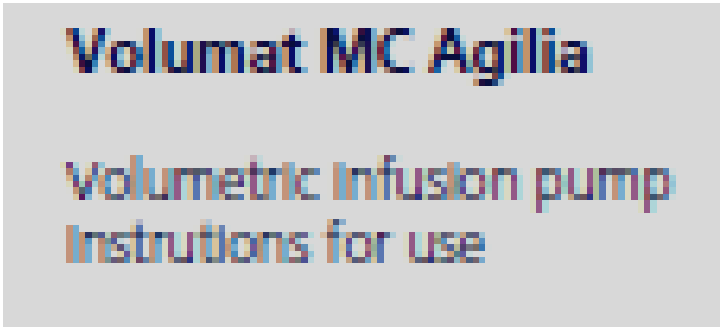
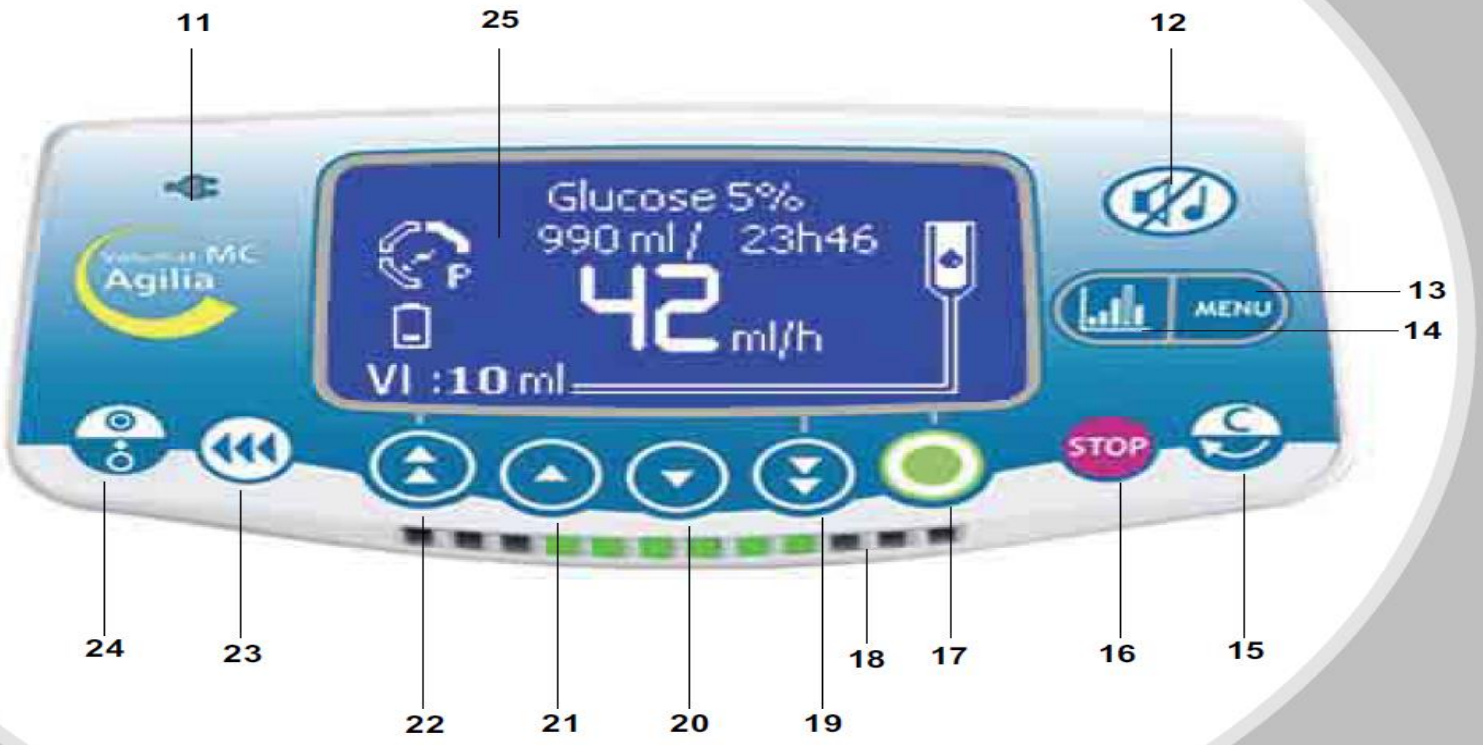
Using the Volumat MC Agilia volumetric infusion pump: Selections from the manufacture's user manual.

