5008 Therapy System
The 5008 Therapy System
A Vision turned into Reality
The 5008 therapy system is the right tool available today that allows you to cope with tomorrow’s haemodialysis realities: continually increasing patient numbers with a growing share of medically challenging patients, combined with often limited funding and staff.

Above all, dialysis quality remains the key issue.

The 5008 therapy system offers, for the first time, the highest treatment quality – ONLINE Haemodiafiltration – with convincingly easy handling and a thoughtful use of the dialysis-relevant resources. Moreover, the intuitive and straightforward operation of the 5008 therapy system provides the dialysis team with the time needed to fully care for the patient.

After all, our dialysis patients deserve the best Quality-of-Life that is medically and technically possible.

Take a little time and discover the innovative elements of the 5008 therapy system. You will realise that the 5008 therapy system is a lot more than the sum of its components:

It is a highly integrated system, built for sustainable dialysis – today and tomorrow.

5008 – a Touching Experience!
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Best Handling for all Users
Tailor-made to Meet the Needs of all Operators

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

The 5008 therapy 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 care of a growing number of patients who additionally, increasingly suffer from multiple comorbidities.

Virtually every aspect of operation was taken into consideration: simple & safe data in- and output via the novel user interface, rapid set-up and dismantling of disposables, advantageous priming & preparation of the extracorporeal circuit (ONLINE produced fluids completely substitute all saline solutions in bags or bottles!) plus new innovative approaches regarding serviceability.

The 5008 concept was only possible because Fresenius Medical Care involved and listened to numerous nurses, technicians and nephrologists from different countries throughout the development of the 5008 therapy system. Nothing else than their – and thus also your – complete satisfaction was in the focus of our development.

With the 5008 therapy system, for the first time a haemodialysis system has been created that is actually adapted to the needs of the operator – and not the operator having to adapt himself to the system!

The new 5008 therapy system is the first haemodialysis system we developed as a dialysis service provider – Fresenius Medical Care has thus created a system out of the practice for the practice – that is, created by users for users!

Get in touch with the 5008 and experience the difference!
Well-designed User Interface

“How would a nurse expect a new haemodialysis system to be? – Then, build it!” was the starting point and motto for the creation of the navigation system of the 5008:

- Centralised operation & information via a spacious touchscreen display
- “Intuitively correct” user-guidance philosophy: designed for rapid, error-free data entry
- Novel, stress-free handling of alarms during treatment

Easy, Rapid and Safe Data Management

- Individualised therapy prescription & documentation:
  “Offline” with PatientCard
  “Online” via integrated network (LAN) connector & Finesse®
- Patient data available retrospectively (of current and previous three treatments)
Optimised Ergonomics

- Individually adjustable, free rotatable flat-screen monitor

- Easy, machine-assisted set-up & dismantling of tubing systems:
  The clearly-structured and well laid-out extracorporeal blood circuit offers extremely easy machine-assisted (e.g. automatic pump segment and pressure dome insertions and ejections) set-up and dismantling.

- Ergonomic, one-handed and hygienic connection of bibag® (dry bicarbonate supply)

- Workflow optimisation by highly automated user assistance:
  - Multiple automated tests during preparation
  - Self-initiating functions (e.g. Ultrafiltration, OCM®, ONLINE HDF and heparinisation)
  - Numerous auto-regulating mechanisms (e.g. AutoFlow, EcoFlow, AutoSub, AutoSN)
  - ONLINE filling, degassing and rinsing – supported by the innovative FX-class® dialyser flow characteristics
  - ONLINE bolus application and blood reinfusion – no manual handling of saline rinse solution from bags or bottles!
  - Automated disinfection cycle preparing for the subsequent treatment

- Unmatched service-friendliness:
  - Superior accessibility to all parts from around the machine
  - Snap-lock technology: fast and easy exchange of components
  - Detailed technical error memory
  - Real-time hydraulic flow chart (accessible during therapy)
  - Comprehensive service program and ServiceCard
Best Therapy for your Patients
Experience more Facets of Cardioprotective Haemodialysis with the 5008 Therapy System

Fresenius Medical Care strives to improve clinical outcomes of dialysis patients.

The innovative 5008 therapy system combines Fresenius Medical Care’s technological and dialysis provider expertise and allows you to deliver the full benefits of Cardioprotective Haemodialysis.

Day by day, patient by patient.
Providing the Corridor of Certainty

Nephrologists today are increasingly confronted with medically challenging and elderly haemodialysis patients. Such patients often suffer from multiple comorbidities like diabetes, hypertension or cardiovascular disease besides renal failure.

In addition to addressing direct, therapy-related issues, nephrologists have thus to consider any potential intradialytic side effects as well as the long-term prognosis of their patients.

