Clinician Menus Of HOME NON INVASIVE POSITIVE PRESSURE VENTILATION

BY
AHMAD YOUNES
PROFESSOR OF THORACIC MEDICINE
Mansoura Faculty of Medicine
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Clinician (Provider or Expert) Menus

A common pitfall is the use of the device without reading of its manual (user and provider manuals)

Patient menu versus clinician (provider or expert) menu?

Patient menu contain patient comfort parameters (ramp, flexible pressure and humidifier). This menu is left open to the patient. Clinician (provider or expert) menu is hidden from the patient as it contain the pressure and volume setting parameters needed to the specific character of the patient disease. It can be reached by simultaneously pressing 2 or 3 buttons that differ according to the company of manufacture.

A common pitfall is to inform the patient how to reach the clinician menu. This will lead to hazard of change in the setting parameter given by an expert clinician.

Note: 1 hecto-Pascal (hPa) = 1 milli-bar (mb) = 1.02 cm H20

Illustrations of how to reach clinician (provider or expert) menus of the commonly used home non invasive positive pressure ventilators

1-Philips Respironics Sleep Easy

Components of sleep easy CPAP
Display screen and important buttons of the device

How to reach clinician (provider or expert) menu

Plug in the machine while simultaneously pressing the plus and minus buttons on top of the machine. The LCD shows the pressure setting along with an icon of an open padlock. To move between options, press the ramp button. The plus and minus buttons adjust the increments.

2- Philips Respironics REMstar Auto (older pre-2007 standard unit, not "M" series, not the PR System One)
How to reach clinician (provider or expert) menu

you can enter the setup menu by holding down the Ramp button and both of the right and left arrow buttons under the display window, while plugging in the CPAP. The 3 buttons must be held down until the setup screen starts.

3- Philips Respironics REMstar M Series (CPAP or BiPAP)

Unplug the power cord from the back of the machine, then hold down both the left and right arrow keys while simultaneously plugging in the power supply. Once the device beeps twice, release the buttons. After you hear the
two beeps, you'll see the word setup in the lower right corner of the LCD screen. When you select setup you'll be in the clinician's mode where you can adjust every feature of the CPAP or BiPAP machine, including the pressure setting.

**ACCESSING THE PROVIDER MODE SCREENS**

Accessing provider mode unlocks additional settings that cannot be modified by the user. To access provider mode:

1. Plug the AC power cord into the power supply and an electrical outlet.
2. Hold down both the left and right buttons while simultaneously plugging the power supply into the device. The Provider Mode Standby screen (shown on the next page) will appear.

You can view and modify prescription settings using the Provider screens.

Note: On all provider screens, the Unlock symbol indicates that you are in Provider Mode.

Note: After 1 minute of button inactivity, the device times out and returns to the User Standby screen.

To navigate the display screens from the Provider Mode:

- Use the button to navigate to the next screen and the button to navigate to the previous screen.
- Use the and buttons to adjust the settings on each screen.

Note: When you have finished modifying or viewing settings, press the button to display the User Standby Screen.

Note: To use the device on a new patient, set the session counter (sessions >4) to zero. This also resets therapy hours and hours of patient use.
**ADDITIONAL SETTING INFORMATION**

- **Altitude:**
  1 = Less than 2500 ft. / <762 m
  2 = 2500 to 5000 ft. / 763 to 1524 m
  3 = 5001 to 7500 ft. / 1525 to 2286 m

- **Fine Pressure Adjustment:**
  Allows you to calibrate the device so the pressure setting can be verified with a manometer. The range is -1.9 to +1.9 cm H$_2$O.

- **Blower Hours:**
  -- When this symbol appears in Provider Mode (with the unlock symbol $\varhexagon$), it indicates total blower hours for this device.
  -- When this symbol appears in User Mode, it indicates hours of patient use.

- **Compliance Check Value:**
  Allows you to verify reported patient compliance accuracy. Patients report their total therapy hours; total hours of patient use, total sessions >4, compliance check value, and the humidifier setting (if using one). When you enter the values into Encore® Pro, the software verifies patient compliance.
4- Philips Respironics PR System One (REMstar Auto, REMstar DS150, BiPAP ST, BiPAP AVAPS, BiPAP Auto with Bi-Flex, BiPAP Pro with Bi-Flex, REMstar Pro with C-Flex & REMstar Plus):

System One

Philips Respironics PR System One

System One REMstar Plus proven CPAP sleep therapy device with C-Flex pressure relief. System One REMstar Plus offers the revolutionary comfort of C-Flex with patterns of use data reporting to help meet your patients’ compliance needs.

BiPAP Auto with Bi-Flex

How to reach clinician (provider or expert) menu

Once the device is powered, the home screen appears (it is a large box on the screen with four little boxes you choose from by turning the control wheel). Turn the wheel to toggle between the 4 options and highlight "setup". Once setup is highlighted press and hold both the control wheel and ramp button the device for at least 5 seconds. You will hear a double beep and the provider mode screen will appear.
Once setup is highlighted press and hold both the control wheel and ramp button the device for at least 5 seconds. You will hear a double beep and the provider mode screen will appear.

Scroll down by turning the knob. Make a selection by pressing the knob down, which will activate the option. Change the setting by turning the knob again (for instance, from a 5 minute to 10 minute ramp time). Press knob to lock that choice in.

Philips Respironics BiPAP AVAPS
BiPAP S/T

Quick start guide

To access provider settings:
1. From the main menu, highlight Setup.
2. Press and hold ramp button and control wheel simultaneously for 4-5 seconds until beep.
3. Provider Setup screen then appears.
To program device:
1. Turn control wheel to specific setting and press.
2. Turn control wheel to desired option and press control wheel to select.
3. Turn control wheel to next setting and repeat.
4. To exit, turn control wheel to **Back** and press.

### Provider setup menu

<table>
<thead>
<tr>
<th>Setting</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Therapy settings</strong></td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>CPAP, S, S/T, T, PC</td>
</tr>
<tr>
<td>CPAP</td>
<td>4-20</td>
</tr>
<tr>
<td>AVAPS (not available on BiPAP S/T)</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Vte</td>
<td>200-1500</td>
</tr>
<tr>
<td>IPAP max</td>
<td>40-25</td>
</tr>
<tr>
<td>IPAP min</td>
<td>4-25</td>
</tr>
<tr>
<td>IPAP</td>
<td>4-25</td>
</tr>
<tr>
<td>EPAP</td>
<td>4 to IPAP</td>
</tr>
<tr>
<td>BPM</td>
<td>0-30</td>
</tr>
<tr>
<td>Ti</td>
<td>0.5-3.0</td>
</tr>
</tbody>
</table>

### Provider setup menu (cont.)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alarm settings</strong></td>
<td></td>
</tr>
<tr>
<td>Apnea</td>
<td>0, 10, 20, 30 sec</td>
</tr>
<tr>
<td>Patient disconnect</td>
<td>0, 15, 60 sec</td>
</tr>
<tr>
<td>Low min vent</td>
<td>0 (off) to 99 lpm in 1.0 increments</td>
</tr>
<tr>
<td>Low Vte</td>
<td>0 (off) 1 (on)</td>
</tr>
<tr>
<td><strong>System settings</strong></td>
<td></td>
</tr>
<tr>
<td>Backlight</td>
<td>On, Off</td>
</tr>
<tr>
<td>Language</td>
<td>English, Italian, Spanish, German, French, icons</td>
</tr>
<tr>
<td>hPa/cm H₂O</td>
<td>hPa, cm H₂O</td>
</tr>
<tr>
<td>Setup parameter display¹</td>
<td>Leak, RR, Vm, Vte</td>
</tr>
<tr>
<td>Humidifier</td>
<td>0 to 5</td>
</tr>
<tr>
<td>Reset blower hours</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Provider mode²</td>
<td>On, Off</td>
</tr>
</tbody>
</table>

### Comfort settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flex control</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Flex setting</td>
<td>Off, 1, 2, 3</td>
</tr>
<tr>
<td>Rise time control</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Rise time</td>
<td>1-3</td>
</tr>
<tr>
<td>Ramp</td>
<td>0-45 min</td>
</tr>
<tr>
<td>Ramp start</td>
<td>4 to EPAP</td>
</tr>
</tbody>
</table>
Start therapy

1. From the main menu, turn the control wheel to Therapy and press.
2. The monitoring screen will be displayed and the device will start.
   **Note:** You can select the measured parameter to display on the Monitor Pressure screen. Choose from Leak, RR, Min. Vent, or Vte.

![Therapy and Monitor Pressure screens]

View information

In provider screen:
1. Turn the control wheel to Info and press.
2. Turn the control wheel to desired option and press to view the information identified.
3. To exit out of any option, turn the control wheel to Back and press.

![Provider screen]

Comfort settings

1. From the patient screen, highlight Comfort.
   The Flex, Ramp, and Rise Time comfort features will be shown in this menu selection if enabled.
2. Turn wheel to specific setting and press.
3. Turn control wheel to desired option and press to select.
4. To exit, turn control wheel to Back and press.

![Patient screen]
**Undocking**

Hold entire unit at each end and slide release latch to the right.

**Humidification**

With device turned off, remove and fill chamber with water.
1. (a) Lift humidifier door until it locks in place. Do not force door higher than the locked position.
   
   (b) Grasp front of chamber and slide toward you.
2. (a) Gently push tab located inside round opening on top of chamber.
   
   (b) Separate top and bottom of chamber.
3. Fill bottom chamber with distilled water.
4. Observe maximum fill lines located on sides of chamber.
5. Do not overfill.

Reassemble the chamber by placing the hinges on lid over the two tabs on back of chamber. Close lid until it locks in place with an audible click. Insert filled chamber into humidifier.
Figure (164) Filling of the humidifier with distilled water

1. When blower is activated, the humidification icon and numerical setting will light up on the device.
2. Turn control wheel to adjust humidifier number to the desired setting (0 to 5) and press. The settings represent relative humidity levels that will remain consistent throughout the night even if room temperature changes.

Humidifier setting
Press & hold these two buttons together for at least 5 seconds

Accessing the Provider Mode Screens

Accessing Provider mode unlocks settings that cannot be modified by the user. To access Provider mode:

1. Supply power to the device. First, plug the socket end of the AC power cord into the power supply. Then plug the pronged end of the AC power cord into an electrical outlet that is not controlled by a wall switch. Finally, plug the power supply cord’s connector into the power inlet on the back of the device.

2. Once the device is powered, press and hold both the control dial and the Ramp button on the device for at least 5 seconds.

3. You are now in Provider mode. You can choose between the following Provider mode screens.
Navigating the Provider Mode Screens

The User Interface (UI) on this device allows you to adjust the device settings and view information about your therapy. The UI is comprised of the display screen and the control dial. Rotate the control dial in either direction to scroll through the menu options on the display screen.

**Note:** The display is not a touch screen. You must use the control dial to navigate the device menu.

To adjust a setting:
1. Rotate the control dial to your desired menu option.
2. Press the control dial to select that setting.
3. Rotate the control dial to change the setting.
4. Press the control dial again to save the change.

**Note:** The rotate dial icon 🔄 on any screen indicates to rotate the dial to perform an action. The click dial icon 🔴 on any screen indicates to press the dial to perform an action.

**Note:** Pressing the dial when the down arrow 📈 appears on any screen will take you to a sub-menu with more menu options. Pressing the dial when the up arrow 🔼 appears on any sub-menu will return you back to the main menu.

**Note:** The screens shown throughout this guide are examples for reference only. Actual screens may vary based upon device model and provider settings.

Provider Mode Screen Descriptions

The following sections will describe the options available from the Provider screens:

*Therapy Settings, Comfort Settings, Device Settings, Info, Return to Patient Mode*

**Therapy Settings**

Choosing this screen will take you to a sub-menu where you can adjust the device therapy modes and pressure settings. These settings are described here.