April 2020 A.N. Thomas



1 -	Handle	**5 -**	Infrared cell	**9 -**	Fixing button
2 -	Pump door	**6 -**	Mains power	**10 -**	Drop sensor connection socket
3 -	Door lever	**7 -**	Communication port and DC power input-output		
4 -	Assembly bolt	**8 -**	Fixing clamp		



11 - Mains indicator
12 - SILENCE ALARM
13 - MENU
14 - Graphic Function
15 - Correction/Back
16 - STOP/PAUSE
17 - OK/Start/Enter
18 - Indicator lights (LEDs)
19 - Fast decrement
20 - Decrement
21 - Increment
22 - Fast increment
23 - BOLUS or PRIME
24 - ON/OFF
25 - Monitoring screen
(see page 12)

Using the fixing clamp

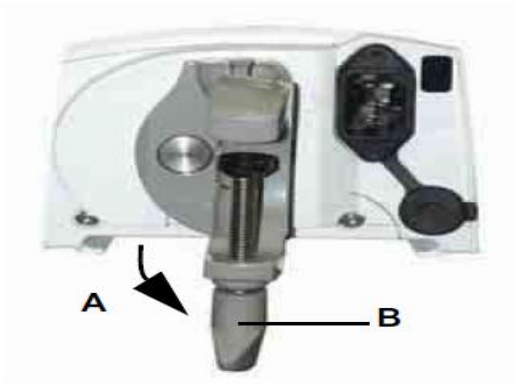
The fixing clamp is only orientable when closed against the pump. It is maintained in its vertical or horizontal position with the fixing button.
The following images show how to modify the pump installation, from a pole to a rail position.

❶ Unscrew the clamp screw (A) and disengage the device from the pole. Push the fixing button (B).

❷ Fold the fixing clamp against the pump.
This is the recommended position for the fixing clamp when the device is placed on a flat surface.

❸ Rotate the fixing clamp downward through 90 degrees.

❹ Move the fixing clamp outward (A). The fixing button is released automatically. Engage the device on the rail and use the clamp screw (B) to secure it.



Installing the device

❶ Position the device securely on the rail, pole or flat surface and connect to the mains supply. The Volumat MC Agilia can operate with its battery, but the mains supply should be used under normal conditions to ensure the battery is charged. The mains supply indicator lights up (yellow) when power is supplied by the mains or an external supply.

❷ Proceed with the User test, see page 50. The user test performs a complete alarms and safety features check. It is recommended, if the device has not been used recently, and is mandatory in some countries to fulfill local legal requirements before each use.

Preparing the infusion set

❶ From the Volumat lines range, choose the infusion set that best suits your protocol.

❷ Prepare the solution container (bag/bottle) with its associated infusion line according to local facility procedures.
Caution: The infusion set and the solution container must be in normal temperature conditions: +18°/+30°C.

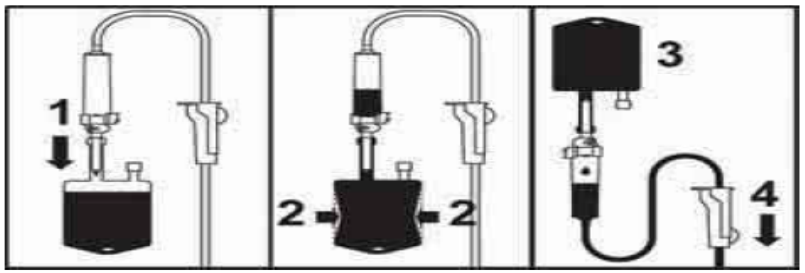
Purging the set used with a bag or a bottle

❸ **With a bag...**

1. Introduce the spike right down into the bag (roller clamp open, air inlet closed).
2. Press the bag in order to remove the air, and fill the drip chamber up to 1/2 to 2/3 of its capacity.
3. Hang the bag upside down, and let the liquid flow into the set.
4. Once the set is completely primed, close the roller clamp and check absence of air bubble.

