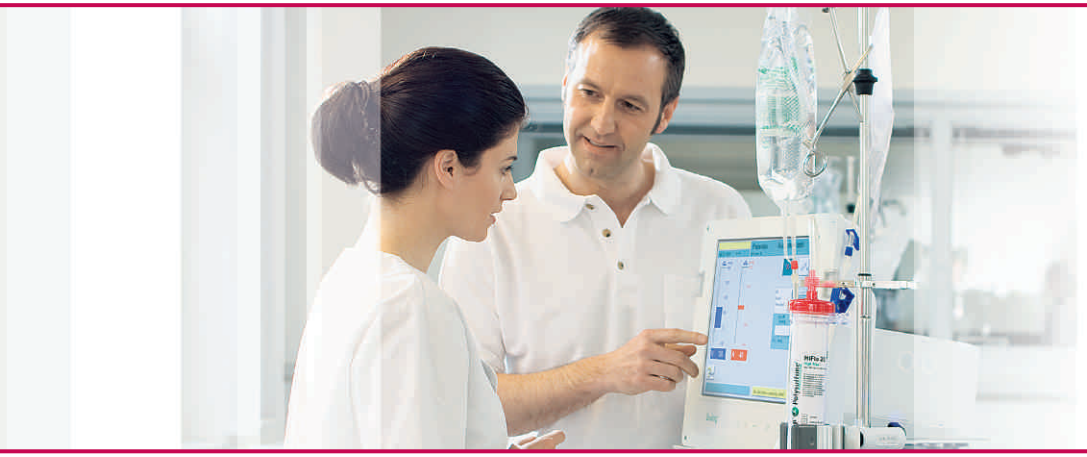
Brief Instructions for Dialog+



This brief instruction does not substitute the extensive basic instruction manual of Dialog+.

B BRAUN
SHARING EXPERTISE

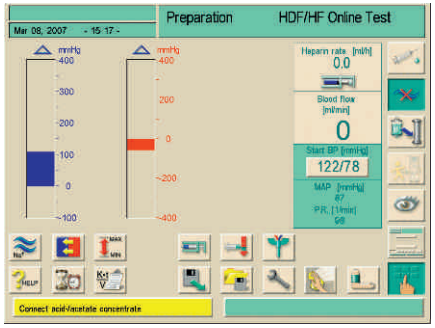
Brief Instructions – Standard Dialysis: Double Needle Therapy

Preparation

■ Switch the machine on.

Select.

The machine changes to the **Preparation** mode. The self-test of the dialysate (DFS) runs automatically.



If necessary, after disinfection, check whether machine is free from disinfectant. Use suitable indicator strips.

■ Connect concentrates and bicarbonate.

\+ Insertion of blood line systems. To fill the tubing system with NaCl, start the blood pump with the + button below the monitor. The blood pump stops automatically after a preset filling volume.

Setting of treatment parameters

Enter the treatment parameters via the **Parameter** icon.

Dialysate

Ultrafiltration

Limit values

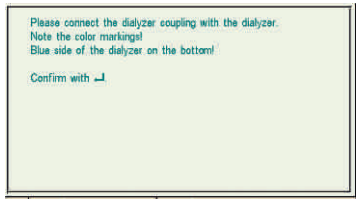
Heparin

When diskettes/Patient Therapy Cards are used, the patient parameters can be directly read in.

Check correctness of the patient data from Patient Therapy Card and confirm.

or

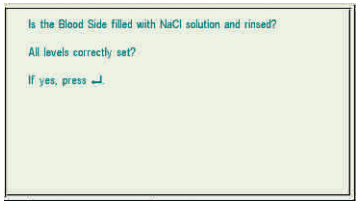
Check correctness of the patient data from diskette and confirm.



The following text is shown after a successfully completed test.

Brief Instructions – Standard Dialysis: Double Needle Therapy

Follow the instructions on the screen and confirm.



After confirmation, another window is shown.

The appearance of the window is dependent on the machine configuration.