![Sample Therapy Sub-Menu](image)

**Note:** Not all settings shown here will display on the device. The display will vary based on therapy device model and device settings.
<table>
<thead>
<tr>
<th>Icon</th>
<th>Text</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPAP</td>
<td>Mode</td>
<td>This screen displays the therapy mode setting. Depending on the therapy device model, you can select CPAP mode, CPAP-Check (C-Check) mode, Auto-CPAP (Auto) mode, Bi-Level mode, or Auto Bi-Level (AutoB) mode.</td>
</tr>
<tr>
<td>C-Check</td>
<td></td>
<td><strong>Note:</strong> CPAP-Check mode (C-Check) delivers CPAP therapy while automatically adjusting the pressure level to meet patient needs over the long term. Every 30 hours of therapy use, the therapy device evaluates patient obstructive respiratory disturbance index (ORDI) and increments pressure ± 1 cm H2O if needed. The range of adjustment that can be made over time is limited to ± 3 cm H2O of the CPAP-Check pressure setting, in 1 cm H2O increments.</td>
</tr>
<tr>
<td>Auto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bi-Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AutoB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opti-Start</td>
<td>Opti-Start</td>
<td>This feature starts an Auto-CPAP therapy session at a starting pressure that is closer to the previous session’s 90% pressure, in order to reduce the likelihood of any residual events at the beginning of a therapy session. You can enable or disable this feature.</td>
</tr>
<tr>
<td>EZ-Start</td>
<td>EZ-Start</td>
<td>This feature reduces the therapy pressure setting for the first few days of operation and gradually increases this setting until the prescription therapy pressure is reached. The initial pressure will be half of the prescription pressure, but no lower than 5 cm H2O. After each day of successful use (the session was greater than 4 hours), the therapy pressure will increase by 1 cm H2O until the prescription pressure is reached. From that point forward, the therapy device would operate in normal CPAP or CPAP-Check mode. If the patient has not reached their prescription pressure after 30 days of EZ-Start, then the therapy pressure will increase by 1 cm H2O per day until the prescription pressure is reached. You can enable or disable EZ-Start only if CPAP or CPAP-Check mode is enabled.</td>
</tr>
<tr>
<td>A-TRIAL</td>
<td>A-Trial</td>
<td>This Auto-Trial feature will enable the device to deliver Auto-CPAP therapy for a selectable number of days of patient use. You can enable or disable this feature.</td>
</tr>
<tr>
<td>AUTO</td>
<td>A-Trial Days</td>
<td>This screen allows you to adjust the duration of the Auto-Trial feature in number of days. You can set this from 3 to 30 days. The default is 7 days. This setting only displays if Auto-Trial mode is available and enabled. When you reach the last available Auto-Trial period, the text for this selection will appear in red font.</td>
</tr>
<tr>
<td>L</td>
<td>Auto Min</td>
<td>This screen allows you to modify the Auto minimum pressure setting. You can adjust this setting from 4 cm H2O to the Auto maximum pressure setting. This setting only displays if Auto-CPAP mode is enabled or if the Auto-Trial feature is available and enabled.</td>
</tr>
<tr>
<td>▼</td>
<td>Auto Min</td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>Auto Min</strong></td>
<td>This screen allows you to modify the Auto minimum pressure setting. You can adjust this setting from 4 cm H₂O to the Auto maximum pressure setting. This setting only displays if Auto-CPAP mode is enabled or if the Auto-Trial feature is available and enabled.</td>
<td></td>
</tr>
<tr>
<td><strong>Auto Max</strong></td>
<td>This screen allows you to modify the Auto maximum pressure setting. You can adjust this setting from the Auto minimum pressure setting to 20 cm H₂O. This screen only displays if Auto-CPAP mode is enabled or if the Auto-Trial feature is available and enabled.</td>
<td></td>
</tr>
<tr>
<td><strong>cmH₂O</strong></td>
<td><strong>Pressure</strong></td>
<td>This screen allows you to adjust the CPAP pressure, or the CPAP-Check mode starting pressure. If Auto-Trial mode was used, you can choose the 90% pressure setting determined from the Auto-Trial mode, or you can adjust this setting from 4 to 20 cm H₂O. If the Auto-Trial mode was not used, this screen allows you to only adjust the pressure setting from 4 to 20 cm H₂O.</td>
</tr>
<tr>
<td><strong>IPAP</strong></td>
<td>IPAP</td>
<td>This screen allows you to modify the IPAP setting. The initial default setting is 20 cm H₂O. You can adjust the setting from the EPAP setting to 25 cm H₂O. This screen only displays if Bi-level mode is enabled.</td>
</tr>
<tr>
<td><strong>EPAP</strong></td>
<td>EPAP</td>
<td>This screen allows you to modify the EPAP setting. The initial default setting is 4 cm H₂O. You can adjust the setting from 4 cm H₂O to the IPAP setting. This screen only displays if Bi-level mode is enabled.</td>
</tr>
<tr>
<td><strong>PS Min</strong></td>
<td><strong>Pressure</strong></td>
<td>This screen allows you to modify the Minimum Pressure Support setting. This setting is the minimum difference that is permitted between IPAP and EPAP while Auto Bi-level therapy mode is active. You may adjust the setting from 0 cm H₂O to the Maximum Pressure Support setting. This screen only displays if Auto Bi-level mode is enabled.</td>
</tr>
<tr>
<td><strong>PS Max</strong></td>
<td><strong>Pressure</strong></td>
<td>This screen allows you to modify the Maximum Pressure Support setting. This setting is the maximum difference that is permitted between IPAP and EPAP while Auto Bi-level therapy mode is active. You may adjust the setting from 0 cm H₂O to the minimum value of either 8 cm H₂O, or the difference between Max IPAP and Min EPAP. This screen only displays if Auto Bi-level mode is enabled.</td>
</tr>
</tbody>
</table>
6-ResMed S8 Compact, S8 Elite, S8 AutoSet Vantage & AutoSet Spirit

ResMed S8

Keypad of ResMed S8
How to reach clinician (provider or expert)

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD screen</td>
<td>• Displays 58 AutoSet Vantage Information including the menus and treatment screens.</td>
</tr>
<tr>
<td>Start/Stop</td>
<td>• Starts or stops treatment.</td>
</tr>
<tr>
<td></td>
<td>• Extended hold for at least three seconds starts the mask-fit feature.</td>
</tr>
<tr>
<td>Up</td>
<td>• Navigates between items within the menu.</td>
</tr>
<tr>
<td></td>
<td>• Allows you to increase settings options.</td>
</tr>
<tr>
<td>Down</td>
<td>• Navigates between items within the menu.</td>
</tr>
<tr>
<td></td>
<td>• Allows you to decrease settings options.</td>
</tr>
</tbody>
</table>

Press the right and down arrows simultaneously for about 3 seconds until the word "clinical" appears. Select Menu, then use the left and right arrows to cycle through the settings. Use the up and down arrows to make adjustments.
7- ResMed S9 Series (S9 AutoSet, S9 Elite, S9 Escape Auto, S9 Escape, S9 VPAP S, S9 VPAP ST, S9 VPAP Auto & S9 VPAP Adapt):
Plug in machine and turn the Push Dial until the device is showing the Home position (Home Icon illuminated).
In **Home** position, press the Push Dial and the Setup Menu buttons down simultaneously for 3 seconds. The clinician menu will appear. Select parameter(s) you wish to modify with the Push Dial (push down to select, turn to modify). When done, select the **Home** choice again from the displayed menu, push down the Push Dial again and the adjustment is saved.

**8- ResMed S 10 Air sense**

![ResMed S 10 Air sense](image)

**ResMed Air sense**

1 Air outlet 2 Air filter cover
3 Power inlet 4 Serial number and device number
5 Water tub 6 Screen
7 Adapter cover 8 SD card cover

**About the control panel**

- **Start/Stop button**
  
  Press to start/stop therapy.
  
  Press and hold for three seconds to enter power save mode.

- **Dial**
  
  Turn to navigate the menu and press to select an option.
  
  Turn to adjust a selected option and press to save your change.

- **Home button**
  
  Press to return to the Home screen
Different icons may be displayed on the screen at different times including:

- Ramp Time
- Ramp Time Auto
- Humidity
- Humidifier warming
- Humidifier cooling
- Wireless signal strength (green)
- Wireless transfer not enabled (gray)
- No wireless connection
- Airplane Mode

**Therapy information**

The following modes are available on the AirSense 10 device:

<table>
<thead>
<tr>
<th>Device</th>
<th>AutoSet</th>
<th>Modes available</th>
<th>CPAP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AutoSet for Her</td>
<td></td>
</tr>
<tr>
<td>AirSense 10 AutoSet</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AirSense 10 AutoSet for Her</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AirSense 10 Elite</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>AirSense 10 CPAP</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Supplemental oxygen

The AirSense 10 device is designed to be compatible with up to 4 L/min of supplemental oxygen in all modes. At a fixed rate of supplemental oxygen flow, the inhaled oxygen concentration will vary depending on the pressure settings, patient breathing pattern, mask selection and the leak rate. To connect supplemental oxygen to the device you need to connect an oxygen connector port.

Antibacterial filters

Antibacterial filters increase resistance in the air circuit and may affect accuracy of displayed and delivered pressure, particularly at high flows. ResMed recommends using an antibacterial filter with a low impedance (eg, 2 cm H2O at 60 L/min), such as PALL (BB50T), Air Safety Filter without Luer Port (4222/702) or Air Safety Filter with Side Port 24966 (4222/701). If using the Air Safety Filter with Side Port, an Oxygen Connector Port is required.

Accessing and exiting the Clinical Menu

You can access, view and set parameters relating to a patient's therapy and device configuration in the Clinical Menu.
To access the Clinical Menu:

Accessing provider menu
Press and hold the dial and the Home button for three seconds. The Home screen is displayed with an unlock icon in the top right corner of the screen.

To exit the Clinical Menu:
- Press and hold the dial and the Home button for three seconds.
- Select Exit Clinical Menu from the Home screen.

The device will automatically exit the Clinical Menu after 20 minutes of inactivity.

Adjusting the clinical settings

[Images of menu settings screens]
1. Access the Clinical Menu, highlight **Settings** and press the dial. The **Settings** menu is displayed.
2. Turn the dial to highlight the setting you want to adjust and then press the dial.
3. Turn the dial to adjust the setting and press the dial to save the change.

The settings can be changed in different ways depending on the type of screen:

- ![Image](image1.png)
  - Turn the dial to edit live in the menu.
- ![Image](image2.png)
  - Turn the dial to change the setting.
- ![Image](image3.png)
  - Select from a list of options.

**Setting the date and time**
Before you set up a new patient and start therapy for the first time, make sure you set the correct local date and time on the device. If you set the date and time after starting therapy, you may lose patient data.

1. In **Settings** menu, select **Date** and change the setting to the correct date.
2. Select **Time** and change it to the correct local time.
3. Make sure the correct local time and date has been applied. The AirSense 10 settings must be configured for each individual patient. The settings should be periodically reassessed to ensure optimal therapy.

**Settings menu**

You set all parameters relating to a patient’s therapy and device configuration in the *Settings* menu.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>AutoSet</th>
<th>Mode</th>
<th>AutoSet for Her</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Sets the therapy mode available on the device.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Min Pressure</td>
<td>Sets the lower limit of treatment pressure.</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>4–Max cm H₂O, 0.2 cm H₂O increments</td>
</tr>
<tr>
<td>Max Pressure</td>
<td>Sets the upper limit of treatment pressure.</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Min–20 cm H₂O, 0.2 cm H₂O increments</td>
</tr>
<tr>
<td>Set Pressure</td>
<td>Sets the fixed treatment pressure.</td>
<td></td>
<td>✓</td>
<td></td>
<td>4–20 cm H₂O, 0.2 cm H₂O increments</td>
</tr>
<tr>
<td>Mask</td>
<td>Select the type of mask used by the patient. Refer to Mask Device Compatibility List on <a href="http://www.resmed.com">www.resmed.com</a>.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Full Face / Nasal / Pillows</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>AutoSet</td>
<td>AutoSet for Her</td>
<td>CPAP</td>
<td>Range</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-----------------</td>
<td>-------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Ramp Time</td>
<td>If Auto is selected, the device will detect sleep onset and automatically rise to the prescribed treatment pressure.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Off / 5–45 mins / Auto</td>
</tr>
<tr>
<td>Start</td>
<td>Set the pressure at the start of ramp, up to treatment pressure.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>4–Set pressure, 0.2 cm H₂O increments</td>
</tr>
<tr>
<td>Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFR</td>
<td>Enable / disable EFR.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>On / Off</td>
</tr>
<tr>
<td>EFR Type</td>
<td>Available when EFR is enabled.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Full Time / Ramp Only</td>
</tr>
<tr>
<td>EFR Level</td>
<td>Set the EFR value.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1 / 2 / 3 cm H₂O</td>
</tr>
<tr>
<td>Climate Ctrl</td>
<td>Available when water tub is used and ClimateLineAir heated air tubing is connected.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Manual / Auto</td>
</tr>
<tr>
<td>Tube Temp.</td>
<td>Set the minimum temperature of air delivered by heated air tubing such as ClimateLineAir.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Off / 60–88°F (16–30°C), 1° increments</td>
</tr>
<tr>
<td>Humidity Level</td>
<td>Set the humidity level.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Off / 1–8</td>
</tr>
</tbody>
</table>
### Accessories

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube</td>
<td>Select the type of air tubing used by the patient. ClimateLineAir tubing is automatically detected when connected to the device.</td>
<td>SlimLine / Standard</td>
</tr>
<tr>
<td>AB filter</td>
<td>Select Yes if you attach an antibacterial filter.</td>
<td>No / Yes</td>
</tr>
<tr>
<td>View</td>
<td>Displayed at all times when an oximeter is connected.</td>
<td>0-300 hrs</td>
</tr>
<tr>
<td>oximeter</td>
<td></td>
<td>0-100% SpO₂</td>
</tr>
</tbody>
</table>

### Options

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essentials</td>
<td>Set the level of access available to the patient.</td>
<td>On / Plus</td>
</tr>
<tr>
<td>SmartStart™</td>
<td>Enable / disable the SmartStart feature. If you enable the SmartStart feature, the device will start automatically when the patient breathes into the mask and then stop automatically when the patient removes the mask.</td>
<td>Off / On</td>
</tr>
</tbody>
</table>
### Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Set the display language.</td>
<td>English / Français / Español / Portugués</td>
</tr>
<tr>
<td></td>
<td><em>(Not all languages available in all regions.)</em></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Set the current date.</td>
<td>DD Mmm YYYY</td>
</tr>
<tr>
<td></td>
<td>If you set a new date that occurs in the past then an error message is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>displayed. Before this change can be made, erase the compliance data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>available under the Configuration menu.</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Set the current time.</td>
<td>24 hours</td>
</tr>
<tr>
<td></td>
<td>If you set a new time that occurs in the past then an error message is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>displayed. Before this change can be made, erase the compliance data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>available under the Configuration menu.</td>
<td></td>
</tr>
<tr>
<td>Press. Units</td>
<td>Set the unit of pressure in which pressure is displayed.</td>
<td>cm H₂O / hPa</td>
</tr>
<tr>
<td>Temp. Units</td>
<td>Set the temperature units.</td>
<td>°F / °C</td>
</tr>
<tr>
<td>Restore</td>
<td>Reset to default settings (except for language, date and time).</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Defaults</td>
<td>Reset to default settings (except for language, date and time).</td>
<td></td>
</tr>
<tr>
<td>Erase Data</td>
<td>Erase all data stored on the device and the SD card. Settings, date, time</td>
<td>Yes / No</td>
</tr>
<tr>
<td></td>
<td>and device run hours are not affected.</td>
<td></td>
</tr>
<tr>
<td>About</td>
<td>View Run Hours, SN, SW, provider, type, service and signal strength of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the device, CX number, humidifier and internal modem.</td>
<td></td>
</tr>
</tbody>
</table>
Starting therapy
1. Direct the patient to fit their mask.
2. Direct the patient to press Start/Stop, or if the SmartStart feature is enabled, direct them to breathe into their mask. Therapy will begin and the Sleep Report screen is displayed.

