5008S
The Pragmatic Approach to ONLINE HDF

Extending Experience

Fresenius Medical Care
Offering ONLINE HDF to All Patients Around the World

ONLINE Haemodiafiltration (ONLINE HDF) is increasingly being recognised as the most advanced haemodialysis treatment modality that improves patient outcomes through a number of clinical advantages. These benefits indicate that ONLINE HDF induces less endothelial dysfunction, thereby facilitating Cardioprotective Haemodialysis.

We at Fresenius Medical Care strive to continuously refine and develop new dialysis therapies and products to improve clinical outcomes of dialysis patients. The innovative 5008S system combines our technological and dialysis provider expertise and allows you to utilise the full benefits of Cardioprotective Haemodialysis.

While focussing on a more widespread implementation of the most advanced treatment modality for dialysis patients, the 5008S has been conceived with the sole purpose of enabling ONLINE HDF in a pragmatic manner – taking into account the needs of the nursing staff – and of course, the patients.

Thus, the cornerstones of the 5008S philosophy are the provision of:

- Best therapy for your patients
- Best handling for all users
- Optimal use of resources

The 5008S Dialysis System has been extensively tried and tested around the world. With the confidence of this elaborate clinical experience, the recognised superiority of ONLINE HDF can now be offered to all patients around the world.
Best Therapy for your Patients

ONLINE HDF – The Therapy of Choice

Despite significant advances in the quality and efficacy of haemodialysis therapy in recent years, morbidity and mortality among haemodialysis patients are still unacceptably high. There are numerous reasons for this poor patient outcome as current renal replacement therapies are only partially able to replace the natural kidney’s filtering functions. The continuous improvement of the efficiency of renal replacement therapies should therefore represent the central point in the care of End Stage Renal Disease (ESRD) patients.

One of the major goals of Fresenius Medical Care’s Cardioprotective Haemodialysis programme is the continuous development and implementation of innovative therapy systems and concepts, further improving the cardiovascular prognosis of dialysis patients.

Recent studies demonstrate that the ONLINE HDF therapy offers a significant reduction of the risk for mortality for ESRD patients compared to standard haemodialysis therapy (7).

ONLINE HDF, particularly with large volumes of sterile replacement fluid, offers not only the most physiological and efficient elimination of a broad range of small, medium-sized and large uremic toxins, but also improves patient outcome and Quality-of-Life through:

- Better elimination of middle molecules (1)
- Greater haemodynamic stability (2)
- Less side-effects and intradialytic symptoms (2)
- Reduced Calcium-Phosphate-Product (2)
- Better anaemia control and reduced EPO requirements (4)
- Reduced inflammation and oxidative stress (5, 6)

![](ONLINE_HDF_Pump.jpg)

1. Relative risk of mortality by dialysis type (Adjusted for age, sex, time on dialysis, 14 summary comorbid conditions, weight, catheter use, haemoglobin, albumin, normalized protein catabolic rate, cholesterol, triglycerides, Kt/V, erythropoietin, MCS and PCS). Canaud B et al., Kid Int 2006; 69: 2087-2093
Although convective therapies are prescribed to efficiently remove larger solutes, the continuous monitoring of the clearance of small solutes is essential towards evaluating the overall efficiency of the treatment. The Online Clearance Monitor (OCM®) of the 5008S provides completely automated dialysis efficiency control without incurring additional expenses and assures compliance of dialysis dose targets.

Additionally, the therapy option Blood Temperature Monitor (BTM) offers the possibility to further increase the quality of treatment: regulation of the core body temperature significantly improves the haemodynamic stability and effective recirculation measurements can be undertaken.

Furthermore, numerous novel technology safety systems of the 5008S (e.g. various leakage sensors and integrity tests) help to minimise undesirable incidences, assure the highest patient safety and provide full confidence for the entire dialysis team.

5008S – Offering ONLINE HDF to All Patients Around the World.

