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ص.ب: ٤٨٥٧٧، دبي، ا.ع.م.

هاتف: ٠٤ ٢٦٧ ٨٨٦٦ - فاكس: ٠٤ ٢٦٧ ٨٨٥٥

ص.ب: ٤٥٧، الشارقة، ا.ع.م.

هاتف: ٠٦ ٥٦٥ ٨٨٦٦ - فاكس: ٠٦ ٥٦٥ ٦٦٩٩



OPERATING INSTRUCTIONS FOR BBRAUN INJECTOMAT **SYRINGE PUMP**

BBRAUN INFUSION AND SYRINGE PUMP COMMON INSTRUCTIONS

- Make sure the unit is firmly in position. This applies in particular to use with infusion stands or wall rails.
- Always check the audible and visual alarms prior to use.
- Patient connection should only be made when the device is switched on.
- Interrupt connection when changing syringe to avoid danger of incorrect dosage.
- Make sure the syringe/tubings is correctly positioned.
- Whenever the inputs are made, value displayed is to be compared to value entered. Do not use unit unless the values coincide.
- Make sure that there are no kinks in tubing; ensure unimpeded flow.
- Make exclusive use of disposables. Replace after 24 hours.
- Use only compatible combinations of equipment, accessories, working parts and disposables.
- The infusion lines should be placed in such a way that the syringe cannot be pulled out of its fixation because of uncontrolled drawing.
- Cleaning should be carried out with soap and water solution.
- For disinfection use only surface disinfectants.

Overview

Function keys

The function of the 4 keys is governed by the respective situation. This is indicated in the display above. Thus, for example:


SF Call up special functions

+ / - Increase /Decrease

END Exit from this selection and return to

normal display

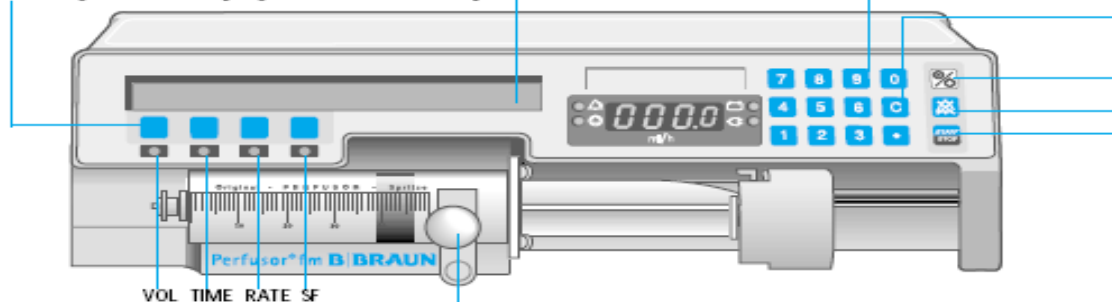
-- Key has no function

If  lights: Press key again to confirm entry.

Display and user prompting

All important data are given in plain language or can be called up.

Display with unobtrusive green light for optimum legibility. (Mains only. With battery only during unit operation.)



VOL Infusion Volume

Press key beneath VOL.

Enter volume (between 1 and 999.9 ml) and confirm entry.


TIME Infusion time

Press key beneath TIME.

Enter time (e.g.: 50 min. as 5 0 or 2 h 30 min as 2 3 0) and confirm entry.

RATE Delivery rate

Press key beneath RATE to confirm calculated rate from volume and time input.

Press key beneath RATE* (if  lights).

* Only displayed with rate calculation.

Syringe holder

Holds syringe in position. To remove syringe: Pull and move to the left.

SF Special functions

If released, successive call-up of: Dosage Calculation / Bolus function / Standby function / Drug selection / Occlusion pressure / Battery capacity / Data lock / Contrast / Date, Time.

Settings (Service only)

- ▶ Ward code (displayed when unit switched off)
- ▶ Range of syringes
- ▶ Range of drugs
- ▶ Deactivation of individual special functions



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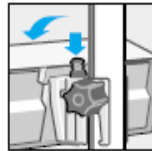
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Pole clamp, back
Attach to infusion stand. Fit Perfusor fm from above and engage. To release, press black button.

Aluminium casing
Easy upkeep, drip-proof and resistant to disinfectant.

Memory-card window
Scope of functions can be extended for example by way of a PCA memory card (please ask for information).

Keypad for input

Correction/CLEAR key
Resets display to 000.0

Main switch ON/OFF
Press for 2 seconds to switch off.

Remaining battery capacity
With device switched off and power lead disconnected: Briefly press . Battery capacity (and ward if envisaged) is indicated after 3 seconds.

Suppress alarm tone for 2 min

START/STOP
Start/interruption of infusion, e.g. for altering delivery rate.



Delivery rate

Alarm Indicator
Lights in alarm situation.