The current treatment pressure is shown in green. During ramp time the pressure is gradually increasing and you will see a spinning circle. Once the prescribed treatment pressure is reached, the entire circle will be green.
The screen will go black automatically after a short period of time. You can press Home or the dial to turn it back on. If power is interrupted during therapy, the device will automatically restart therapy when power is restored. The AirSense 10 device has a light sensor that adjusts the screen brightness based on the light in the room.

**Stopping therapy**

1. Direct the patient to remove the mask.
2. Direct the patient to press Start/Stop, or if SmartStart is enabled, therapy will stop automatically after a few seconds. The **Sleep Report** now provides a summary of the therapy session.

**Viewing the Sleep Report**

The **Sleep Report** screen shows **sleep quality and mask seal status** for the most recent therapy session. Turn the dial to scroll down to view more detailed **usage data**. The parameters displayed will depend on the therapy mode.
# Sleep Report screen parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage hours</td>
<td>Number of hours the device has been used during the last session.</td>
</tr>
<tr>
<td>Events (AHI) per hour</td>
<td>Apnea and hypopneas measured per hour for one day. An apnea is when the respiratory flow decreases by more than 75% for at least 10 sec. A hypopnea is when the respiratory flow decreases to 50% for at least 10 sec. The Apnea Index (AI) and Apnea-Hypopnea Index (AHI) are calculated by dividing the total number of events that occurred by the total mask-on therapy period in hours. <strong>Note:</strong> Under conditions of high leak with EPR enabled, AHI detection may not be optimal.</td>
</tr>
<tr>
<td>Mask Seal</td>
<td>😊 Good—if the 70th percentile leak is less than 24 L/min.</td>
</tr>
<tr>
<td></td>
<td>😞 Mask needs adjustment.</td>
</tr>
<tr>
<td>Humidifier</td>
<td>😊 Humidifier attached and functional.</td>
</tr>
<tr>
<td></td>
<td>😞 Humidifier fault; refer to troubleshooting section.</td>
</tr>
<tr>
<td>More Info</td>
<td>Set the time interval covered by the <strong>Sleep Report</strong>. The options are: 1 Day / 1 Week / 1 Month / 3 Months / 6 Months / 1 Year</td>
</tr>
<tr>
<td>Period</td>
<td>Number of days the device has been used during the selected period or since the last compliance data was reset.</td>
</tr>
<tr>
<td>Days 4hrs+</td>
<td>Number of days the device has been used for more than 4 hours during the selected period or since the last compliance data was reset.</td>
</tr>
<tr>
<td>Avg. Usage</td>
<td>Average number of hours per day the device has been used during the selected period.</td>
</tr>
<tr>
<td>Used Hrs</td>
<td>Number of hours the device has been used during the selected period or since the last compliance data reset.</td>
</tr>
<tr>
<td>Pressure</td>
<td>Average pressure during the selected period (95th percentile for each day, average of the 95th percentile values for periods &gt;1 day).</td>
</tr>
<tr>
<td>Leak</td>
<td>Average of the 95th percentile values of leak during the selected period for days with usage only.</td>
</tr>
<tr>
<td>AHI</td>
<td>Apnea-Hypopnea Index—average AHI during the selected period. AHI and AI are calculated for times of low leak only.</td>
</tr>
<tr>
<td>Total AI</td>
<td>Apnea Index—average total AI during the selected period.</td>
</tr>
<tr>
<td>Central AI</td>
<td>Central Apnea Index—average CAI of the Days Used in the selected period.</td>
</tr>
</tbody>
</table>
Cleaning and Maintenance

It is important that the AirSense 10 device is cleaned regularly to ensure optimal therapy. The following sections will help with disassembling, cleaning, checking and reassembling the device.

Disassembling

1. Hold the water tub at the top and bottom, press it gently and pull it away from the device.
2. Open the water tub and discard any remaining water.
3. Hold the cuff of the air tubing and gently pull it away from the device.
4. Hold both the cuff of the air tubing and the swivel of the mask, then gently pull apart.

Cleaning

You should clean the device weekly as described.
1. Wash the water tub and air tubing in warm water using mild detergent.
   Do not wash in a dishwasher or washing machine.
2. Rinse the water tub and air tubing thoroughly and allow to dry out of direct sunlight and/or heat.
3. Wipe the exterior of the device with a dry cloth.

Checking

You should regularly check the water tub, air tubing and the air filter for any damage.
1. Check the water tub:
☐ Replace it if it is leaking or has become cracked, cloudy or pitted.
☐ Replace it if the seal is cracked or torn.
☐ Remove any white powder deposits using a solution of one part household vinegar to 10 parts water.
2. Check the air tubing and replace it if there are any holes, tears or cracks.

3. Check the air filter and replace it at least every six months. Replace it more often if there are any holes or blockages by dirt or dust.

**To replace the air filter:**

1. Open the air filter cover and remove the old air filter. **The air filter is not washable or reusable.**
2. Place a new air filter onto the air filter cover and then close it.
Make sure the air filter is fitted at all times to prevent water and dust from entering the device.

**Reassembling**

When the water tub and air tubing are dry, you can reassemble the parts.
1. Connect the air tubing firmly to the air outlet located on the rear of the device.
2. Open the water tub and fill it with distilled room temperature water up to the maximum water level mark.
3. Close the water tub and insert it into the side of the device.
4. Connect the free end of the air tubing firmly onto the assembled mask.
Reprocessing the air tubing

1. Hold the cuff of the air tubing and gently pull it away from the device.
2. Hold both the cuff of the air tubing and the swivel of the mask, then gently pull apart.

Decontaminating

Before the disinfection process, each component must be cleaned and rinsed so no visible contamination is present.
1. Clean all components with a soft bristled brush for one minute while soaking in detergent solution (see table below). Pay particular attention to all crevices and cavities.
2. Run the detergent solution through the air tubing repeatedly until no contamination is visible.
3. Thoroughly rinse each component according to the detergent manufacturer’s instructions.
1. Immerse the air tubing in a water bath. Take care that no air bubbles are trapped inside the air tubing.
2. Increase the water bath temperature to 167°F (75°C) for 30 minutes. Higher temperatures may damage the tubing.
3. Air dry out of direct sunlight and/or heat.

**Inspecting**

Perform a visual inspection of the air tubing. If any visible deterioration is apparent (holes, tears or cracks etc), the air tubing should be discarded and replaced. Slight discoloration may occur and is acceptable.

**Packaging and storage**

Store in a dry, dust-free environment away from direct sunlight. Storage temperature: −4°F to 140°F (−20°C to 60°C).

**Reprocessing the water tub and air outlet**

**Disassembling**

The following instructions provide guidance on how to correctly disassemble the cleanable water tub and the air outlet.
Disassembling

1. Remove the water tub from the device, open it and discard any remaining water.
2. Hold the water tub base and then fully open the water tub lid and pull it away so that it easily detaches from the base.
3. Remove the water tub seal from the water tub lid by pulling it away.
4. Locate the air outlet on the inside of the device.
5. Release the air outlet by pressing the clip located inside the device.
6. Remove the air outlet by pulling it out through the air outlet socket at the rear of the device.

Decontaminating

Before the disinfection process, each component must be cleaned and rinsed so no visible contamination is present.
1. Clean all components with a soft bristled brush for one minute while soaking in detergent solution (see table below). Pay particular attention to all crevices and cavities.
2. Thoroughly rinse each component according to the detergent manufacturer’s instructions

ResMed has tested the following detergents according to the manufacturer’s instructions:

<table>
<thead>
<tr>
<th>Detergent</th>
<th>Water temperature</th>
<th>Cleanable water tub</th>
<th>Air outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alconox (diluted at 1%)</td>
<td>Hot water (approx 140°F or 60°C)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Warm water (approx 113 to 140°F or 45 to 60°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Room temperature water (approx 70°F or 21°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NeoDisher MediZym (diluted at 2.0%)</td>
<td>Warm water (approx 113 to 140°F or 45 to 60°C)</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

High level thermal disinfection

<table>
<thead>
<tr>
<th>Part</th>
<th>Validated number of cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanable water tub</td>
<td>10</td>
</tr>
<tr>
<td>Air outlet</td>
<td>10</td>
</tr>
</tbody>
</table>

1. Soak the disassembled components in a hot water bath at 194°F (90°C) for 1 minute. Take care that no air bubbles are trapped against the components.
2. Air dry out of direct sunlight and/or heat

Inspecting

Perform a visual inspection of all components. If any visible deterioration is apparent (cracking, crazing, tears, etc), the water tub should be discarded and replaced. Slight discoloration of the silicone components may occur and is acceptable.

Reassembling

The following instructions provide guidance on how to correctly reassemble the air outlet and the water tub.
Resassembling

1. Hold the air outlet with the seal pointing to the left and the clip pointing forward.
2. Make sure that the air outlet is correctly aligned and insert the air outlet into the socket. It will click in place.
3. Check if the air outlet is inserted correctly as shown.

To insert the water tub seal:

Insertion of water tub seal
1. Place the seal into the lid.
2. Press down along all edges of the seal until it is firmly in place.

To reassemble the water tub lid:

1. Insert one side of the lid into the pivot hole of the base.
2. Slide the other side down the ridge until it clicks into place.

Packaging and storage

Store in a dry, dust-free environment away from direct sunlight. Storage temperature: \(-4^\circ\) F to \(140^\circ\) F (\(-20^\circ\) C to \(60^\circ\) C).

9- Weinnman CPAP 20 e
1- The device has to be plugged into an electrical outlet and turned off.

2. Press the Soft start key until “M” appears in the display and then press the humidifier key too. After about four (4) seconds, the first setting to be made will begin to flash.

3. Increase the displayed value by pressing the on/off key (+) or decrease the value by pressing the Soft start key (−). When you hold down one of the keys, the displayed values will increase or decrease at a faster rate.

When you switch to the next value by pressing the humidifier key or when you do not press any key for more than five seconds, the current value will be set.
Erase the therapy time:
The therapy time appears in the display after the date.
4. To erase the usage time, hold down the on/off key and then press the humidifier key. You cannot reverse this step.

Please note: If you fail to press any key for more than five seconds, the device will automatically leave the setting mode. If this happens, begin the process again at Step 1.

10- Weinnman Somnobalance /SOMNOsoft2

Somnobalance /SOMNOsoft2
Display and keypad of Somnobalance /SOMNOsoft2
Press the ramp-button until "Soft" can be seen in the Display. While still pressing the ramp-button press the humidifier button, until the pressure-setting-menu appears.

Weinmann SOMNO comfort 2: Press the ramp-button until the display is clear (or 'A' is blinking if Automatic Mode is enabled). While still pressing the ramp-button press the humidifier button, until the pressure-setting-menu appears.

**Patient menu**

**Status:** device switched off.
1. Keep the Softstart button depressed until the patient menu opens. The first item displayed is the current setting for exhalation relief (soft 0, soft 1 or soft 2). Release the Softstart button.
2. To scroll through the patient menu and switch to the next parameter, **briefly** press the humidifier button.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
</tr>
</thead>
<tbody>
<tr>
<td>softPAP</td>
<td></td>
</tr>
<tr>
<td>soft</td>
<td>0 softPAP off</td>
</tr>
<tr>
<td></td>
<td>1 softPAP gentle</td>
</tr>
<tr>
<td></td>
<td>2 softPAP normal</td>
</tr>
</tbody>
</table>
To exit the menu, press the humidifier button until the display disappears and "0" reappears in the display.

Alternatively: If no button is pressed for 15 seconds, the display goes out and the "0" appears in the display.

**Exhalation relief softPAP**

When soft PAP is activated, therapy pressure is temporarily reduced before the transition to exhalation. This facilitates pleasant exhalation. You can select between two soft PAP stages or deactivate the soft PAP function.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mask test</td>
<td>0: Mask test deactivated</td>
</tr>
<tr>
<td></td>
<td>B: Pressure for mask test 8 hPa</td>
</tr>
<tr>
<td></td>
<td>D: Pressure for mask test 10 hPa</td>
</tr>
<tr>
<td></td>
<td>2: Pressure for mask test 12 hPa</td>
</tr>
<tr>
<td></td>
<td>4: Pressure for mask test 14 hPa</td>
</tr>
<tr>
<td>Autostart</td>
<td>A: Automatic</td>
</tr>
<tr>
<td></td>
<td>M: Manual</td>
</tr>
</tbody>
</table>

**Soft PAP stages**

- **Soft 0**
  - softPAP off
  - Exhalation relief is deactivated.