... or a bottle

1. Introduce the spike right down into the bottle (roller clamp open, air inlet closed)
2. Close the roller clamp.
3. Hang the bottle upside down then press the drip chamber in order to fill it up to ~ 1/2 of its capacity.
4. Open the roller clamp.
5. Open the air inlet, and let the liquid flow into the set.
6. Once the infusion set is primed, close the roller clamp and check absence of air bubble.



Installing the tubing set in the pump

❶ Open the pump door by lifting the door lever.
Note: The pump automatically switches on when connected to mains (see Ward option [Par 28], page 48). If not, press the key.
An **auto-test** checks the functionality of the pump. Make sure that all LEDs and buzzers are activated. Once the auto-test is OK, a message is displayed to indicate that you can install the tubing set.

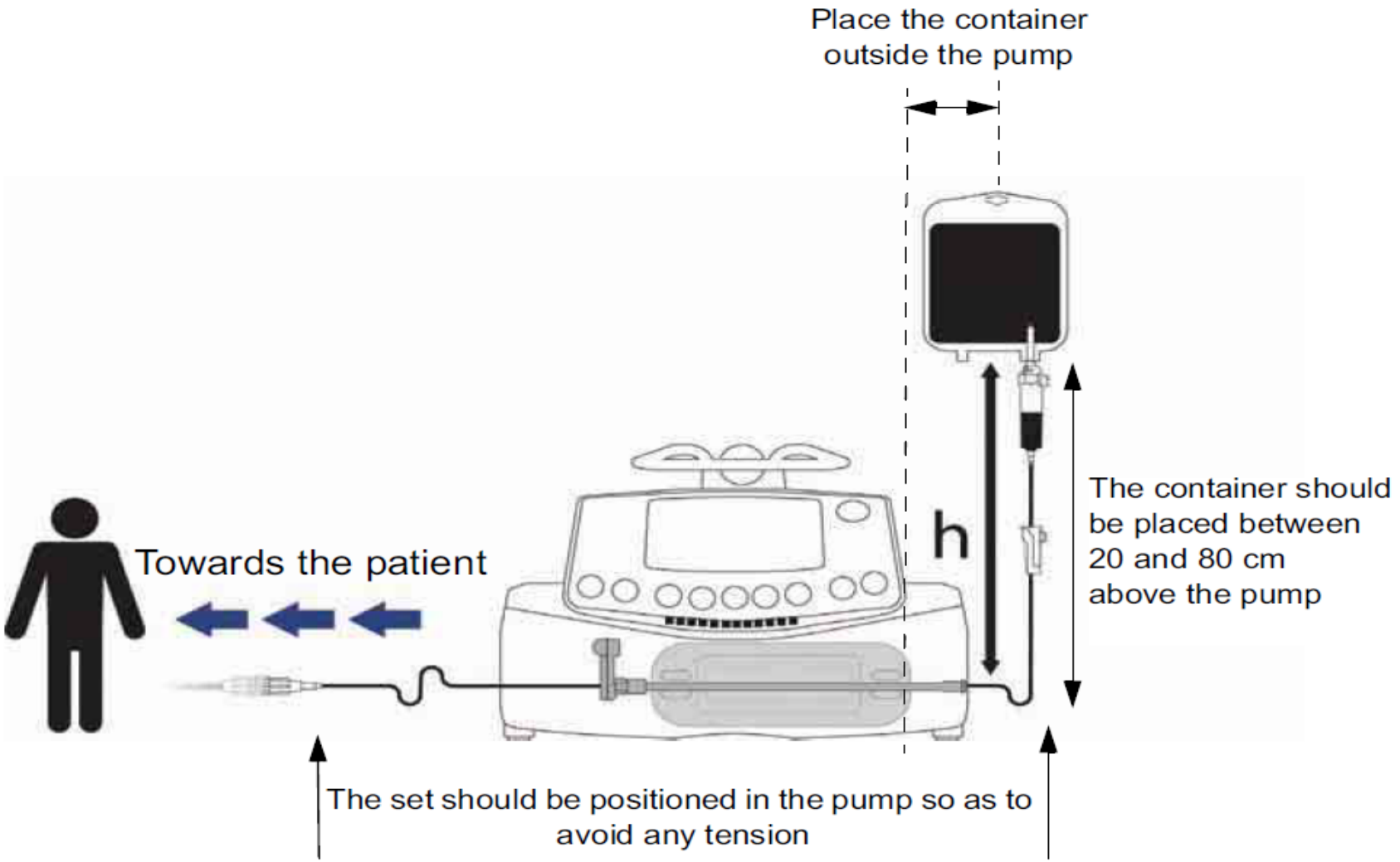
❷ 1. Align the tubing set horizontally along the tube guides so that the green connector is positioned to the right (green) and the blue clamp is positioned in front of the clamp guide (blue).
2. Insert the green connector in the green slot.
3. Position the blue clamp in its blue slot and then push the clamp to locate the spherical hinge into place.
4. Ensure that the tube is in the left tube guide, then push the door lever to close the pump door.