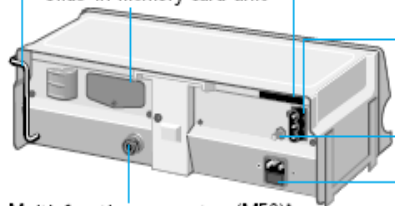
Operating Indicator
Indicates delivery.

Battery Check
Lights when using battery. Flashes with battery pre-alarm.

Mains Check
Lights during mains operation. Battery is charged.

Handle for easy transport

Slide-in memory card unit



Multi-function-connector (MFC)*
Connecting for staff call, ambulances (12 V DC) and interface for fm anaesthesia/intensive.

* As of unit no. 20001. Previously separate connections for staff call and 12 V supply.

Infrared interface
For operation with fluid manager system.

Power supply
For operation with fluid manager system.

Potential equalisation
Connect with CF-mode.
 CF-application (cardiac floating), defibrillator-proof

Mains connection
Connection for power lead. Automatic switching to battery in the event of power failure. Mains fuses directly above mains connection.



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Operation

Start of infusion

- ▶ **Ensure reliable installation**
Connect up staff call if appropriate.
- ▶ **Switch on unit with $\text{O}/\text{⊙}$.** A short self-test is performed. Drive moves into position.
- ▶ **Open syringe holder**
- ▶ **Insert syringe**
Grip plates of syringe must be vertical and held securely by locator (see diagram). Close syringe holder.
- ▶ **Grip syringe**
Keep key beneath << pressed. Drive advances and grips pressure plate of syringe, then release key. Type of syringe indicated must coincide with syringe inserted.
- ▶ **Prime**
Press key beneath ON until infusion set has been primed (pressing key once = 1 ml). Then press key beneath END.
- ▶ **Connect up to patient**
- ▶ **Set delivery rate**
Values between 0.1 and 200 ml/h. Check display! Correction: Press C, enter rate again.
Choose additional settings as described below.
For automatic rate calculation: Do not enter rate!
- ▶ **Press START**
Infusion is implemented. Running symbol appears on display and green operating indicator lights.

Syringe change

To avoid incorrect dosing, always interrupt patient connection when changing syringe.

- ▶ **Press STOP**
Green operating indicator goes out. Close patient access.
- ▶ **Remove empty syringe**
Open syringe holder. Press key beneath >>, drive moves backwards.
- ▶ **Insert new syringe**
Grasp plunger, vent and connect up to patient as described.
- ▶ **Press START**

End of Infusion

- ▶ **Press STOP**
Green operating indicator goes out. Close patient access.
- ▶ **Remove syringe**
Open syringe holder. Press key beneath >>, drive moves backwards.
- ▶ **Switch off**
Press $\text{O}/\text{⊙}$ for 2 seconds.



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Additional settings

To Change the Delivery Rate

- ▶ Press STOP.
- ▶ Press C. Display is reset to 000.0.
- ▶ Enter new delivery rate.
- ▶ Press START. Infusion is implemented. (Alarm is given if there is no restart within 2 minutes)

To Change the Rate Without Interrupting the infusion (Function can be deactivated by our Service staff)

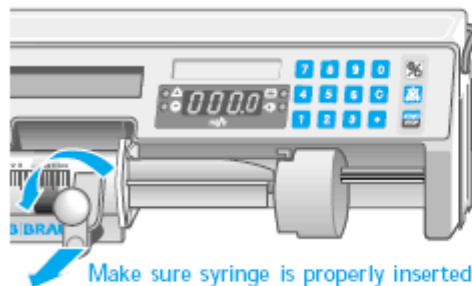
- ▶ Enter new rate.
- ▶ Press key beneath RATE. Rate is transferred to red display. Unit operates at new rate. (If new rate is not confirmed within 10 s, infusion continues at old rate)

Target Volume (Volume Pre-selection)

The target volume will be administered independent on the infused volume.

- ▶ Press key below VOL.
- ▶ Enter target volume via keypad and confirm with VOL (values between 0.1 and 999.9 ml). After confirming the display shows the residual volume instead of the target volume.

Note: When target-/residual volume has been administered, the pump stops and goes into alarm. Acknowledge alarm and press VOL. Clear displayed residual volume with C (in display appears ----.- ml). Confirm this with VOL or enter new target volume. To continue infusion,



the target volume has to be displayed as ----.- ml or a new target volume has to be set.

Target Time (Time Pre-selection)

▶ Press key beneath TIME.
 Enter target time via keypad and confirm with TIME (50 min. = 5 0; 2 h/30 min. = 2 3 0). After confirming instead of the target time the residual time is displayed.

- ▶ Correction: Press C. Display --h --m. New entry.

Note: When time has been expired, the pump stops and goes into alarm. Acknowledge alarm and press TIME. Clear displayed residual time with C (in display appears --h -- m). Confirm this with TIME or enter new target time.

Rate calculation

Targeted delivery rate must be 000.0.

▶ Enter volume and time. The delivery rate is calculated automatically and displayed (rounded to one decimal place).