With the highly flexible 5008 therapy system, haemodialysis therapy and surveillance can be adapted and fine-tuned to individual needs, thereby achieving extraordinary tolerance of the treatment itself, improved Quality-of-Life and superior long-term outcome for all patients.

ONLINE Haemodiafiltration – currently the most efficient renal replacement therapy removing a broad spectrum of uremic toxins – can now be performed more general with the 5008 therapy system: It perfectly balances best therapy and practicability with an optimal use of the dialysis-relevant resources.

The numerous, superior safety features of the 5008 therapy system assure highest patient safety and provide full confidence to the entire dialysis team.
ONLINE Haemodiafiltration – The Therapy of Choice
Achieving Cardioprotective Haemodialysis

Despite significant improvements in the quality and efficacy of haemodialysis therapy in recent years, cardiovascular disease (CVD) still remains the leading cause of death for dialysis patients. Today, one in two dialysis patients still dies of CVD.

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

ONLINE Haemodiafiltration (ONLINE HDF), with its numerous positive effects on major cardiovascular risk factors (e.g. improved blood pressure and anaemia control, reduced inflammatory response and dyslipidaemia), is one of the fundamental elements of the Cardioprotective Haemodialysis concept.

The 5008 therapy system enables, for the first time, a more general application of state-of-the-art ONLINE Haemodiafiltration as it perfectly balances best therapy with optimised practicability and a thoughtful use of the dialysis-relevant resources.

The 5008 therapy system, together with a range of other premium components, ensures that the clinical benefits of ONLINE HDF are realised in a safe and efficient manner: The superior FX-class® dialysers containing the Helixone® membrane, allowing the controlled removal of a broad spectrum of uremic toxins, while ultrapure dialysate achieved by means of the DIASAFE®plus filters offers a superior safety for the patient.
Convective treatments like HDF improve patient outcome and Quality-of-Life through:

- Improved dialysis dose (Kt/V)  
- Better elimination of middle molecules without Albumin loss  
- Haemodynamic stability  
- Improved Calcium-Phosphate-Product  
- Improved anaemia control  
- Limiting inflammation and oxidative stress  
- Less side-effects and intradialytic symptoms

Latest data demonstrate that ONLINE HDF results in a significant reduction (-35%) of mortality risk compared to standard haemodialysis.

Designed to Avoid Undesirable Incidences

- Self-evident programme settings minimise operational errors  ➔ 1
- Consistent pre-setting of patient-specific treatment parameters (with PatientCard, via network (LAN) & Finesse®) ➔ 2
- Breakthrough technology safety systems (e.g. various leakage sensors)
- Clearly-structured, secured Extracorporeal Blood Module (EBM) ➔ 3
- “Emergency button” for quick response in case of emergencies ➔ 4
- Non-invasive, air-free arterial pressure monitoring ➔ 5
Patient Surveillance Systems

- **Online Clearance Monitoring OCM®:**
  - Assuring dialysis efficiency and dialysis dose (Kt/V)
  - Continuous monitoring of plasma sodium concentration

- **Therapy-defining appliances: BTM/BVM/BPM**
  - **Blood Temperature Monitor BTM:** Effective haemodynamic stabilisation and recirculation measurement \(^{(1)}\) \(6, 7\)
  - **Blood Volume Monitor BVM:** Controlled ultrafiltration for effective fluid removal with less hypotensive episodes \(^{(2)}\) \(8, 9\)
  - **Blood Pressure Monitor BPM:** Fully automated and non-invasive blood pressure monitoring (systolic and diastolic blood pressure, MAP, pulse) \(10\)

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Optimal Use of Resources
Allows Premium Therapy to Become Standard

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 sensible and sustainable use of these limited resources available for an increasing patient number.

The fact that the 5008 therapy system is a completely integrated haemodialysis system, with all its components coming from the same source, allows the realisation of numerous synergies that cannot be realised by systems compiled from diverse, separate components from different sources.

Discover the numerous intelligent and easy-to-use features of the 5008 therapy system that assist in the improvement of day-by-day dialysis care, therapy quality and long-term outcome while at the same time offering the potential to optimise the use of available resources.
Efficient and Sustainable

- Automatic adjustment and adaptation of dialysate flow to effective blood flow with “AutoFlow” \(^1\)
- Minimised dialysate and energy consumption during stand-by conditions with “EcoFlow”
- All saline solutions in bags or bottles completely substituted by ONLINE produced fluids: ONLINE priming, preparation, bolus and reinfusion
- Optimised work-flow for all operators and users
- Easy data input and documentation (Offline with PatientCard & Online with network (LAN) connection/Finesse\(^2\))
- Easy and comprehensive diagnosis of faults, easy accessibility to all hydraulic and electronic parts \(^3\)
- Highest availability and reliability
With the 5008 Therapy System, a Vision turned into Reality.