❸ The **Occlusivity Check System** (OCS) automatically clamps the line, activates real pumping and checks the rise in pressure. The OCS test verifies the circuit and pump occlusivity to secure the pump against a risk of free flow.

❹ When the OCS test is successful, the infusion mode defined in the options is displayed (to program the infusion, see next page).

Installing the tubing set in the pump

The final installation should look like this:



Monitoring screen

Pressure level
The arrow indicates the pressure level.
For details, go to page 53.

VTBI: Volume to be infused. It decreases during infusion. To modify it, press <MENU> then select "VTBI".

Infusion **time**. It decreases during infusion.

Infusion in progress.
Infusion indicator. Speed is related to flow rate.

Drop sensor presence indicators.
Turns off when a drop is detected.

Battery level

VI: Volume infused. It increases during infusion. To clear it, press the MENU key then select "ml?".

Infusion flow in progress. You can always modify it, whenever necessary, by simply pressing the increment/ decrement keys, and then **OK**.

4. Operations

No drug name and flow rate ml/h modes

The V/R infusion mode and No drug name programming mode are described. For another infusion mode, go to page 14; for another programming mode, go to page 25 or page 26.

1 - Flow rate/Start...

■ Choose flow rate ml/h mode (for Dose rate mode, refer to page 20) then press **OK**.

2 - Volume selection

■ Use the arrows to select the volume to be infused (VTBI), then press **OK**.

Note: Use the fast increment key to increment VTBI per predefined levels (1 ml, 10 ml, 20 ml, 50 ml, 100 ml, 250 ml, 500 ml, 1000 ml,...).

Caution: the volume setting must be the closest (less or equal) possible to the actual volume of the container. All added or removed volumes must be taken into account, including the volumes of fluids contained in the set and lost during priming that must be removed from the volume to be infused (~ 25 ml).

3 - Flow rate selection

■ Use the arrows to modify the flow rate as required, then press **OK**.

Note: The infusion time is calculated automatically and adjusted according to the displayed flow rate.

4 - Starting the infusion

■ Open the roller clamp. Check that there is no free flow or air remaining inside the infusion line.

■ Connect the set to the patient via the IV infusion set according to local facility procedures.

■ Press **Start** to start the infusion or **C** to modify the Volume/Rate selection.

Other infusion modes in flow rate ml/h

The infusion mode set by default is displayed, but you can select another infusion mode (Volume/Time/Rate, Volume/Time, Time/Rate, Simple rate, Ramp, Sequence or Drops/min), provided it is preselected in the Ward option [Par 29] (see page 48).

Note: The infusion mode menu is accessible before starting the infusion and in <STOP> mode.

1 - Menu selection

■ Press the MENU key to display the Infusion mode screen. If it does not appear at first, use the arrows to select "ml/h".

■ Press **Enter**.