- **Soft 1**
  - softPAP gentle
  - Therapy pressure is reduced slightly before exhalation.

- **Soft 2**
  - softPAP normal
  - Therapy pressure is reduced to a greater extent before exhalation.
Mask test

<table>
<thead>
<tr>
<th>t:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Mask test deactivated</td>
</tr>
<tr>
<td>8</td>
<td>Pressure for mask test 8 hPa</td>
</tr>
<tr>
<td>10</td>
<td>Pressure for mask test 10 hPa</td>
</tr>
<tr>
<td>12</td>
<td>Pressure for mask test 12 hPa</td>
</tr>
<tr>
<td>14</td>
<td>Pressure for mask test 14 hPa</td>
</tr>
</tbody>
</table>

Activate/deactivate automatic system

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Automatic system activated. As soon as a patient breathes into the mask (pressure &gt; 0.5 hPa), the SOMNObalance switches on automatically. When the mask is removed, the device switches off automatically after 5 seconds.</td>
</tr>
<tr>
<td>M</td>
<td>Automatic system deactivated. The device can only be switched off by pressing the on/off button. If the device is not used for 15 minutes, it switches off automatically.</td>
</tr>
</tbody>
</table>

Set SOMNOaqua

Using a humidifier prevents the upper airways of the patient drying out during therapy. Six humidifier stages can be set (1 = low heating output to 6 = maximum heating output). The most favorable setting for you will depend on room temperature and humidity, so the ideal setting will vary with the season. Under "normal" conditions, humidifier stage 3 is adequate. If the temperature is 23 °C and humidity is 70 %, a humidity of 100 % can be achieved at humidifier stage 6 and a flow rate of 20 l/min.
Components of somnoaqua of d of Somnobalance /SOMNOsoft2

1. Switch on the therapy device.
2. Keep the humidifier button depressed until the humidifier symbol and the humidifier stage start to flash. Release the humidifier button.
3. To change the humidifier stage, press the on/off button (+) or the Softstart button (-) several times until the desired stage is displayed.

Automatic off: If the therapy device detects too low a filling level in the humidifier, it switches the humidifier off within 15 minutes. The humidifier symbol in the display goes out.

Read out therapy data
The SOMNObalance e saves therapy data from 366 days.

Total therapy time
Total therapy time is displayed for a few seconds when the device is switched on Daily therapy time
The daily therapy time is displayed when the device is switched off.

Operating hours
The operating hours are displayed when you keep the on/off key depressed when switching off the device.

Info menu
In the Info menu you can also have the following data displayed:
• Therapy time
Your device has to be enabled for the following data:
• RDI
• percentage proportion of therapy time at an impermissibly high leakage rate
• 90 % pressure centile
Call up Info menu

Status: device switched off.
– Keep the humidifier button depressed until the Info menu opens. The therapy parameter and the associated date/period alternate in the display.

Scroll through Info menu

If the device is enabled, you can also view the other therapy parameters. To scroll to the next therapy parameter, press the humidifier button. The following displays appear consecutively (numerical values are examples):

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5 h</td>
<td>(mean) therapy time</td>
</tr>
<tr>
<td>12.3</td>
<td>mean RDI</td>
</tr>
<tr>
<td>L 10 P</td>
<td>percentage proportion of therapy time at an impermissibly high leakage rate</td>
</tr>
<tr>
<td>P 90 10 kPa</td>
<td>90 % pressure centile</td>
</tr>
</tbody>
</table>

The therapy parameters relate to the day (date) or selected period.
– To call up the data for a different day or period, press the + or -buttons.

| 2302  | for a particular day in the last 6 days, give the date (in the example, 23rd February) |
| 7 d   | mean value for the last 7 days               |
| 14 d  | mean value for the last 14 days              |
| 30 d  | mean value for the last 30 days              |
| 180 d | mean value for the last 180 days             |
| 366 d | mean value for the last 366 days             |

Note:
• Data are displayed only if they really are present in the device. If there are only values for 34 days, for example, then after "30d", "34d" will be displayed and then no further data.
• Each therapy day begins and ends at 12 noon. Data recorded from 0 (midnight) to 12 (noon) are assigned to the previous calendar day in each case.

Exit Info menu
– To exit the menu, press the humidifier button until the display disappears and "0" reappears in the display.

Alternatively: If no button is pressed for 15 seconds, the display goes out and "0" appears in the display.

Clean coarse dust filter, change fine filter
Change of fine and coarse filters of Somnobalance / SOMNOSoft2

1. Remove the filter compartment lid on the rear of the device.
2. Remove the coarse dust filter and clean it under clean running water until no residues remain.
3. If necessary, replace the fine filter. This cannot be cleaned.
4. Let the coarse dust filter dry.
5. The coarse dust filter must be completely dry before the device is started up.
6. Put the coarse dust filter back in and push the cover back onto the rear of the device.

Clear filter change indicator
– Keep the on/off button depressed when switching on the device until the filter change indicator goes out.

Reset hours counter

If the fine filter is changed due to contamination before 250 operating hours have passed, the hours counter needs to be reset to zero. Proceed as follows.
1. Keep the on/off button depressed when switching on the device. The filter change indicator comes on after about 3 seconds. After three more seconds, it goes out again.
2. Release the on/off button
11- Weinmann SOMNOvent ST

Weinmann SOMNOvent ST

Display of Weinmann SOMNOvent ST
1. Connect the device to the electricity supply. The device is on standby.

2. Press the menu key and keep it depressed. The first parameter in the Patient menu appears first of all, then the first parameter of the Physician information menu appears in the display after about 3 seconds.

3. To reach the Physician menu, continue to keep the Menu key depressed and then also press the Humidifier key. After about 4 seconds, the first parameter (= mode currently set) starts flashing and can be adjusted. The up and down arrow in the display indicates that you can reduce or increase the value.

4. Press the Soft start key (+) to increase the value.

5. Press the Humidifier key (-) to decrease the value.

**Therapy objective (Scope)**

With SOMNOvent auto-ST, it is possible to select a therapy objective in ST mode (autoTriLevel pressure variant). The device then automatically sets certain pressure and therapy parameters to sensible values and adapts algorithmic characteristics. In many patients, there is no need for lengthy and complex
optimization of individual parameters if you operate the device in ST mode (autoTriLevel pressure variant) and select the therapy objective with care. Specific optimization of individual parameters is still possible in the case of specific requirements.

**Scope SOFT: comfortable easing of exhalation Pre-set parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEPAPmin</td>
<td>6 hPa</td>
</tr>
<tr>
<td>EEPAPmax</td>
<td>16 hPa</td>
</tr>
<tr>
<td>PDIFF [minimum value which can be set]</td>
<td>3 hPa (2 hPa)</td>
</tr>
<tr>
<td>PDIFFmax</td>
<td>8 hPa</td>
</tr>
<tr>
<td>Pressure rise P rise</td>
<td>Soft</td>
</tr>
<tr>
<td>Respiratory frequency autoF (cannot be set manually)</td>
<td>Objective spontaneous breathing (priority 5)</td>
</tr>
</tbody>
</table>

The pre-set pressure limits are selected so that even OSAS patients with a high pressure requirement or central apneas can be treated effectively and in comfort. Automatic background frequency is somewhat below the patient’s current respiratory frequency. In the event of an apnea, the patient is quickly relieved by the device without being ventilated under controlled conditions for a prolonged period.

**Scope SUPP: protection against hypoventilation**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEPAPmin</td>
<td>6 hPa</td>
</tr>
<tr>
<td>EEPAPmax</td>
<td>14 hPa</td>
</tr>
<tr>
<td>PDIFF [minimum value which can be set]</td>
<td>6 hPa (5 hPa)</td>
</tr>
<tr>
<td>PDIFFmax</td>
<td>10 hPa</td>
</tr>
<tr>
<td>Pressure rise P rise</td>
<td>Soft</td>
</tr>
<tr>
<td>Respiratory frequency autoF (cannot be set manually)</td>
<td>Objective spontaneous breathing (priority 5)</td>
</tr>
</tbody>
</table>

The pre-set pressure limits are selected so that adequate ventilation support is guaranteed in the event of hypoventilation and desaturation is prevented. Automatic background frequency is somewhat below the patient’s current respiratory frequency. In the event of an apnea, the patient is quickly relieved by the device without being ventilated under controlled conditions for a prolonged period.
Scope CONT: relief for the muscles of the respiratory tract

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEPAPmin</td>
<td>6 hPa</td>
</tr>
<tr>
<td>EEPAPmax</td>
<td>12 hPa</td>
</tr>
<tr>
<td>PDIFF [minimum value which can be set]</td>
<td>7 hPa</td>
</tr>
<tr>
<td></td>
<td>(6 hPa)</td>
</tr>
<tr>
<td>PDIFFmax</td>
<td>12 hPa</td>
</tr>
<tr>
<td>Pressure rise P rise</td>
<td>Standard</td>
</tr>
<tr>
<td>Respiratory frequency autoF (cannot be set manually)</td>
<td>Objective spontaneous breathing (priority t)</td>
</tr>
</tbody>
</table>

The pre-set pressure limits are selected so that a high degree of respiratory support is achieved. Automatic background frequency is somewhat above the patient’s current respiratory frequency. The patient can be ventilated mostly under control at a frequency which is continuously adapted.

Scope OFF: manual setting  No therapy objective is selected. You must set the following parameters manually with care: • pressure limits • background frequency • I:E ratio • latency time

12- Weinnman Prisma ST

Weinmann Prisma ST

Opening and exiting the expert sector

The device is in the Standby or Therapy mode.

1. Hold down the info button for > 4 seconds.
2. To confirm the login, press Login. The symbol 🗝️ appears in the top left of the display. The expert sector is opened and you can set the parameters.

3. Press the lock button 🔒 to prevent unauthorized access to the setting options. The symbol 🗝️ appears in the top left of the display. The expert sector is opened and the settings are locked. It is not possible to set parameters.

4. To exit the expert sector, press the Logout button.

5. To confirm the logout, press Logout.

The patient sector is now opened

**Navigating in the expert sector**

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Button</td>
<td>Go back a screen</td>
</tr>
<tr>
<td>Button</td>
<td>Go forward a screen</td>
</tr>
<tr>
<td>Select values:</td>
<td></td>
</tr>
<tr>
<td>• If the parameter can have exactly 2 possible values (e.g., on/off): Press the button. The value changes to the other one.</td>
<td></td>
</tr>
<tr>
<td>• If the parameter can have several different values, press the button and select the value from the overview.</td>
<td></td>
</tr>
<tr>
<td>• If the parameter can have a range of different values, press the approximate value on the scale.</td>
<td></td>
</tr>
<tr>
<td>Set the exact value using the + and - buttons.</td>
<td></td>
</tr>
<tr>
<td>Use the ▼ button to open the list, select the setting from the overview.</td>
<td></td>
</tr>
<tr>
<td>Button</td>
<td>Confirm values</td>
</tr>
<tr>
<td>Button</td>
<td>Reject values</td>
</tr>
<tr>
<td>Home button</td>
<td>Go back to start screen (Standby or Therapy mode)</td>
</tr>
</tbody>
</table>
Viewing the therapy data and device information in the expert info menu

In the expert info menu you can view information about the therapy quality (compliance, leaks, AHI, pressure statistics in ventilation modes with automatic pressure adaptation, and volume and frequency parameters) within a selectable period of time, and general information about the device and network.

Requirement • The therapy device is in **Standby** mode.
• The expert sector is opened
  1. Press the info button

![Information screen](image)

2. If necessary: To view therapy data from a night other than the previous night, select the desired date in the list

3. If necessary: To view a longer period of time, navigate to the second screen

![Information screen](image)

4. Select the required period.

5. Navigate back with the arrow key
6. Press the respective field to see more detailed information.
7. In some modes there are also additional pages displaying the required pressures and statistics parameters on respiratory rate and volume. If present: Use to navigate to the second and third screens.