With the current issues facing the dialysis care community, we believe that the 5008 therapy system addresses the core medical and socio-economic changes and challenges of the future:
The 5008 therapy system allows us to deliver premium therapy quality to the patient with an optimal use of resources and with maximum comfort for all its users and operators.

5008 – The Sustainable Haemodialysis Therapy System.

5008 Therapy System Product Range

<table>
<thead>
<tr>
<th>Product</th>
<th>Art. Nr.</th>
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<tbody>
<tr>
<td>5008 Machine:</td>
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<tr>
<td>5008 ONLINEplus</td>
<td>M20 101 1</td>
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<tr>
<td>5008 Bloodlines:</td>
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<tr>
<td>AV Set ONLINEplus 5008 (Filling vol. 132 ml)</td>
<td>501 844 1</td>
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<tr>
<td>AV SN Set ONLINEplus 5008 (Filling vol. 167 ml)</td>
<td>501 851 1</td>
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<tr>
<td>bibag® 650g</td>
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<tr>
<td>bibag® 900g</td>
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<td>Disinfectants:</td>
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<tr>
<td>Diasteril®</td>
<td>508 564 1</td>
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<tr>
<td>Citrosteril®</td>
<td>508 535 1</td>
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<tr>
<td>Puristeril® 340</td>
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<tr>
<td>Puristeril®plus</td>
<td>e.g. 508 570 1</td>
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<tr>
<td>Sporotal® 100</td>
<td>508 542 1</td>
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<tr>
<td>Surface disinfectant:</td>
<td></td>
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<tr>
<td>ClearSurf®</td>
<td>e.g. 508 569 1</td>
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</table>
General data

Dimensions 5008
1620 x 720 x 480 x 720 mm (H x W x D)
(deep with extended concentrate rack approx. 86 cm)

Weight
approx. 135 kg

Water supply
Water inlet pressure
1.5 – 6.0 bar
Water inlet temperature
5 – 30 °C; for "integrated hot rinse" 85 to 95 °C
Max. drain height
1 m
Flush
Rinse of water supply area

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

Electrical data
Power supply
100 to 240 V AC ± 10 %, 47–63 Hz
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

External connections
Alarm output: potential free alarm outlet
(Alternating contact max. 24 V/24 W).
LAN (RJ 45) port for data exchange with Therapy Data Management System/Finesse®

Extracorporeal circuit

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

Venous pressure monitoring
Display range
-100 mmHg to +500 mmHg
Accuracy
± 7 mmHg
Resolution
5 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
with 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: 20 ml, 30 ml

Dialysis fluid circuit

Dialysis fluid flow range
Selectable
0 – 1000 ml/min (steps of 100 ml/min)
AutoFlow (selectable)
Automatic adaptation of the dialysate flow to the effective blood flow (factors adjustable)
EcoFlow
Stand-by flow of 100 ml/min (HD) during preparation and minification

Dialysis fluid temperature
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)

OCM®
Accuracy Clearance K
± 6 %

BTM (Option)
Temperature measurement
Accuracy ± 0.2 °C
Body temperature control
Allowed change rate ± 0.5 °C/h
Recirculation measurement
Accuracy ± 2 %

BVM (Option)
Relative Blood Volume (RBV)
1.7 % (absolute)
Haematocrit (Hct)
± 2.9 Hct % (if plasma protein concentration range is 60 – 85 g/l)
Haemoglobin (Hb)
± 0.8 g/dl
Temperature
0.1 °C (33.5 – 40 °C)

BPM (Option)
Display range
Systole: 30 mmHg – 280 mmHg
Diastole: 10 mmHg – 240 mmHg
MAP: 20 mmHg – 255 mmHg
Accuracy
± 3 mmHg

Bicarbonate dry concentrate
bibag®

Dialysis fluid filter system
DIASAFE® plus

ONLINEplus
ONLINE Haemo(dia)filtration
Substitution rate
25 – 600 ml/min
Accuracy
± 10 %
AutoSub
Substitution ideally matched to effective bloodflow

Balancing accuracy
± 0.1 % related to the total dialysate volume
Pressure holding test
Event controlled

Ultrafiltration
UF rate
0 – 4000 ml/h (in steps of 10 ml)
Pump volume accuracy
± 1 %
Parameters displayed
UF goal, UF time, UF rate, UF volume

Blood leak detector
Sensitivity
≤ 0.5 ml blood/min (Hct = 25 %)
flow rate 100 ml/min – 1000 ml/min

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