2 - Infusion mode selection

■ In the Infusion mode screen, use the arrows to select a new infusion mode, then press **OK**.

Note: New ? is displayed on the screen if you choose the current mode. Press this key to set new parameters.

3 - Volume/Time/Rate

■ Select a volume to be infused (VTBI), then press **OK**.

■ Select a time and press **OK**.

■ Select a flow rate and press **OK**.

■ Press **Start**.

Note: If you modify the flow rate, the infusion duration is automatically calculated and readjusted according to the displayed flow rate.

or Volume/Time

■ Select a volume to be infused (VTBI), then press **OK**.

■ Select a time and press **OK**.

■ Press **Start**.

Note: The flow rate is calculated automatically and can be modified directly only during infusion.

Drug labelling mode

Caution: Drug labelling is available only if authorized in the the Ward option [Par 22] (see page 48) and preselected in the User option [User 9] (see page 46).

1 - Drug selection

- Start the pump. The Drug screen appears.
- Use the arrows to select a name in the Drug list, then press **OK**.

Note: Select "Drug X (ml/h)" or "Drug X (dose)" if the drug name is not in the predefined drug list.

2 - Define the infusion

- Infusion adjustments can be made as described in Operations on page 13.

Vigilant Drug'Lib mode

Vigilant® Drug'Lib is the safest and simplest mode to administrate a drug via the Volumat MC Agilia. You need to select a drug from a drug library in which the drugs have been predefined with all their infusion parameters. To define a drug library, use Vigilant® Drug'Lib for Agilia software.

Caution: Vigilant DrugLib is available only if authorized in the Ward option [Par 22] (see page 48) and preselected in the User option [User 9] (see page 46).

1 - Drug selection

- Start the pump. The Drug screen appears.
- Use the arrows to select a drug name in the Drug library, then press **OK**.

Note: The Drug library is preselected in the Ward option [Par 17] (see page 47).

2 - Drug information

- Depending on the drug selected, an informative screen may appear. If the information confirms the patient's needs and the infusion provided, press **OK**.
- Infusion adjustments can be made as described in Operations on page 13.

Note: Fields and selected values may be limited according to drug parameters defined by the Vigilant® Drug'Lib.

3 - Parameters adjustments

- The screen displays predefined values for volume to be infused (VTBI), time and flow rate. You can use the arrows to modify the adjustable parameters.
- Press **OK** to validate the parameters

Note 1: The selection of "Furosemide" has switched the device to micro mode (values with one decimal).
Note 2: Depending on the predefined infusion mode, some parameters cannot be modified.

4 - High flow rate / Low flow rate

- During parameters adjustments, if the calculated flow rate is higher than the limit predefined in the drug library, the warning **High flow rate** is displayed.
- To launch the infusion, this high flow rate must be confirmed by a press on **start**.

Note : Identically, the warning **Low flow rate** is displayed if the calculated flow rate is lower than the limit predefined in the drug library.

Manual bolus

- To start a bolus, press twice on the key: one short press, then one continuous press (activates bolus ; check volume infused on screen). This volume is taken into account in the VTBI).
- To stop the bolus, release the key.
- To change the bolus rate, keep the bolus key pressed for at least 3 seconds and modify the bolus rates with the selection keys.

General operations

The following operations can be repeated and/or modified during the infusion process.

Note: For information on LEDs, see Indicator lights in chapter "Display and symbols", page 36.

Stop

- To stop the infusion, press the STOP key.

Note: After 2 minutes, an alarm is generated as a reminder that the infusion is stopped.

- To restart the infusion, you must confirm (or modify) the volume, time and flow rate values, by pressing **OK** for each value, and finally **start**.

Switch-off

- Press the STOP key to interrupt the infusion.
- Press the key continuously, until the Switch off screen disappears.
- To disconnect the pump, disconnect the mains supply, then the power lead.

Pause

- To program a pause, press the STOP key twice, define a pause duration
- If desired, press the checkbox button to activate the "Start infusion at pause end" option for an automatic start.

Note: If you do not check the "Start infusion at pause end" option, an audible alarm is generated at the end of the pause duration. A manual **start** is necessary to continue the infusion.