5008S – Facilitating ONLINE HDF Therapies

Haemodialysis involves a large number of intensive manual operations centred around the haemodialysis machine.

The 5008S Dialysis System and all its individual components have been created to minimise and facilitate these routine procedures as much as possible. This gives the nursing personnel much-needed time for the adequate care of a growing number of patients who additionally and increasingly suffer from multiple comorbidities.

- Centralised operation and information via a spacious touch screen interface.
- “Intuitively correct” user guidance philosophy.
- Ergonomic handling, e.g. one-handed connection of bibag®.
- Seamless work-flow including multiple machine-assisted procedures.
- Easy, rapid and safe data management via PatientCard or network (Therapy Data Management System – TDMS).

Hence the 5008S facilitates ONLINE HDF in a surprisingly easy manner by applying sophisticated technologies and innovative operation concepts. Based on the experience gathered as the leading service provider in dialysis care and the feedback from numerous users, the 5008S has been specifically designed to simplify and safeguard all work-intensive and manual operation steps in daily routine through fully automated and matured procedures.

The 5008S not only provides unlimited quantities of sterile substitution fluid for a highly efficient ONLINE HDF therapy, but also applies intelligently the ONLINE concept to ease the labour-intensive priming and post-processing steps:

- ONLINE Priming
- ONLINE Bolus
- ONLINE Reinfusion

5008S – The Pragmatic Approach to ONLINE HDF.
Optimal Use of Resources

Efficient and Sustainable

As a provider of dialysis products and services, Fresenius Medical Care is constantly aware of the fact that restricted health care resources require novel solutions to perform the most superior dialysis therapy.

It is therefore one of our firm commitments to provide premium haemodialysis systems and therapies that facilitate and promote the efficient and sustainable use of these limited resources available for an increasing patient number.

With the acknowledged benefits of the online production of large quantities of sterile dialysis fluid, the complex handling procedures involving rinse solutions from bags and bottles have become obsolete. Thus, the ONLINE Priming, ONLINE Bolus and ONLINE Reinfusion not only simplify standard handling procedures but save the need for ready-made rinse solutions. 1

The automatic adjustment and optimal adaptation of dialysate flow to the effective blood flow with “AutoFlow” 8 and the minimised consumption during stand-by conditions with “EcoFlow”, economise the use of dialysate and energy. 2

The innovative and highly automated work-flow in all routine procedures, the easy data input and documentation, as well as novel approaches in serviceability save valuable time for personal patient care and ensure highest availability and reliability.

The 5008S offers a highly pragmatic approach towards the provision of ONLINE HDF – currently, the best possible therapy – using sophisticated modern technologies while maintaining an awareness of the limited resources available in dialysis units.

5008S – Making a Premium Therapy Become Standard!


1: ONLINE Priming makes saline rinse solution obsolete

2: AutoFlow: matching dialysate best to blood flow thus reducing dialysate and energy consumption
The new 5008S Dialysis System allows ONLINE HDF therapy to be accomplished as the standard treatment modality in a remarkably easy and convenient manner. The simplification of this traditionally very elaborate and complex therapy into a highly safe modality is significantly facilitated by the application of fully-automated, easy-to-operate and ergonomic design features of the new 5008S System.

With a clear emphasis on the essentials of the superior ONLINE HDF therapy for routine clinical practice as well as a consideration of optimal usage of all available resources, this extremely sleek dialysis system will contribute towards establishing ONLINE HDF as the treatment of choice in renal replacement care around the world.