Check the filling on the blood and dialysate sides. Follow the instructions and confirm.

Connect both patient connections for circulation to the saline bag.

The automatic self-test on the blood side starts. After completion, the machine additionally activates the UF pump for rinsing the dialysate side.

To change the rinse parameters, touch the following icon.

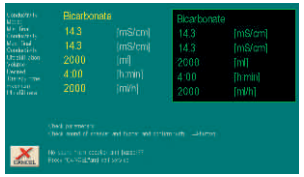
After cancellation or expiration of the rinse time, the machine automatically switches to stand-by mode (if preset in the machine configuration).

When the **Connect patient** icon is coloured, it can be switched into Therapy Mode.

Connecting the patient

Touch the **Connect patient** icon.

Two short acoustic signals sound and the **Enter** button is illuminated.



Check the patient data and confirm correct data input.

To connect the patient, connect the arterial line and start the blood pump by pressing **start/stop**.

During the connecting process, the pressure alarm limits are increased and the machine is in dialysis bypass.

If the blood system is filled with blood up to the venous red sensor, the **Patient connected** alarm is triggered and the blood pump stops automatically.

End the alarm with this button.

After connection of the patient venous line, press again this button.

Brief Instructions – Standard Dialysis: Double Needle Therapy

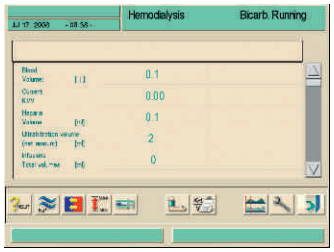
Performing the haemodialysis

Start the blood pump and adjust the blood flow with the **+** and **–** buttons on the monitor.

Deactivate the Bypass. The Bypass button is now no longer highlighted green.

Dialysis starts.

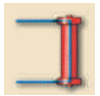
Call up the treatment parameters with the **Overview** icon.



Acknowledge alarms after checking with 1 x = tone off, 2 x = continue treatment

If necessary, minimize ultrafiltration with the **MIN-UF** icon

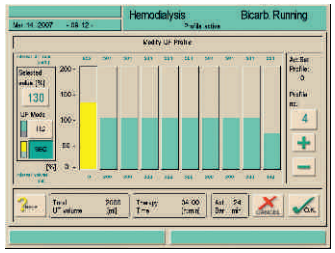
or



switch to Bypass with the **Bypass** icon.

Sequential therapy (Bergström)/UF profile

After touching the icons, the window „UF profile" opens.



It is possible to select preset UF profiles (numbered) or to create profiles individually. The desired UF rate can be set by the % button (100% = average rate) or by touching/moving a finger over the touch screen. The complete HD time is divided into 10 time intervals (bars).

For sequential phases, touch desired time interval and set UF rate of interval. The sequential phase is activated by touching the button **SEQ.** Thereby the bar will be marked yellow. Leave the window by touching the **O.K.** icon.

In sequential phases no hemodialysis is performed!

Arterial Bolus

For the easy and rapid application of NaCl 0.9% - for example in the case of a decrease of blood pressure - select the function **Arterial Bolus**. This way you can administer an exactly defined bolus.

The maximum bolus is 250 ml.

Brief Instructions – Standard Dialysis: Double Needle Therapy

To start the bolus press the **Bolus** icon.

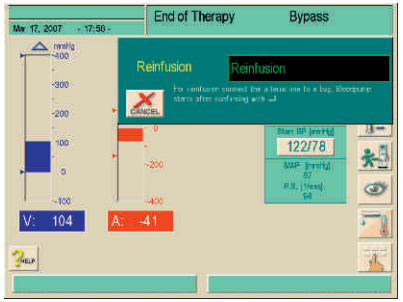
Attend to the instructions on the screen and confirm. Then check the height of the venous blood level.

End of treatment/Reinfusion

When the end of treatment time is reached, an acoustic signal sounds and the machine goes to Bypass.

Touch the **Terminate therapy** icon.
If set accordingly, the Reinfusion window opens automatically.