8. To view the device information, navigate using the arrow keys and press the Device field,
<table>
<thead>
<tr>
<th>Device version</th>
<th>CPAP</th>
<th>APAP</th>
<th>AcSV</th>
<th>S</th>
<th>autoS</th>
<th>autoS/T</th>
<th>S/T</th>
<th>T</th>
<th>aPCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>prisma20C</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prisma20A</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prismaCR</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prisma255</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prisma255-C</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prisma255ST</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prisma305ST-C</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>prisma305T</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prismaLAB</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13- Hoffricter point 2

![Display of point 2](image1)

point 2

![PC-Interface](image2)

![Display of point 2](image3)
Standard Menu and complete Menu for parameter adjustments

To switch between both menus:
• Activate Menu with:  -key (for 1 Second)
• Hold ▲▼ buttons at the same time for 3 Seconds
• Standard PIN Code: 0000 for pressure adjustment
• PIN code is changeable with Software TREND set

### Standard Menu
- Power
- Therapy
- Filter
- Language
- Brightness
- Auto
- Mask Test
- Ramp
- Calibration
- Pressure
- Wake Time
- Time
- Date

### Complete Menu
- Power
- Therapy
- Filter
- Language
- Brightness
- Auto
- Mask Test
- Ramp
- Calibration
- Pressure
- Wake Time
- Time
- Date

**Standard Menu active**  or  **Complete Menu active**

#### ACCESSORIES (optional)
- Therapy air humidifier *aquapoint*
- Filter system *filtersystempoint*
- Battery pack *powerpackpoint*

**Accessories of point 2**
POINT Battery Power Pack  
**Characteristics**  
• light weight  
• easy handling  
• add interchangeable battery  

**Technical Data**  
Dimensions: 160 x 36 x 70 mm  
Weight: 300g  
Capacity: approx. 9 h by 10hPa therapy pressure  
Charging time: approx. 5 h in stand-by mode  
Battery type: Lithium-Ionen  
Battery lifetime: approx. 2 years  

POINT Filter Pack Characteristics  
• effective insert able filter system  
• simple filter exchange  
• fine filter with ultra fine filter  
• 99,5 % filtration efficiency for particle sizes with up to 1μ
Filter system of point 2

POINT Humidifier AquaPOINT
System contains:
- Water chamber with heater plate
- Operator key pad with control electronics
- Lock mechanism
- Three-part water chamber
- Filling volume max. 260 ml
- 6 heating steps (0...5 heating steps adjustable)
- Max. water temperature 43 °C
- Insertable operator key pad

COMMISSIONING
1. Set up the device according to the installation instructions (see user's manual).
2. Connect the power supply to the device.
3. Connect the mains cable to the power supply and plug into a power socket.
4. The device starts up and displays a welcome text, the software version and the current number of therapy hours and then switches to the date and time display.
5. Connect the therapy tube a) to the air outlet and b) to the mask.
7. Put the mask on. If automatic mode has been selected, the device is turned on by the patient breathing powerfully. In manual mode, press the ON / OFF key to start the device.
8. The device first of all runs for the time selected by you for the mask test and at the prescribed pressure. You should now ensure that the mask is fitted correctly to ensure that it does not leak.
9. Place the tube in such a way that it does not exert any strain on the mask when you lie down.
10. Now breath deeply and calmly, still just through your nose.
When feeding oxygen directly into the mask, please use a kink-resistant tube made of a medically approved material. 

**Oxygen can also be fed in via an adapter fitted onto the air outlet.**
Before starting the treatment, check that the tube connections are fitted correctly.

2. First of all, switch the device on and then the oxygen supply.

3. Switch off the oxygen supply before switching the device off.

**MENUS**

The point has a standard menu and a complete menu.

To switch between the menus press ←. Then hold the ▲ and ▼ keys down at the same time for a few moments. The display shows the following message:

Standard-Menu active or Complete-Menu active

**SETTING PARAMETERS**

The following 3 keys are available to set the parameters on the device:

▲ = Programming key
▼ = Programming key
← = Enter key

1. Press ← for approx. 1 second.
2. If necessary select the standard or the complete menu.
3. Press ▲ to switch to the next parameter. A flashing triangular symbol ▲ denotes the active parameter.
4. Press ← to change a parameter.
5. Set the required value with ▲ and ▼.
6. Confirm the new value by pressing ←.

**SWITCHING THE ALARM ON AND OFF**

- The alarm wake function is set by pressing ▲. A bell symbol appears in the display.
- The alarm wake function is unset again by pressing ▼. The bell symbol disappears.

**SETTING THE WAKE UP TIME**

1. Press ← for approx. 1 second.
2. Press the ▲ and ▼ key to select **Wake Time**.
3. Confirm by pressing ←.
4. Press ▲ and ▼ to set the wake up time.
5. Confirm the set wake up time by pressing ←.
14- Hoffricter Trend II

TREND II Therapy Mode

Air Outlet / Connection Therapy Circuit

Contact Socket Humidifier

Connection for Pressure Line Tube

Trend II
The **Info Menu** offers the patients a quick and clearly information on the adjusted therapy parameters.

- No adjustments or parameter changes are possible in Info Menu!
- Enter the Info Menu with **i** - button

### Information menu of Trend II

### Scrolling function with programming Buttons **▲ / ▼** in the Info Menu

<table>
<thead>
<tr>
<th>TREND II CPAP</th>
<th>TREND II AUTO CPAP</th>
<th>TREND II BILEVEL</th>
<th>TREND II BILEVEL ST20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy</td>
<td>Therapy</td>
<td>Therapy</td>
<td>Therapy</td>
</tr>
<tr>
<td>Filter</td>
<td>Filter</td>
<td>Filter</td>
<td>Filter</td>
</tr>
<tr>
<td>Ramp</td>
<td>Ramp</td>
<td>Ramp</td>
<td>Ramp</td>
</tr>
<tr>
<td>P-Ramp</td>
<td>P-Ramp</td>
<td>P-Ramp</td>
<td>P-Ramp</td>
</tr>
<tr>
<td>Mode</td>
<td>Mode</td>
<td>Mode</td>
<td>Mode</td>
</tr>
<tr>
<td>Pressure</td>
<td>P-Start</td>
<td>I-Pressure</td>
<td>I-Pressure</td>
</tr>
<tr>
<td>FLEX-Level</td>
<td>P-Min</td>
<td>E-Pressure</td>
<td>E-Pressure</td>
</tr>
<tr>
<td></td>
<td>P-Max</td>
<td>I-Slope</td>
<td>I-Slope</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E-Slope</td>
<td>E-Slope</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I-Trigger</td>
<td>I-Trigger</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E-Trigger</td>
<td>E-Trigger</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Insp. Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Delay Time</td>
</tr>
</tbody>
</table>
**Patient menu of Trend II**

- Enter the **Patient Menu** with ↓ Key (for 1 Second)
- In Patient Menu “non” therapy relevant adjustments can be made by the Patient

---

**Clinic Menu**

- Scrolling function in Clinic Menu with ↑ or ↓ buttons.
- With ↓ - Key confirm selected parameter

<table>
<thead>
<tr>
<th>TRENDS II CPAP</th>
<th>TRENDS II AUTO</th>
<th>TRENDS II BILEVEL</th>
<th>TRENDS II BILEVEL ST20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy Mode</td>
<td>Therapy Mode</td>
<td>Therapy Mode</td>
<td>Therapy Mode</td>
</tr>
<tr>
<td>Therapy Pressure</td>
<td>Pressure Start</td>
<td>I-Pressure</td>
<td>I-Pressure</td>
</tr>
<tr>
<td>FLEX-Level</td>
<td>Pressure Min</td>
<td>E-Pressure</td>
<td>E-Pressure</td>
</tr>
<tr>
<td></td>
<td>Pressure Max</td>
<td>E-Slope</td>
<td>E-Slope</td>
</tr>
<tr>
<td>Start / Stop Automatic</td>
<td></td>
<td>I-Trigger</td>
<td>I-Trigger</td>
</tr>
<tr>
<td>Sleep Ramp</td>
<td>Pressure Ramp</td>
<td>E-Trigger</td>
<td>E-Trigger</td>
</tr>
<tr>
<td>Pressure Ramp</td>
<td>Mask</td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Nose</td>
<td>Inspiration Ratio</td>
<td>Inspiration Ratio</td>
</tr>
<tr>
<td></td>
<td>Nose-Mouth</td>
<td>Delay Time</td>
<td>Delay Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic (if activated)</td>
<td>Automatic (if activated)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleep Ramp</td>
<td>Sleep Ramp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pressure Ramp</td>
<td>Pressure Ramp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mask Test</td>
<td>Mask Test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Display Brightness</td>
<td>Display Brightness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Language</td>
<td>Language</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unit of Pressure</td>
<td>Unit of Pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turbine (h)</td>
<td>Turbine (h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Filter (h)</td>
<td>Filter (h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Therapy (h)</td>
<td>Therapy (h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delete Filter</td>
<td>Delete Filter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Date</td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time</td>
<td>Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wake-Up Time</td>
<td>Wake-Up Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(if activated)</td>
<td>(if activated)</td>
</tr>
</tbody>
</table>

---

13
Adjustments Patient Menu in TRENDS II product series

- Delete Filter  \( \Rightarrow \) Reset \( \downarrow \) press
- Ramp  \( \Rightarrow \) 0 ... 60 min [Interval 1 min]
- Mask*  \( \Rightarrow \) Nose / Nose-Mouth
- Mask Test  \( \Rightarrow \) 0 ... 90 s [Interval 5 Seconds]
- Automatic*  \( \Rightarrow \) Off/On, Start/Stop, Start
- Brightness  \( \Rightarrow \) 0 ... 100 % [Interval 10 %]
- Date  \( \Rightarrow \) Year – Month – Day
- Time  \( \Rightarrow \) Hours – Minutes
- Wake-Up Time*  \( \Rightarrow \) Hours – Minutes

Automatic*  \( \Rightarrow \) only with et BILEVEL ST20 via Software TRENDSset able to activate / inactivate

Wake-up Time*  \( \Rightarrow \) with Software TRENDSset able to deactivate the Wake-up Time

Mask*  \( \Rightarrow \) Function only in AutoCPAP available

Clinic Menu

Enter the **clinic menu** in following steps
- Enter Patient-Menu: \( \downarrow \) - key (for 1 Second)
- Hold \( \uparrow \) - \( \downarrow \) bottoms at the same time for 3 Seconds

Therapy relevant Data's are PIN Code secured
- Standard PIN Code: 0000
- PIN code is changeable with Software TRENDSset

Clinician menu of Trend II
TREND II Humidifier

TREND II with AquaTREND uni

AquaTREND uni completed the TREND II product line

Characteristics:
- Compatible to all TREND II systems
- Fixing with one „click“
- Simplest operation and cleaning
- System AquaTREND uni consists of 3 parts
- Water runback protection till 90°

AquaTrend uni
Adjustment heater / heating steps while therapy operation or in stand by operation
1. Press heater key for 1. second
2. Enter key ▼ to activate the heating menu
3. Programming key ▲ or ▼ select desired heating step (1...5 step)
4. Enter key ▼ confirm selected heating step

Advanced heating Humidifier
- Push heater key “slightly”
- LED heater is illuminating
- Adjusted heating step will be displayed in the operation display
- For further adjustments of heating step (1...5 Step), please refer „Adjustment heater“

Adjustment of heater

TREND II Humidifier Technical Data

- Weight (without water) ca. 350 g
- Power supply 24 V/ DC
- Electrical Power 0 ... 20 W (heating step 1 = 4W, heating step2 = 8W,...)
- Max. Filling Volume ca. 300 ml
- Max. Water Heating 43 °C
- Humidification 10% ... 85% relative humidification
- Application Altitude - 400 m ... 3500 m
- Heat able in 5 steps
- Humidifier heat able in stand-by mode
FILTER CHANGE

If the filter is polluted or the display shows the message Change Filter the filter cassette must be changed.
1. To change the cassette, pull it out of the device.
2. Separate filter cassette and filter frame cover by pulling them apart.
3. Replace the filter cassette.
4. Mount the filter frame cover onto the new filter cassette. Make sure the upper part (slit) and the filter cassette (pin) are in the correct position.
15-DeVilbiss 9000 series machines

Keypad (Figure C)
1. On/Off
2. Previous Item
3. Next Item
4. Delay
5. Decrease Value
6. Increase Value
7. Heater Power LED (for optional humidifier)

DeVilbiss keypad

DeVilbiss

Turn on the machine, then turn off the machine. Immediately after that, simultaneously press the down arrow button and the ramp buttons. While holding those two buttons down hit the power button to enter the setup mode. Scroll through the menu using the select button until you get to IPAP and EPAP settings. Use the up and down arrow buttons to change the levels. When done turn off the machine.
<table>
<thead>
<tr>
<th>Specification</th>
<th>Standard</th>
<th>Standard Plus</th>
<th>AutoAdjust&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Bilevel</th>
<th>AutoBilevel</th>
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<tbody>
<tr>
<td>Product Number</td>
<td>DV51D</td>
<td>DV53D</td>
<td>DV54D</td>
<td>DV55D</td>
<td>DV57D</td>
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<tr>
<td>Product Dimensions</td>
<td>6.4” H x 6.5” W x 8.4” D</td>
<td>6.4” H x 6.5” W x 8.4” D</td>
<td>6.4” H x 6.5” W x 8.4” D</td>
<td>6.4” H x 6.5” W x 8.4” D</td>
<td>6.4” H x 6.5” W x 8.4” D</td>
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<td>Product Weight</td>
<td>4.45 lb with humidifier and PAP</td>
<td>4.45 lb with humidifier and PAP</td>
<td>4.45 lb with humidifier and PAP</td>
<td>4.45 lb with humidifier and PAP</td>
<td>4.45 lb with humidifier and PAP</td>
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<tr>
<td>Pressure Range</td>
<td>3-20 cm H₂O (5 increments)</td>
<td>3-20 cm H₂O (5 increments)</td>
<td>3-20 cm H₂O (5 increments)</td>
<td>3-25 cm H₂O (5 increments)</td>
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<td>Yes</td>
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<td>AC Cord Length</td>
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<td>Automatic Attitude Adjustment</td>
<td>Yes</td>
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<td>DC Operable</td>
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<td>ABOB Analog Output For PSG</td>
<td>Yes (pressure only)</td>
<td>Yes</td>
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<td>Automatic Leak Compensation</td>
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<tr>
<td>Auto On/Off</td>
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<td>Yes (can be enabled or disabled)</td>
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<td>Yes (can be enabled or disabled)</td>
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<td>Therapy Compliance Meter</td>
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<td>Standard Warranty</td>
<td>3-year warranty on IntelliPAP</td>
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<tr>
<td>DeVlbiss SmartLink® Compatible</td>
<td>Yes</td>
<td>Yes</td>
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<td>SmartCode&lt;sup&gt;®&lt;/sup&gt; Feature</td>
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<td>Tubing Lengths</td>
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<td>6 feet or 10 feet</td>
<td>6 feet or 10 feet</td>
<td>6 feet or 10 feet</td>
<td>6 feet or 10 feet</td>
</tr>
</tbody>
</table>
The Sleep Style™ 600 CPAP Series

The Sleep Style™ 600 CPAP Series has integrated heated humidification and a heated breathing tube. It is designed for use in the home or sleep laboratory, for the treatment of Obstructive Sleep Apnea.
The Sleep Style keypad

The Sleep Style clinician menu
Start from the 12 o'clock position of the Home Screen. Press and hold the button in the middle of the Smart Dial, and use your other hand to turn the Smart Dial in a clockwise direction until you return to the 12 o'clock position. Do not release the Smart Dial button while turning. Turn the Smart Dial back (counter clockwise) one position while still holding down the button and the settings in the Clinician Menu will appear. You can now release the Smart Dial button.