5008S – The Pragmatic Approach to ONLINE HDF.
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### General data

**Dimensions 5008S**
- 1,680 x 350 x 780 mm (H x W x D) at bed/dialysis chair level (width at base: 520 mm, depth with canister holder: 900 mm)

**Weight**
- approx. 100 kg

**Monitor/Screen**
- 15” high-resolution TFT LCD with touch screen user interface. Monitor rotatable around the 3 axes

**Card reader**
- Smart card (ICC) for Patient, User and ServiceCard

**Water supply**
- Water inlet pressure: 1.5 – 6.0 bar
- Water inlet temperature: 5 – 30°C; for “integrated hot rinse” 85 – 95°C
- Max. drain height: 1 m

**Concentrate supply**
- Supply pressure: 0 to 100 mbar; 1 m suction height with Central Delivery System: 0.05 to 2.0 bar
- 1 central acid concentrate (option)

**Electrical data**
- Power supply: 100 to 240 V AC ± 1%
- Current consumption: Approx. 6 A (at 230 V) at a water inlet temperature of 17°C, Dialysate temperature 37°C
- Dialysate flow: 500 mL/min

**Dialysate flow circuit**
- Selectable
- AutoFlow (selectable)
- Dialysate fluid flow range: 0 – 1,000 mL/min (steps of 100 mL/min)
- Automatic adaptation of the dialysate flow to the effective blood flow (factors adjustable)

**Dialysis fluid temperature**
- Range: 34 – 39°C

**Dialysis fluid conductivity**
- Range: 12.8 – 15.7 mS/cm
- Accuracy: ± 0.1 mS/cm

**Sodium concentration dialysis fluid**
- Mixing ratio: Freely adjustable e.g. 1 + 44, 1 + 34
- Adjustment range: 125 to 151 mmol/L, depending on the concentrate used ± 10% of the base value

**Bicarbonate concentration dialysis fluid**
- Default mixing ratio: 1 + 27.6 (others possible)
- Adjustment range: 24.0 – 40.0 mmol/L (steps of 0.5 mmol/L)

**Bicarbonate dry concentrate**
- Delivery range: 0.5 to 10 mL/h
- Bolus function: 1.0 up to 20.0 mL
- Syringe size: 30 mL

**Dialysis fluid filter system**
- DIASAFE® plus
- OCM® Online Clearance Monitoring
- BPM (Option)
- Temperature measurement: Accuracy ± 0.2°C
- Body temperature control: Allowed change rate ± 0.5°C/h
- Recirculation measurement: Accuracy ± 2%

### Extracorporeal circuit

**Arterial pressure monitoring**
- Display range: -300 mmHg to +300 mmHg
- Resolution: 5 mmHg
- Accuracy: ± 7 mmHg

**Venous pressure monitoring**
- Display range: -100 mmHg to +500 mmHg
- Resolution: 5 mmHg
- Accuracy: ± 7 mmHg

**Transmembrane pressure monitoring**
- Display range: -100 mmHg to +400 mmHg
- Resolution: 5 mmHg

**Arterial blood pump**
- Blood flow range (effective): 30 to 600 mL/min
- Accuracy: ± 10%

**Single-Needle system (Option)**
- 2 blood pumps. Internal pressure/pressure control with variable stroke volume (max. 50 mL)

**Air bubble detector**
- Ultrasound transmission measurement on blood line, additional capacitive level and optical monitoring

**Heparin pump**
- Delivery range: 0.5 to 10 mL/h
- Bolus function: 1.0 up to 20.0 mL
- Syringe size: 30 mL

**Disinfection and cleaning programmes**
- Rinse
- Temperature/flow: 37°C/600 – 800 mL/min (adjustable)
- Hot rinse (recirculation)
- Temperature/flow: 85°C/600 – 800 mL/min (adjustable)
- Cleaning Sporotal® 100 (recirculation)
- Temperature/flow: 37°C/600 – 800 mL/min (adjustable)
- Heat disinfection Diasteril®/Citrosteril® (recirculation)
- Temperature/flow: 85°C/600 – 800 mL/min (adjustable)
- Disinfection Puristeril® 340/plus (recirculation)
- Temperature/flow: 37°C/600 – 800 mL/min (adjustable)

*Various programme combinations selectable. Technical changes reserved.