing the nurse's workload and by the way improving real treatment time (Renal Dose).

Device Accessories

- Perfusor Compact S/fm: for heparin infusion linked to the software of the Diapact and controlled from the main screen
- Cable for nurse call
- Cable for data transfer (DCI)



The Diapact System Integrates A Complete Intensive Care Blood Portfolio

Diacap® Acute: Hemofilters/Haemoselect Plasmafilters

- Highly biocompatible Polysulfone membrane
- High cut-off allowing high clearances
- Easy to prime and lower blood resistance
- Gamma sterilization to avoid ETO reaction



Duosol® Bicarbonate Solutions

- 5 l double chamber bag with wide formula range (0-4 K⁺)
- Very stable pH due to chamber configurations
- Very limited CO₂ release
- Two-year shelf life
- Option for lower bicarbonate levels and Calcium free for citrate mode



Haemocat® Catheters

- Wide range for femoral/jugular and subclavian access
- Unique arterial ECG lead for adequate positioning
- No need for additional Rx monitoring after insertion



New Pre-assembled Kit

- Easy assignment of the pump segments and their orientation
- Easy positioning of the components of the tubing system
- Reduces staff work
- No multiple packaging



B. Braun Avitum

A Comprehensive System Supplier

B. Braun Avitum has been a leading provider of dialysis care products for more than 30 years. The B. Braun Avitum product range includes dialysis machines and dialysis consumables for chronic and acute dialysis as well as a comprehensive product portfolio for special blood cleansing processes to treat conditions such as lipid metabolic disorders.

B. Braun Avitum does much more than simply manufacture top-quality dialysis machines, dialyzers and disposables. The company offers an integrated system, which is composed of perfectly harmonized components encompassing therapy options, software solutions for an optimal dialysis and an economical treatment routine, technical service as well as process consulting, planning, installation and training. Customers profit from the expertise of an all-round system supplier with comprehensive knowledge and experience of every aspect of the dialysis situation – from research to manufacturing to therapy.

All-round system supplier in Extracorporeal Blood Treatment: A leader in research, manufacturing and therapy

Complete product range for Hemodialysis, Acute Dialysis & Apheresis/H.E.L.P.	Machines
	Dialyzers
	Hemodialysis bloodline systems
	UltraPureFluid system
	Dialysis fluid filter and online filter
	Fistula needles
	Dialysis catheters
	Hemofiltration solutions
	Infusion and irrigation solutions
	Dialysis concentrates
Disinfection and accessories	

An Experienced Dialysis Treatment Provider

In addition to its role as a manufacturer of dialysis equipment, B. Braun is an important provider of dialysis treatment. B. Braun Avitum operates more than 200 dialysis centers – all furnished with state-of-the-art equipment and serviced by highly professional healthcare staff. Additional services such as diet programs, vacation dialysis and pre-dialysis programs are offered in most countries, and B. Braun Avitum cooperates fully with the local transplant organizations.

Above all, B. Braun Avitum is committed to the well-being of the patients it serves and puts this commitment at the center of all its efforts. A certified management system sets an objective seal on this claim: B. Braun Avitum is a holder of the EN ISO 9001:2008 quality certificate and the Good Dialysis Practice certificate. As a dialysis center operator, B. Braun has made important contributions to modernizing healthcare systems, particularly in Eastern Europe.

Over 200 dialysis centers and nearly 12,000 patients in Europe, Asia-Pacific and Africa