NOTE: The Clinician Menu will default back to the Patient Menu after 30 seconds, or if the unit is turned off at the power supply. You can manually exit the Clinician Menu by repeating the instructions to enter the menu.
18-RESmart auto CPAP

Display Screen

User Button (-)

User Button (+)

Heated Humidifier Button

Ramp

Pressure Start/Stop Button

RESmart auto CPAP
RESmart® Auto-CPAP

Maintenance Menu Setup

1. Entering the Menu

Please press and hold the Pressure Start/Stop Button and Ramp Button, and then connect the power cord into the AC inlet. Don't loose your hand from the buttons until the maintenance menu appears on display screen as below:

```
Mode
CPAP
```

This is the mode-selection menu. The available modes are:

“CPAP”, “Auto”, “Titrator”

2. Navigating the Menu

Press the Ramp Button to enter the edit-mode in which a cursor is blinking. In edit mode, you can press +/- user buttons to change the setting. Press Ramp Button again to confirm the setting. Press +/- user buttons to access the next settings as below.
Selectable modes: CPAP, Titrate, Auto

- **Mode**
  - Treat P

Displayed only when the mode is Titrate or Auto

- **Max APAP**

Displayed only when the mode is CPAP

- **Manul P**
  - **Ramp**

Displayed only when the Ramp time is non zero

- **Init P**
  - **Unit**
  - **Use Time**
  - **Mask Test**
  - **Save**

**IMPORTANT!** Any time you wish to exit the maintenance menu without change, press the Pressure Start/Stop Button and the display will go back to the system standby screen.

**IMPORTANT!** To make all changes active, press the +/- user button to access the SAVE setting and press Ramp Button to save all changes and exit.
**19-Medicraft**

1. **HOME SCREEN**

When device connects to the electricity, device sounds two times and home screen is shown. Clock, date, SD Card, humidifier, alarm and battery status symbols are shown on home screen (Picture-1).

**HOME SCREEN of medicraft**

1. **Clock:** It shows clock.
2. **Date:** It shows date.

3. **SD Card:** It shows memory card is connect the device.

4. **Plug:** It shows device is plugged in electricity.

5. **Battery:** It shows battery status of the device.

6. **Humidifier:** It shows connection status of the between humidifier and device.

7. **Alarm:** It shows alarm of the device active or inactive.

**Keypad of medicraft**

1. **Up and Down Arrow Key:** The display is a graphical LCD and shows six lines in the menus. Using the \(\uparrow\) and \(\downarrow\) keys, you can select the line to be displayed also change the page of the menu. The reverse colored line indicates that this line has been selected.

2. **Confirm Key:** Pressing the confirm key \(\checkmark\) edits the parameter of the selected line with the help of \(\uparrow\) and \(\downarrow\) keys. Pressing the confirm key confirms the changed parameter. Unless the changed
value is confirmed with the confirm key when the programming mode is exited, the original value remains as it is. If you select the line »exit menu« and then press the confirm key, programming is ended.

3- **3-Motor Start/Stop Key:** Pressing the start/stop key starts or stops therapy.

--- SETTINGS SCREEN of medicraft ---

1- **Clock:** Clock on the home screen is set from here. White bar is carried up and down with help of arrow keys . When white bar stop the clock writing, push on the “Confirm” key to set hour. When hour is set, one more time push on the “Confirm” key to set minute. When push on the “Confirm” key again, clock is set.

2- **Date:** Date on the home screen is set from here. White bar is carried up and down with help of arrow keys . When white bar stop the date writing, push on the “Confirm” key to set day. When day is set, one more time push on the “Confirm” key to set month. When month is set, one more time push on the “Confirm” key to set year. When push on the “Confirm” key again, date is set.

3- **Alarm:** Alarm is used to wake up user. Alarm is set by user. White bar is carried up and down with help of arrow keys . When white bar stop the alarm writing, push on the “Confirm” key to set hour. When hour is set, one more time push on the “Confirm” key to set minute. When push on the “Confirm” key again, alarm is set. Push down arrow key in home screen to be activate alarm. When alarm is active, you see alarm symbol on the home screen. Push down arrow key in home screen to be inactive alarm. When alarm is inactive, alarm symbol on the home screen disappear.

4- **Ramp:** Ramp is generally used for patients treated with high pressure. Ramp time set up to maximum 45 minutes with 5 minutes intervals. Device starts therapy at the lowest pressure and slowly increases up to the set pressure until the end of the ramp time. White bar is carried up and down with help of arrow keys . When white bar stop the ramp writing, push on the “Confirm” key to set ramp time. When push on the “Confirm” key again, ramp time is set. To be inactive ramp, set 0 minute value of ramp time.
5- **Mask test:** Mask test is used to prevent air leakage for patients treated with high pressure. Mask test time set up to maximum 90 seconds with 10 seconds intervals. White bar is carried up and down with help of arrow keys ⬆️⬇️. When white bar stop the mask test writing, push on the “Confirm” key to set mask test time. When push on the “Confirm” key again, mask test time is set. Device pressurize 15.1 mbar in mask test time before every therapy. To be inactive mask test, set 0 second value of mask test time.

6- **Language:** The device has 5 different language options. They are Turkish, English, French, German and Spanish ⬆️⬇️. White bar is carried up and down with help of arrow keys. When white bar stop the language writing, push on the “Confirm” key to set language. When push on the “Confirm” key again, language is set.

![SETTINGS SCREEN of medicraft](image)

**SETTINGS SCREEN** of medicraft

1- **Autostart:** When wear the mask and take first breath, device start to therapy automatically. When mask is worn off, therapy is end. When white bar stop the autostart writing, push on the “Confirm” key and select 1 to be activate or select 0 to be inactive autostart. Usage of autostart is advised for patient know device and using device for a long time. Because when the mask leak occurs, therapy is interrupted.

2- **Heater Level:** Adjusting the heat level of humidifier. For not to use Humidifier 0, for the highest degree 5.

3- **LCD Brightness:** For lowest brightness 1, highest 3.

4- **Silent Mode:** For notification sounds. For silence 1, for notification 0.

5- **Counters:** You can see the usage of the product.

![Counters on this screen](image)

Counters on this screen.
Counters on this screen:

1- **Stand By**: Shows the total time that is open during battery operation or the device is plugged in.

2- **Blower Duration**: Shows the total time fan of the device is running.

3- **Therapy Duration**: Shows the total therapy time that the device is applied to the patient.

In that menu, you can see on the left side serial number, on the right side software of the product.

NOTE: If you do not press any key for 30 seconds while programming, the programming mode is automatically exited for safety reasons.

**CLINICAL MENU**

Therapy mode that you can select. For this menu, you must press the “Confirm” key and upper arrow for about 2 seconds. You can adjust the menu by upper and lower arrow buttons, with ok button you can adjust it.

**CPAP Mode (Continuous Positive Airway Pressure)**

1- **CPAP Pressure**: You can see the therapy pressure. 4 – 20 mbar adjustable. the therapy pressure in the report have been identified by a doctor, used to adjust. White bar is carried up and down with help of arrow keys . When white bar stop the CPAP Pres. writing,
push on the “Confirm” key to set pressure and change color on the CPAP Pres. writing. CPAP pressure set with up and down arrow keys. When CPAP pressure is set, one more time push on the “Confirm” key to confirm CPAP pressure. When push on the “Confirm” key again, CPAP pressure is set.

2- Flex CPAP: Flexibility option 0 means NO. Adjustable 1-3. Pressure decreasing stage is set as instant and is go back to the therapy pressure.

3- Exit: As known.

Auto CPAP Mode

**Auto CPAP Mode**

[Image of Auto CPAP Mode]

**Adjusting AutoCPAP Mode:**

1- Startup: The pressure of beginning therapy. 4 – 20 mbar adjustable. Initial pressure is the first pressure at which the patient starts to use the device. Then, according to the pressure needs to be changed automatically by the device and apply the necessary pressure to the patient continuously. White bar is carried up and down with help of arrow keys. When white bar stop the Startup writing, push on the “Confirm” key to set pressure and change color on the Startup writing. Startup pressure set with up and arrow keys. When Startup pressure is set, one more time push on the “Confirm” key to confirm CPAP pressure. When push on the “Confirm” key again, Startup pressure is set.

2- Minimum: Minimum pressure for therapy. If patients don’t experience moments of obstructive events during sleep, the device is automatically determine the lowest value which is entered.
4- Maximum: Maximum pressure for therapy. If patients experience moments of obstructive events during sleep, the device increase automatically value of pressure until maximum value. Maximum value is entered for safety of patient.

5- Flex APAP: Flexibility option 0 means NO. Adjustable 1-3. Pressure decreasing stage is set as instant and is go back to therapy pressure.

6- Exit: As known.

**BiLEVEL ST Mode**

--- CLINICAL MENU ---

MODE

BiLEVEL ST

--- CLINICAL MENU ---

I-PAP: 15.0 mbar
E-PAP: 8.0 mbar
I-Slope: 
E-Slope: 
I-Sensitivity: 
E-Sensitivity: 

**Adjusting BiLEVEL ST Mode**

**BiLEVEL ST Mode**

1- I-PAP: Inspiration pressure. Adjustable 4 - 25 mbar and have to be higher than E-PAP. Desired pressure is set for the breath. White bar is carried up and down with help of arrow keys. When white bar stop the I- PAP writing, push on the “Confirm” key to set pressure and change color on the I- PAP writing. I- PAP pressure set with up and down arrow keys. When I- PAP pressure is set, one more time push on the “Confirm” key to confirm I- PAP pressure. When push on the “Confirm” key again, I- PAP is set.

2- E-PAP: Adjustable 4 - 20 mbar and have to be lower than I-PAP. Desired pressure is set for the exhale. White bar is carried up and down with help of arrow keys. When white bar stop the E-PAP writing, push on the “Confirm” key to set pressure and change color on the E-PAP writing. E-PAP pressure set with up and down arrow keys. When
E-PAP pressure is set, one more time push on the “Confirm” key to confirm E-PAP pressure. When push on the “Confirm” key again, E-PAP is set.

3- I-Slope: Inspiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached I-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. I-PAP pressure level slowly rises and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

4- E-Slope: Expiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached E-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. E-PAP pressure level slowly decreases and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

5- I-Sensitivity: Inspiration pressure sensitivity. Adjustable 1 – 6. It is called the trigger sensitivity. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's breathing action and starts to increase pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of breathing want more precision and this level is more appropriate. Step 6 is the least sensitivity If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

6- E- Sensitivity : Expiration pressure sensitivity. Adjustable 1 – 6. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's exhale action and starts to decrease pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of exhale want more precision and this level is more appropriate. Step 6 is the least sensitivity If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.
Clinician menu of BiLEVEL ST Mode

1- Frequency: Number of breathing per minute. Adjustable 4 – 40. A normal human respiration 12 times in minute. The total duration of the respiration is 5 seconds. Breathing of the respiration is 1.8 seconds and exhalation of the respiration is 3.2 seconds. But this variables depends age and disease so they can be different person by person. According to patient's needs, number of breathing per minute is set and device guide patient for number of breathing. This setting should be commensurate with Inspiration time while adjusting. If commensurate is not balance, device prevent

2- I-Duration: Duration of Inspiration. This time is 1.8 seconds for a normal person. Because of the variability of the disease, duration can be brought to shorten or to extend. There should be proportional to the frequency. Entered value should be 0.5 seconds at least. It is up to a maximum of 50% of the respiratory period. Maximum value proportional to the value of frequency. After determining the time to breathe, exhale time is determined automatically by device.

3- Min. Volume: Alarm for minimum volume. This mode works with pressure target. While applying pressure which is entered, how much volume of air send that also shows that as TIDAL VOLUME. If doctor decided to ideal value of tidal volume and wants warning under this amount, doctor enter the minimum value and device give a warning under this value. If you don't want to use this feature, value entered 0 ml.

4- Max. Volume: Alarm for maximum volume. This mode works with pressure target. While applying pressure which is entered, how much volume of air send that also shows that as TIDAL VOLUME. If doctor decided to ideal value of tidal volume and wants warning over this amount, doctor enter the minimum value and device give a warning over this value. If you don't want to use this feature, value entered 1500 ml.