- ▶ Confirm RATE.
- ▶ Press START. Infusion is implemented.

Clear Time/Volume

- ▶ Press STOP, then key beneath VOL or TIME.
 - ▶ Press C to clear.
- 1x: Target Vol/Time = ----.-ml / --h--m
 2x: Infused Volume/Real Time = 0.0ml /00h00m

Status Request

Only when infusion is running.

- ▶ Press 1 x resp. 2 x key below INFO for actual values. The display disappears after 10 sec or after all information has been requested.
- ▶ Press x times key below INFO for displaying syringe type, battery capacity in h and min as well as hours of operation.


Set rate is automatically reduced if required for type of syringe being used.

Overview

Function keys

The function of the 4 keys is governed by the respective situation. This is indicated in the display above. Thus, for example:

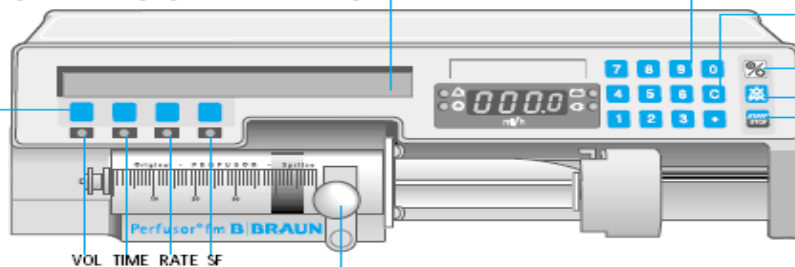
- SF Call up special functions
- + / - Increase /Decrease
- END Exit from this selection and return to normal display
- Key has no function

If  lights: Press key again to confirm entry.

Display and user prompting

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Display with unobtrusive green light for optimum legibility. (Mains only. With battery only during unit operation.)



VOL TIME RATE SF

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RATE Delivery rate

Press key beneath RATE to confirm calculated rate from volume and time input.

Press key beneath RATE* (if  lights).

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Syringe holder

Holds syringe in position. To remove syringe: Pull and move to the left.

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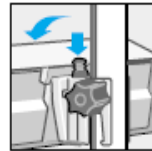
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Main switch ON/OFF
Press for 2 seconds to switch off.

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With device switched off and power lead disconnected: Briefly press . Battery capacity (and warn if envisaged) is indicated after 3 seconds.

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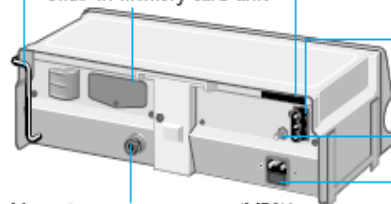
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- ▶ Press START

End of Infusion

- ▶ Press STOP
Green operating indicator goes out. Close patient access.
- ▶ Remove syringe
Open syringe holder. Press key beneath >>, drive moves backwards.
- ▶ Switch off
Press for 2 seconds.



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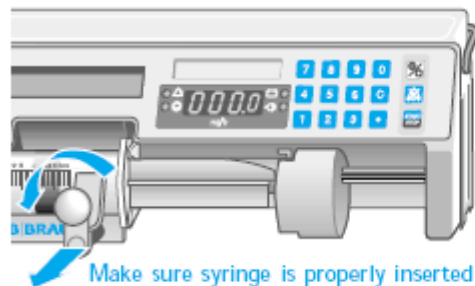
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Note: When target-/residual volume has been administered, the pump stops and goes into alarm. Acknowledge alarm and press VOL. Clear displayed residual volume with C (in display appears ----.- ml). Confirm this with VOL or enter new target volume. To continue infusion,



the target volume has to be displayed as ----.- ml or a new target volume has to be set.

Target Time (Time Pre-selection)

- ▶ Press key beneath TIME.

Enter target time via keypad and confirm with TIME (50 min. = 5 0; 2 h/30 min. = 2 3 0). After confirming instead of the target time the residual time is displayed.

- ▶ Correction: Press C. Display --h --m. New entry.

Note: When time has been expired, the pump stops and goes into alarm. Acknowledge alarm and press TIME. Clear displayed residual time with C (in display appears --h -- m). Confirm this with TIME or enter new target time.

Rate calculation

Displayed delivery rate must be 000.0.

- ▶ Enter volume and time. The delivery rate is calculated automatically and displayed (rounded to one decimal place).
- ▶ Confirm RATE.
- ▶ Press START. Infusion is implemented.

Clear Time/Volume

- ▶ Press STOP, then key beneath VOL or TIME.
 - ▶ Press C to clear.
- 1x: Target Vol/Time = ----.-ml / --h--m
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Status Request

Only when infusion is running.

- ▶ Press 1 x resp. 2 x key below INFO for actual values. The display disappears after 10 sec or after all information has been requested.
- ▶ Press x times key below INFO for displaying syringe type, battery capacity in h and min as well as hours of operation.

Set rate is automatically reduced if required for type of syringe being used.