Otherwise, touch the **Reinfusion** icon.
The blood pump stops and the Reinfusion window is displayed.



■ Connect the patient arterial line to the saline bag.

To start reinfusion, confirm with this button. The reinfusion volume is shown.

During reinfusion, empty the bicarbonate cartridge.

■ When the venous red sensor detects sufficient saline, the blood pump stops automatically.

■ Disconnect the venous line from the patient.

Empty the dialyzer.
Follow the instructions and confirm.

Touching the **Empty dialyzer** icon deactivates the blood pump.
You cannot return to dialysis!

Depending on the basic setting, the machine automatically saves the therapy data and, when Patient Therapy Cards or diskettes are used, queries whether the therapy data are to be saved as new default values.

Save only when new setting values are to be accepted for the next treatment.

Insert the concentrate suction rods into the machine again, remove the bicarbonate cartridge and close the cartridge holder.

To switch to disinfection, touch icon and choose disinfection menu.

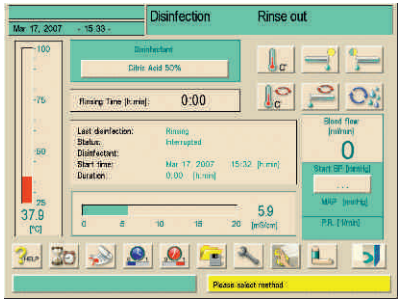
To continue see chapter disinfection.

Brief Instructions – Disinfection

Start after the completion of therapy by pressing the **Disinfection** icon

or

by selecting this item in the program selection.



Thermal

Long chemical

Short chemical

Central thermal

Central chemical

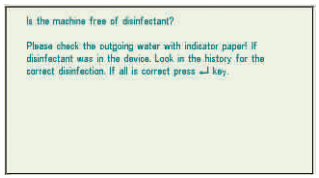
Central rinse

Start disinfection by pressing the respective icon.

The main disinfectant for chemical disinfection is preset (usually Citric Acid 50%).

Central disinfection programs include the water inlet/dialyzer outlet hose and must be timed to coincide with the RO equipment.

End of disinfection



The following information is displayed after disinfection:

Follow the instructions and confirm.

If the machine is not yet free of disinfectant, continue to rinse the machine and test again.

If the basic setting has been selected accordingly, the machine goes directly to **Preparation** mode after the end of disinfection.

Canceling a running disinfection

To cancel an already started disinfection, press the **Exit** icon

and

confirm operation.

If the machine already contains disinfectant, the required compulsory rinsing is performed automatically. If this is not the case, the screen starts **Disinfection rinsing** and a different type of disinfection can be selected, for example.

Automatic switching off and on

When the **Auto switch-off** icon is activated, the machine is switched off automatically.

To start the **Auto Off** and **Auto On** functions of the machine, activate the **Auto On** icon.

Brief Instructions – Disinfection

The respective parameters for the next disinfection are set via the fields **Time**, Type of **Disinfection**, **Disinfectant** and **Date**.

The settings are accepted with the **Activate** field.

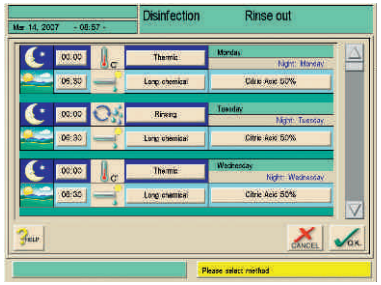
The **Auto Off** function is automatically activated by confirmation with this button.

After the successful disinfection, the machine is switched off automatically and switched on again automatically at the time specified.

Do not set the main switch on the machine to "Off"!

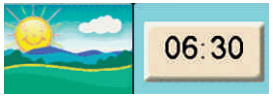
Weekly disinfection program

To set the weekly program, touch the icons.



Setting of the time for a possible **Night action** (the machine is switched off after disinfection)

or



Day action (the machine remains on after disinfection).