5- Exit: As known.
BiLEVEL PV Mode

Adjusting BiLEVEL PV Mode:

1- I-MAX: Maximum Inspiration pressure. Adjustable 4 – 35 and have to be higher than E-PAP. Desired pressure is set for the first breath and device set pressure automatically after first breath. White bar is carried up and down with help of arrow keys. When white bar stop the I-MAX writing, push on the “Confirm” key to set pressure and change color on the I-MAX writing. I-MAX pressure set with up and down arrow keys. When I-MAX pressure is set, one more time push on the “Confirm” key to confirm I-MAX pressure. When push on the “Confirm” key again, I-MAX is set.

2- E-PAP: Expiration pressure. Adjustable 4 – 35 and have to be lower than I-PAP. Device change only I-PAP valuses to reach target volume. E-PAP remains constant. White bar is carried up and down with help of arrow keys. When white bar stop the E-PAP writing, push on the “Confirm” key to set pressure and change color on the E-PAP writing. E-PAP pressure set with up and down arrow keys. When E-PAP pressure is set, one more time push on the “Confirm” key to confirm E-PAP pressure. When push on the “Confirm” key again, E-PAP is set.

3- I-Slope: Inspiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached I-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. I-PAP pressure level slowly rises and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.
4- E-Slope: Expiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached E-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. E-PAP pressure level slowly decreases and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

5- I-Sensitivity: Inspiration pressure sensitivity. Adjustable 1 – 6. It is called the trigger sensitivity. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's breathing action and starts to increase pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of breathing want more precision and this level is more appropriate. Step 6 is the least sensitivity If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

6- E-Sensitivity: Expiration pressure sensitivity. Adjustable 1 – 6. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's exhale action and starts to decrease pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of exhale want more precision and this level is more appropriate. Step 6 is the least sensitivity If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

--- CLINICAL MENU ---

Frequency: 125pm
I-Duration: 1.8s
Target Volume: 500ml
Exit

Clinician menu of BiLEVEL PV Mode

1- Frequency: Number of breathing per minute. Adjustable 4 – 40. A normal human respiration 12 times in minute. The total duration of the respiration is 5 seconds. Breathing of the respiration is 1.8 seconds and exhalation of the respiration is 3.2 seconds. But this variables
depends age and disease so they can be different person by person. According to patient's needs, number of breathing per minute is set and device guide patient for number of breathing. This setting should be commensurate with Inspiration time while adjusting. If commensurate is not balance, device prevent disproportionate values for security.

2- **I-Duration:** Duration of Inspiration. This time is 1.8 seconds for a normal person. Because of the variability of the disease, duration can be brought to shorten or to extend. There should be proportional to the frequency. Entered value should be 0.5 seconds at least. It is up to a maximum of 50% of the respiratory period. Maximum value proportional to the value of frequency. After determining the time to breathe, exhale time is determined automatically by device.

3- **Target Volume:** As known. Adjustable 200 – 1500 ml. The patient's needs must be taken into consideration while applying the target volume. Minimum-Maximum pressure range should cover the needs of patient therapy pressure.

4- **Exit:** As known.

**BiLEVEL AP Mode (Auto BPAP working mode.)**

Adjusting **BiLEVEL AP Mode**

1- **I-MAX:** Maximum Inspiration pressure. Adjustable 4 – 35 and have to be higher than E-PAP. Desired pressure is set for the first breath and device set pressure automatically after first breath. White bar is carried up and down with help of arrow keys. When white bar stop the I-MAX writing, push on the “Confirm” key to set pressure and change color on the I-MAX writing. I-MAX pressure set with up and down arrow keys. When I-MAX pressure is set, one more time push on the “Confirm” key to confirm I-MAX pressure. When push on the “Confirm” key again, I-MAX is set.
2- E-MIN: Minimum Expiration pressure. Adjustable 4 – 20 and have to be lower than I-PAP. Device change only I-PAP values to reach target volume. E-PAP remains constant. White bar is carried up and down with help of arrow keys. When white bar stop the E-PAP writing, push on the “Confirm” key to set pressure and change color on the E-PAP writing. E-PAP pressure set with up and arrow keys. When E-PAP pressure is set, one more time push on the “Confirm” key to confirm E-PAP pressure. When push on the “Confirm” key again, E-PAP is set.

3- PS-MAX: Maximum difference between Inspiration and Expiration pressure.

4- I-Slope: Inspiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached I-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. I-PAP pressure level slowly rises and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

5- E-Slope: Expiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached E-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. E-PAP pressure level slowly decreases and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

6- I-Sensitivity: Inspiration pressure sensivity. Adjustable 1 – 6. It is called the trigger sensitivity. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's breathing action and starts to increase pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of breathing want more precision and this level is more appropriate. Step 6 is the least sensitivity If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.
1- E- Sensivity: Expiration pressure sensivity. Adjustable 1 – 6. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's exhale action and starts to decrease pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of exhale want more precision and this level is more appropriate. Step 6 is the least sensitivity. If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

2- Flex BiLevel: Flexibility option 0 means NO. Adjustable 1-3. When patients tend to exhale, EPAP pressure decreasing stage is set as instant and is go back to therapy pressure.

3- Exit: As known

**ASV Mode:**

--- CLINICAL MENU ---

MODE

ASV

--- CLINICAL MENU ---

Adjusting ASV Mode

1- I-MAX: Maximum Inspiration pressure. Adjustable 4 – 35 and have to be higher than E-PAP. Desired pressure is set for the first breath and device set pressure automatically after first breath. White bar is carried up and down with help of arrow keys. When white bar stop the I-MAX writing, push on the “Confirm” key to set pressure and change color on the I-MAX writing. I-MAX pressure set with up and down arrow keys. When I-MAX pressure is set, one more time push on the “Confirm” key to confirm I-MAX pressure. When push on the “Confirm” key again, I-MAX is set.

2- E-MIN: Minimum Expiration pressure. Adjustable 4 – 20 and have to be lower than I-PAP. Device change only I-PAP values to reach target volume. E-PAP remains constant. White bar is carried up and down
with help of arrow keys. When white bar stop the E-PAP writing, push on the “Confirm” key to set pressure and change color on the E-PAP writing. E-PAP pressure set with up and arrow keys. When E-PAP pressure is set, one more time push on the “Confirm” key to confirm E-PAP pressure. When push on the “Confirm” key again, E-PAP is set.

3- PS-MAX: Maximum difference between Inspiration and Expiration pressure.

4- I-Slope: Inspiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached I-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. I-PAP pressure level slowly rises and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

5- E-Slope: Expiration slope. Adjustable 1 – 8. Slope setting or the rise time is called. 1 is the fastest stage. Device is reached E-PAP pressure level as quickly as possible and remains at this pressure during breathing. 8 is the slowest stage. E-PAP pressure level slowly decreases and remains at this pressure during breathing. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

6- I-Sensitivity: Inspiration pressure sensitivity. Adjustable 1 – 6. It is called the trigger sensitivity. Every human lung muscle strength is variable and it can be change according to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's breathing action and starts to increase pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of breathing want more precision and this level is more appropriate. Step 6 is the least sensitivity. If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

--- CLINICAL MENU ---

Sensitivity: 126pm
Frequency: 1.8s
I-Duration: 500ml
Target Volume: Exit

Clinician menu of ASV Mode

1- E- Sensitivity: Expiration pressure sensitivity. Adjustable 1 – 6. Every human lung muscle strength is variable and it can be change according
to age, gender and disease. The devices can detect the patient's breathing or exhale with helping of sensor and react. In this setting, the device is used to make the right trigger according to different lung power. The device detects the user's exhale action and starts to decrease pressure. Step 1 is the most sensitive setting. If the patient's lungs are too weak to start triggering, the perception of exhale want more precision and this level is more appropriate. Step 6 is the least sensitivity If the patient's lungs is very strong and sensors detect every movement easily, this level is more appropriate. The device is set to the second level, which is ideal but according to patient's needs, appropriate level is selected by doctor.

2- Frequency: Number of breathing per minute.

3- I-Duration: Duration of Inspiration. This time is 1,8 seconds for a normal person. Because of the variability of the disease, duration can be brought to shorten or to extend. There should be proportional to the frequency. Entered value should be 0,5 seconds at least. It is up to a maximum of 50% of the respiratory period. Maximum value proportional to the value of frequency. After determining the time to breathe, exhale time is determined automatically by device.

4- Target Volume: As known. Adjustable 200 – 1500 ml. The patient's needs must be taken into consideration while applying the target volume. Minimum-Maximum pressure range should cover the needs of patient therapy pressure.

5- Exit: As known.

20- Weinnman VENTImotion 2

VENTImotion 2

Therapy modes

The device can be operated in the following therapy modes: ST, T, CPAP. In time-controlled mode T and in assisted-controlled mode ST, you can set respiratory frequency in a range from 6 to 45 breaths per minute and inspiration
time in a range from 20 % to 67 % of respiratory period. In ST, you can select one of 6 trigger stages for inspiration and exhalation. You can switch off the trigger for exhalation. Exhalation is then time-controlled. In addition, the device also provides the option of completely blocking the inspiration trigger for the duration of exhalation. Once this adjustable trigger lockout has elapsed, the inspiration trigger detects the patient’s respiratory effort on inspiration at the set sensitivity as before.

Speed of pressure rise and pressure drop can be set. The device has an auto switch-on function. If this is activated, the device can be switched on by the patient taking a breath in the breathing mask. The device is still switched off by the On/Off key.

**Intended use**

VENTImotion 2 is a home ventilation device for non-invasive ventilation (not for life-support purposes) of adult patients with respiratory insufficiency who have a tidal volume of at least 160 ml and can be proven to have an independent respiratory drive. This corresponds to the following diseases:

1- **Obstructive respiratory disorders** such as COPD

2- **Restrictive ventilation disorders**, such as scolioses and deformities of the thorax

3- **Neurological, muscular and neuromuscular ventilation disorders**, such as pareses of the diaphragm, for example

4- **Central respiratory regulation disorders** as OHS

5- **Obstructive sleep apnea syndrome**

**Function keys :**

IPAP ,EPAP ,f , Ti/T (I:E)

You can call up the following device functions directly by pressing the relevant key on the device
VENTImotion 2 function keys and display

Softstart

Humidifier

When these keys are pressed, the relevant menu appears in the display.

You can navigate within the menu using the dial.

Menu key
Use the Menu key to switch from Monitor to Menu (in the display, you will see to the left of the key: Menu)

**Current values during therapy are displayed in Monitor.**

In Menu, you can make settings on the device.

The menu key has other functions assigned to it as a function of context (e.g. back). The current function in each case is shown on the left of the display next to the Menu key.

**Acknowledge alarm**

![Image of alarm list]

**Acknowledge alarm**

Use the alarm acknowledgement key to acknowledge an alarm and to have a list of the alarms which have occurred displayed.

**Navigate with the dial**

![Image of device interface]

**Navigate with the dial**
You can use the dial to select menu items, navigate in the menu windows and set values for individual menu items.

**Select menu items:**

1. Move the dial clockwise to move the selection bar down in the display.

2. Move the dial anticlockwise to move the selection bar up in the display.

3. Press the dial to confirm selection of a menu item and open the relevant submenu, or to select a value you wish to change.

**Tip** The arrows on the left-hand edge of the display indicate that more menu items are present than are being shown in the display. To display these items, move the selection bar beyond the top/bottom menu item displayed, as appropriate.

**Standby mode (fan off)**

![Diagram of the menu interface with arrows indicating the selection bar and Arrows button.](image)
All Physician functions are also available in Standby mode (with fan switched off). In other words, you need only activate the fan immediately before the start of therapy.

**Proceed as follows to make settings in Standby mode.**

Enable Physician functions.

Make the settings as described in the sections which follow.

Press the On/Off key to switch on the fan.

Software version and operating hours are shown briefly in the display.

To switch back to Standby mode, keep the On/Off key depressed until the fan stops.

**Enable and lock Physician functions**

To enable Physician functions, proceed as follows.

Set the device to the default display or standby mode.

Keep the IPAP and EPAP keys depressed for 4 seconds until the message Physician menu locked! (Patient mode) is no longer displayed.

To lock Physician functions, press the IPAP and EPAP keys again for 4 seconds until the message Physician menu locked! appears and the Physician menu is locked.
Set value

Move the dial clockwise to increase a value. Move the dial anticlockwise to decrease a value. Press the dial to store a value.

Exit menu item

Move the dial clockwise until the selection bar in the display is on back, cancel or close, depending on context. Press the dial. The display switches back to the menu above.

New delivery
Return to use (e.g. following a change of patient)

Press the On/Off key. The device starts in Patient mode.

Enable Physician functions. If necessary, set the language for the new patient. Set the device for the new patient. Lock Physician functions again.

Start of therapy

Press the On/Off key. If Auto switch-on is activated, the device switches on automatically as soon as the patient puts on the mask and starts breathing through it. The Weinmann software version and operating hours appear in the display for approx. 3 seconds. The flow generator starts pumping air through the tube system.

Functions in Monitor

Whilst the patient is receiving therapy, the following functions are available to you via the keys on the device:

Correct ventilation parameters

Have ventilation graph displayed in the form of curves

Acknowledge alarms

Adapt humidifier level and Soft start time

Types of display (not in Standby mode)

During therapy, ventilation parameters are displayed in Monitor (default display). You can select the following other types of display.