Setting of disinfection mode and disinfectant (e.g. Long chemical with 50% citric acid) by selection of respective field on the screen.

To save the changes, touch the **OK** icon.

Disinfection error list for the ongoing disinfection

For immediate information and troubleshooting during an ongoing disinfection, a list of all previously occurred warnings/alarms can be shown.

Brief Instructions – HDF/HF Online Therapy

Preparation

Switch on the machine.

HD/HDF/HF

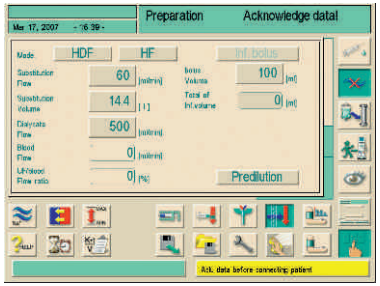
Select HDF/HF, the machine automatically changes to PREPARATION.

!

If necessary, after disinfection, check whether machine is free from disinfectant. Use suitable indicator strips.

Connect concentrates and bicarbonate. Follow the instructions for action that are highlighted yellow on the screen.

Call up the parameters for **HDF-Online** via the **Parameter** icon and the **Online** icon.



All values shown can be changed as required.

To perform an HDF in predilution mode, additionally select the Predilution field.

Set-up

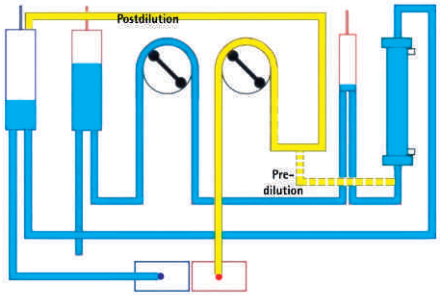
Insert the arterial and venous lines. Leave the drain bag at the end of the venous line for the time being.

In addition, insert the substitution line into the substitution pump. Do not yet connect the short end of the substitution line. Pay attention to the correct flow direction.

Now connect the patient connection of the arterial line with the connection of the substitution line which is marked red.

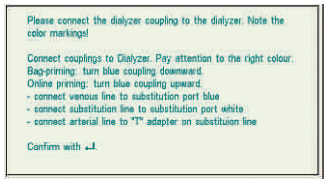
For **postdilution**: Connect the long end of the substitution line to an inlet piece of the venous drip chamber.

For **predilution**: Connect a predilution adapter between the arterial line and the dialyzer.



Brief Instructions – HDF/HF Online Therapy

Filling the system with Online solution



When the Online solution has been processed and tested, a white information field is shown.

Follow the instructions on the screen and confirm.

■ Adjust the level in the venous drip chamber.

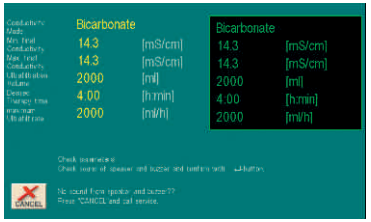
■ The dialyzer is filled with a preset rinse volume and rinsed. The blood inlet is at the bottom.

■ Confirm the information field ("Is the blood line system filled with NaCl..."). The appearance of the window depends on machine configuration. Turn the filter so that the dialysate inlet is at the bottom. The filter should be turned after the rinsing volume is reached.

■ If required, increase the level in the venous chamber.

When the **Connect patient** icon is active, the machine has been successfully tested and is ready for therapy.

Connecting the Patient



After touching the **Connect patient** icon, the following screen is shown

and two short tones are to be heard and the button is lit.

Check the patient data and confirm correct data input.

■ Connect the arterial line to the patient. The system is filled with blood.

! A manual stop of the blood pump, an alarm or deactivation of **Bypass** causes the cancellation of the **Connect function** via the return port (recognizable by the rising venous pressure).

To be able to continue connection, activate the **Connection** icon in the HDF parameter window.

■ The venous red sensor automatically stops the blood pump.

Brief Instructions – HDF/HF Online Therapy

Now remove the patient venous line from the return port and connect with the needle to the patient. Close the cover of the return port until it latches.

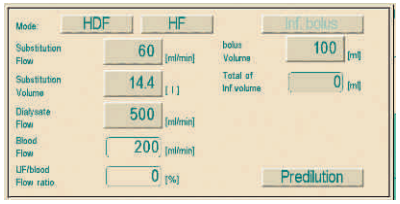
Start the blood pump again and set the blood flow. Only after the desired blood flow is reached, deactivate the bypass to reduce the risk of filter clotting.

The HDF therapy begins and the therapy time runs. The substitution pump starts to run automatically, all monitoring devices are activated.

BYPASS or MIN-UF during a therapy

If **Bypass** is activated during a treatment, the substitution pump stops. If **MIN-UF** is activated during a treatment, the substitution pump continues to run.

UF/blood flow ratio



To draw attention to excessive coagulation of the blood, the ratio **Blood flow : Total UF** is automatically calculated and displayed. This value should be between 25% and 28%. When 30% is reached, you will be informed with a warning (dependend on machine configuration).

Bolus output with HDF-Online

If necessary, administer a Bolus (50 – 250 ml) with the solution produced by the machine.

To start the bolus, change to the HDF-Online parameter window and press the **Inf. Bolus** button.

Confirm. The administered bolus volume is displayed.

Deactivation of HDF therapy/change to HD or HF

During treatment, switch off HDF by selecting the HDF field again and change to HD or select HF. The dialysate and substitution flows are automatically adapted.

End of treatment

Touch the **Terminate therapy** icon. If set accordingly, the reinfusion window opens automatically.

For reinfusion with Online solution, connect the arterial end to the connection of the substitution line which is marked red and confirm. It can also be closed off with a 0.9% NaCl bag as usual.

Brief Instructions – HDF/HF Online Therapy

The blood pump continues to run until the venous red sensor detects saline solution or the blood pump is stopped. The administered reinfusion volume is shown.

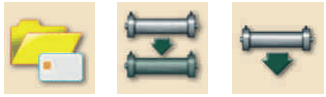
Empty the bicarbonate cartridge and the dialyzer only when the patient has been disconnected from the machine.

Save the dialysis data and start disinfection.

Start of disinfection after therapy end or after filter change by touching the **Disinfection** icon and selection of the disinfecion mode.

To continue see chapter disinfection.

Disinfection/Online filter change



By touching the **Folder** icon, the symbol for the **Online filter change** and the **Filter draining** icon empty and replace the filter. A filter change must always be followed by a disinfection.

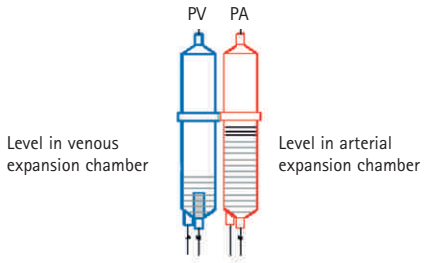
Brief Instructions – Single-Needle Cross-Over Therapy (SN-CO)

Set-up

- Insert arterial and venous line system:
  - Route the lines leading to the patient through the respective clamps.
  - Do not yet insert the line segment of the 2nd (venous) blood pump. Make sure that the 2nd pump segment is **above** the pump.
  - Connect the PBS pressure sensor and the other pressure sensors.

Filling

- Adjust the liquid level in the arterial and venous chambers according to the drawing.

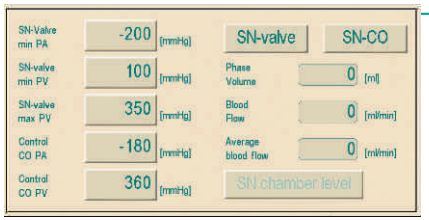


Connecting the patient

- Change to therapy mode by touching the **Connect patient** icon. Confirm the patient data!
- Start the blood pump, fill the system with blood and then connect the venous line to the patient.

Machine setting

- Touch the **Parameter** icon as well as the **SN** icon.



- Select **SN-CO**.

  The preset limit values for the arterial and venous control pressure are set automatically.

- Insert the 2nd pump segment into the venous pump.

> **i**
>
> The connection of the PBS pressure transducer should always be performed before the blood-side self-test. If the setting of SN-CO should be required after begin of treatment, confirm the PBS values shown then.
>
> It is also possible to select SN-CO before connecting the patient.

Recommendations for blood pump rate and phase volume

- Start the blood pump with 100 – 120 ml/min when connected to a fistula.
- When connected to a central venous catheter, start with 150 ml/min.

Brief Instructions – Single-Needle Cross-Over Therapy (SN-CO)

Target value for phase volume, approx. 30 – 35 ml

Check of the phase volumes, blood flow and pressure values via the **SN** icon

Optimum control pressures:	Arterial mmHg	Venous mmHg
Central catheter / good fistula	bis -200	360 bis 390
Fragile fistula	bis -150	300
Initial punctures	-120 bis -150	250 bis 300

Recommended control pressures

Phase volume

By setting control pressures that are far apart, a larger phase volume is achieved, closer limits result in a smaller phase volume.

If the phase volume is too small, slowly decrease the blood pump speed in small steps.

The phase volume reacts to:

- Change of blood flow
- Change of control pressures
- Height of blood level in the chambers
- Pressure changes in the shunt
- Stop of blood pump when alarms occur

During dialysis, monitor the fluid in both chambers (if required, regulate fluid level) and the size of the phase volume (if necessary, correct blood flow).

Warnings and alarms

The same as for the TMP window, the phase volume is monitored with relative and absolute limits that adjust themselves automatically. If the lower relative phase volume is undercut, an alarm is triggered with older software versions. If this warning occurs frequently, change the blood flow for a short time. This renews the setting of the limit window.

The warning **Lower relative phase volume too low** is obsolete as from software versions ≥ 8.20

For all other exceeding of limits, an alarm is triggered.

In case of phase volume alarms always check the system for air inflow, confirm only after checking. Optionally correct blood flow.

Termination

Leave the 2nd pump segment in the venous blood pump.

Activate the **Reinfusion** icon to extend the alarm limits.

Check the height of the venous blood level and adapt as required.

Terminate the therapy in the usual way.

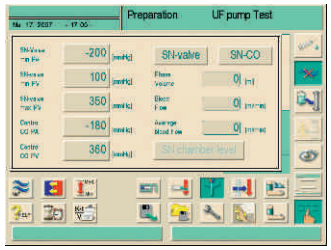
Brief Instructions – Single-Needle Valve Therapy (SN-V)

Setup and filling

- Insert the arterial standard line; lead the arterial line through the arterial clamp (SAKA).
- Use a special venous line for the SN valve with 100 ml pressure compensation chamber, as this enables a higher phase volume and thus a clearly increased efficiency of treatment. If the SN valve dialysis is not planned, the standard line can remain in place. For efficiency improvement, the venous level must be reduced here before the beginning of the SN valve therapy.
- Fill the liquid level in the venous chamber only up to approx. 40% so that an adequate phase volume can be achieved.

Machine setting

Touch the **Parameter** icon as well as the **SN** icon.



Select **SN valve**.

- The preset limit values for the arterial and venous control pressure are entered automatically.

The SN valve mode can also be activated during treatment.

Connecting the patient

Change to therapy mode by touching the **Connect patient** icon. Confirm patient data!

- Connect the arterial line and fill the system with blood; the SN valve mode has already been automatically activated.
- Start the blood pump depending on the vein condition and increase slowly.

Phase volume

By setting control pressures that are far apart, a larger phase volume is achieved, closer limits result in a smaller phase volume.

Brief Instructions – Single-Needle Valve Therapy (SN-V)

Recommendations for phase volumes

With small venous air trap (30 ml): 12 – 18 ml

With large venous pressure compensation chamber (100 ml): 15 - 25 ml

The phase volume reacts to:

- Change of blood flow and control pressures
- Height of blood level in venous chamber
- Pressure changes in the shunt

In addition, the phase volume can be optimized by adapting the BP speed. If the difference between the control pressures is smaller, the phase volume becomes smaller, however, switching to the arterial phase is achieved quicker and the medium blood flow thus increased.

Control and monitoring

The SN valve has a combined pressure and pressure/time control. The optimum and adapted return time is set automatically.

It is possible that the lower arterial limit value (min PA) has to be adapted.

Setting of control pressures:

- min PV 120 - 150 mmHg
- max PV 350 mmHg

Termination

After selection of the **Terminate therapy** icon the Reinfusion window is opened automatically if preset accordingly.

Otherwise, it must be manually selected so that reinfusion starts in double-needle mode.

The pressure limit value windows expand and the reinfusion volume is displayed.

Before start of the reinfusion, always check the height of the venous blood level and increase the blood level, if required.

Disconnect the patient as usual.

Overview of Icons

Icons are control buttons on the touch screen used for operating the dialysis machine. Depending on the displayed window, different icons are available, which all represent a specific action. By touching an icon, the respective action is carried out.

A list of the most important icons is provided below.

Leave window and accept data

Leave window without accepting data

Call up help function for explaining the icons

Call up history of current disinfection

Call up service screen

Switch off all icon functions for 10 sec to allow cleaning of monitor

Set brightness of monitor

Leave current window

Call up overview

Call up respective parameter window

Set treatment parameters

Return to program selection

Create (format) floppy disk/therapy card

Read patient data from disk/therapy card

Save patient data to disk/therapy card

Select further setting options

Reduce value

Increase value

Overview of Icons

Red symbol: error symbol during reading of patient data from floppy disk/therapy card

In profile window (except for UF profile): open numerical keypad for resetting the profile to a setting

Call up key pad for entering numerical values

Give heparin bolus

Give arterial bolus

Call up window for setting arterial bolus

Call up dialyzer rinsing program with simultaneous ultrafiltration

Empty dialyzer – dialysate is siphoned out of the dialyzer

Call up and set heparinization data

Reset filter, empty (option DF filter)

Filter data (only active if option DF filter has been installed or if the machine is equipped with HDF-online)

Dialysis on main connection – dialysate flows through dialyzer

Dialysis Bypass – no dialysate in dialyzer

Connect patient to online substitution

Start Reinfusion

Call up and set substitution data (option)

Call up bag change HDF (option)

Change or empty bicarbonate cartridge (option)

Change to **Therapy** mode

Change to **Therapy end** mode

Overview of Icons

Disinfection from water supply – inlet

Disinfection from water supply – discharge

Call up and set dialysate data

Activate stand-by

Call up and set ultrafiltration data

Call up minimum ultrafiltration

Call up and set pressure limits

Call up single-needle selection and settings

Call up ultrafiltration profiles

Call up profile settings for the respective parameter

Call up linear profile in case of specified start and end values

Call up exponential profile in case of specified start and end values

Start brief disinfection/cleaning

Start disinfection program

Start central rinsing

Activate automatic switch-on of dialysis machine at the programmed time

Activate automatic switch-off of dialysis machine after disinfection

Change settings for HDF-/HF-online

Call up disinfection history of last 150 disinfections

Delete ABPM measured values list (option)

Overview of Icons

Start ultrafiltration without dialysate (sequential therapy)

Start ultrafiltration with dialysate

Timer / stop watch

Suppressed warning sounds during preparation

CE 0123

W. 03.08.08/1 No. 708 0125A Edition: 08/2008

B. BRAUN
SHARING EXPERTISE

B. Braun Avitum AG

Schwarzenberger Weg 73–79
34212 Melsungen
Germany
Tel +49 (56 61) 71-26 24
Fax +49 (56 61) 75-26 24

e-mail: dialysis@bbraun.com
www.bbraun-dialysis.com