Flow curve: indicates respiratory flow
**Volume curve**: indicates the patient’s respiratory volume

Volume curve

**X monitor**: indicates the patient’s actual inspiration and exhalation times.

X monitor

**Select type of display**

Select type of display

**Proceed as follows to change the type of display.**

Operate the device. The type of display cannot be selected in Standby mode. Press the dial. The Display selection list appears. Monitor remains visible in the background. Use the dial to select a type of display and press the dial to confirm it. The display switches to the desired type of display.
Set ventilation parameters

Set IPAP und EPAP

Enable Physician functions. Press the IPAP key. Set the values for IPAP and EPAP using the dial. Press the dial after each entry to confirm it. If you do not confirm the values within 15 seconds, the display switches back to the original value.

To exit Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial.

Set respiratory frequency (modes T, ST only)

Enable Physician functions. Press the f key. Set the values for f and Ti/T using the dial. After each entry, press the dial to confirm. The values I:E and Ti cannot be set directly; they result from the details for f and Ti/T. This is why they have a gray background.

To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial.
Set I:E ratio (modes T, ST only)

Set I:E ratio

On this device, the I:E ratio is changed by specifying the percentage proportion of inspiration time (Ti) of the entire respiratory cycle (T).

Enable Physician functions. Press the I:E key. Set the values for Ti/T using the dial. After each entry, press the dial to confirm. The values I:E and Ti cannot be set directly; they result from the details for f and Ti/T. This is why they have a gray background.

To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial.

Acknowledge alarms (not in Standby mode)/ Alarm list

Acknowledge alarms

Press the alarm acknowledgement key to acknowledge acoustic alarms and mute them for 120 seconds. Press the alarm acknowledgement key again to display a list of alarms which have occurred. A maximum of 100 alarms is stored and displayed, after which the oldest alarms in each case are overwritten.

Tip: You can also have the alarm list displayed in normal operating mode at any time. Press the alarm acknowledgement key to do so.
Set humidifier level

Keep the humidifier key depressed until the current humidifier level is displayed. Set the humidifier level using the dial and press the dial to confirm. Alternatively, you can also change humidifier level by pressing the humidifier key several times. If you do not press any key for 4 seconds, the humidifier level displayed is likewise stored. The settings are retained after the device is switched off.

Use Soft start

Keep the Soft start key depressed until the current Soft start time is displayed. Set Soft start time using the dial. Alternatively, you can also change Soft start time by pressing the Soft start key several times. At this point, you can only set Soft start time within the limits approved from within the Physician menu 0 min. to T max (the maximum permitted Soft start time for the patient in question).

To save the Soft start time, press the Menu key or the dial. If you press no key for 4 seconds, the Soft start time displayed is likewise saved. The settings are retained after the device is switched off.

Settings in the menu

In Menu, you can make detailed settings (e.g. ventilation modes, pressure rise, volume compensation) to optimize the device for the therapy of the patient.
in question. Once Menu or a submenu is open, the selection bar is always over the first menu item.

To call up this menu item, press the dial or turn the dial clockwise to select a different menu item. Press the dial to confirm entries. You will find detailed information about the individual submenus in the sections which follow.
Mode

You can operate this device in three ventilation modes, T, ST and CPAP.

Select and set mode

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the menu item Mode and press the dial to confirm. The active mode in question is shown in gray type. It cannot be selected. Use the dial to set the values for the individual parameters. Press the dial after each entry to confirm it.

Use the dial to select Activate and press the dial to confirm. The message ... mode active! appears in the display. The display then switches to Monitor. The set values become active from the next inspiration.

Select and set mode

To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial.
<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
<th>Adjustable parameters</th>
<th>Other functions</th>
</tr>
</thead>
</table>
| **T mode** | Controlled ventilation | - IPAP  
- EPAP  
- \( f \)  
- Ti/T (I:E) | Trigger  
Speed of pressure rise  
Softstart  
Trigger/lockout  
Air Trap control  
Volume compensation |
| ST       |                             | - IPAP  
- EPAP  
- \( f \)  
- Ti/T (I:E) | Trigger  
Speed of pressure rise  
Softstart  
Trigger/lockout  
Air Trap control  
Volume compensation |
| CPAP mode | Spontaneous breathing at a constant therapy pressure for inspiration and exhalation | - CPAP | Trigger  
Speed of pressure rise  
Softstart  
Trigger/lockout  
Air Trap control  
Volume compensation |
Parameters

You can set the following parameters: Trigger, Trigger lockout, Air Trap Control, Pressure rise, Volume compensation, Soft start

Trigger

In order to be able to switch from inspiration to exhalation in ST mode to suit the patient’s breathing, the device analyzes the absolute value and course of the flow signal. The sensitivity of the trigger on inspiration can be set in six stages. Stage 1 corresponds to the lowest sensitivity, Stage 6 to the highest. The sensitivity stages of the trigger on exhalation correspond to the percentage proportions of maximum flow shown below.

<table>
<thead>
<tr>
<th>Trigger stage on exh.:</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of maximum flow:</td>
<td>off</td>
<td>40</td>
<td>50</td>
<td>70</td>
<td>80</td>
<td>85</td>
<td>90</td>
</tr>
</tbody>
</table>

Set trigger

Enable Physician functions.

Press the Menu key to call up the Menu.

Use the dial to select the menu items Parameter > Trigger. Press the dial after each entry to confirm it.

<table>
<thead>
<tr>
<th>ST Parameter</th>
<th>ST Trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger</td>
<td>- Sensitivity +</td>
</tr>
<tr>
<td>Trigger lockout</td>
<td>Insp. 1 2 3 4 5 6</td>
</tr>
<tr>
<td>Air Trap Control</td>
<td>Exp. 0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>Pressure rise</td>
<td>back</td>
</tr>
</tbody>
</table>

Set trigger

Use the dial to set the trigger stages for Inspiration and Exhalation. Press the dial after each entry to confirm it. To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial.
**Trigger lockout**

- In the case of ventilation with trigger switched on, it is possible that there will be faulty triggering during exhalation.
- In ST mode, therefore, the device provides the option of blocking the inspiration trigger for a period of exhalation.

![Trigger lockout diagram]

**Trigger lockout**

- Once this adjustable trigger lockout has elapsed, the inspiration trigger detects the patient’s respiratory effort on inspiration at the set sensitivity as before.
- For the same high trigger sensitivity, the device fades out a range of exhalation critical for faulty triggering for inspiration and thus achieves a high degree of stability in the spontaneous respiration pattern.
- The device displays mandatory exhalation time and set trigger lockout in the form of a diagram at the bottom of the menu.
- In this diagram, the device also displays the current respiratory phase change by means of the symbol S (spontaneous, triggered), T (mandatory, timed) or B (triggering blocked during trigger lockout).

**Set trigger lockout**

1. Enable Physician functions.
2. Press the Menu key to call up the Menu.
3. Use the dial to select the menu items **Parameter > Trigger lockout**. Press the dial after each entry to confirm it.
4. Use the dial to set Trigger lockout and press the dial to confirm. The value Te cannot be set directly; it results from the ratio of the values Ti/T and f (mandatory exhalation time). This is why it has a gray background.

5. To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial and then press the dial.

**Air Trap Control**

Air Trap Control monitors ventilation with regard to possible air trapping to prevent over inflation of the lung or dynamic hyperinflation. This function is particularly suitable for supplementing therapy in the case of obstructive clinical pictures (e.g. COPD). If breath curves indicate air-trapping and a rise in intrinsic PEEP, frequency is reduced whilst inspiration time remains constant. To prevent the patient being under-supplied, Air Trap Control is equipped with a safety limit which cannot be undershot. This limit corresponds to an exhalation extended by no more than 50 %/ 0.8 s.

![Air Trap Control](image)

**The trigger stages set in ST mode**

**Off:** switches off Air Trap Control.

**On:** switches on Air Trap Control.

**If volume compensation is activated, Air Trap Control is switched off** and cannot be activated.

**Set Air Trap Control**

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the menu items **Parameter > Air Trap Control**. Press the dial after each entry to confirm it. Use the dial to switch Air Trap Control on or off and press the dial to confirm.
To exit the Menu, press the Menu key (back) until Monitor is displayed.

**Speed of pressure rise**
- By changing the speed of pressure rise, you determine how fast the device is to reach therapy pressure in the inspiration/exhalation phase.
- The speed of pressure rise can be set for pressure on inspiration and pressure on exhalation (speed of pressure drop) in six stages in each case.
- At Stage 1, therapy pressure is reached quickly, at Stage 6, therapy pressure is reached slowly. This function is not available in CPAP mode.

**Set speed of pressure rise/drop**
1. Enable Physician functions.
2. Press the Menu key to call up the Menu.
3. Use the dial to select the menu items Parameter > Pressure rise. Press the dial after each entry to confirm it.
4. Use the dial to set the speed of pressure rise for Inspiration and the speed of pressure drop for Exhalation. Press the dial after each entry to confirm it.
5- In addition to being displayed as a numerical value, the current setting is also displayed in graphical form at the bottom of the Pressure rise menu.
6- To exit the Menu, press the Menu key (back) until Monitor is displayed.

**Volume compensation**

- There is a volume compensation option in T and ST modes.
- Activating volume compensation ensures that the patient is supplied a target volume. To this end, the device compares the tidal volume determined with a set target volume. You can set the following parameters.
- Compensation: switches off volume compensation or specifies one of three stages at which volume compensation is reached.
  - Off: switches off volume compensation.
  - Slow: the device checks after 8 breaths whether the target volume has been reached and changes pressure by 0.5 hPa. If the pressure reaches a corridor around the target volume, the device switches to precise control.
  - Medium: the device checks after 5 breaths whether the target volume has been reached and changes pressure by 1.0 hPa. If the pressure reaches a corridor around the target volume, the device switches to precise control.
  - Fast: the device checks after every breath whether the target volume has been reached and changes pressure by 1.5 hPa. If the pressure reaches a corridor around the target volume, the device switches to precise control.

**Δp:** specifies maximum pressure

**VT:** specifies target volume

If the AirTrap Control function is switched on, this is switched off automatically as soon as you activate volume compensation.

**Set volume compensation**

1. Enable Physician functions.
2. Press the Menu key to call up the Menu.
3. Use the dial to select the menu items Parameter >Volume comp..
   Press the dial after each entry to confirm it.
4. Use the dial to set the values for Compensation (off, slow, medium, fast), Δp and VT. Press the dial after each entry to confirm it.

5. To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial and then press the dial.

Set Soft start parameters

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the menu items Parameter > Softstart. Press the dial after each entry to confirm it. Use the dial to set lockout to off and press the dial to confirm. You can only set Tmax and IPAP (Start) and EPAP (Start) if the lock-out is deactivated (off).

Use the dial to set the values for Tmax, IPAP (Start) and EPAP (Start). Press the dial after each entry to confirm it. Activate lockout
again (if required). To exit the Menu, press the Menu key (back) until Monitor is displayed.

**Physiological alarms**

In the Alarms menu, you can make settings for the physiological alarms below.

**IPAP min:** this alarm is triggered if the device cannot reach set IPAP pressure due to a leak (e.g. because the mask has slipped out of position). You can specify a percentage of set IPAP therapy pressure as the alarm limit.

**VT min:** this alarm is triggered if supply of a minimum volume to the patient can no longer be guaranteed (e.g. in the event of a change in lung impedance). You can specify a minimum volume as the alarm limit.

The alarms are triggered if the alarm limit is undershot in at least three of the previous five breaths.

**The following settings can be made for the issuing of signals.**

- Patient alarms activated
- Patient alarms deactivated
- Acoustic signal muted

There is no alarm sound with this setting, but the alarms are shown in the display and added to the alarm list

**Set alarm values**

1. Enable Physician functions.
2. Press the Menu key to call up the Menu.
3. Use the dial to select the menu item Alarms and press the dial to confirm.
4. Activate the alarms ( ) and press the dial to confirm.
5. IPAP min and VT min can only be set when the alarm is activated (\(\Delta\)).
6. Set the values for IPAP min and VT min using the dial. Press the dial after each entry to confirm. The value hPa cannot be set directly; it results from the percentage given for IPAP min. This is why it has a gray background.
7. Deactivate the alarms again (if required).
8. To exit the Menu, press the Menu key (back)

Statistics

In the Statistics menu you can have actual values, mean values and device usage displayed.

The Actual values display shows current values. The values are updated with each breath.

The Mean values display shows mean values since the device was last started. The values are updated with each breath.

The Device usage display provides information about usage of the device by the patient in question.

The Air Trap Statistics display shows the mean values for the Air Trap Control parameter.

Select a statistic

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the submenu Statistics and press the dial to confirm. Use the dial to select the statistics you want to have displayed and press the dial to confirm.
The Actual values

Tip: The Device usage display consists of two pages (indicated by the down arrow). Move the dial clockwise to display the second page.

To exit the Menu, press the Menu key (back) until Monitor is displayed.

Patient mode
Before you pass the set device to a patient,

you must switch it to Patient mode. This prevents the patient deliberately or inadvertently changing the therapy parameters or device configuration.

Activate patient mode

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the menu item Patient mode and press the dial to confirm.

Activate patient mode

Use the dial to activate Patient mode. The message Patient mode active! Appears. After approx. 3 seconds, the device switches to the default display for the patient
Activate/deactivate auto switch-on

- If Auto switch-on is activated, the device switches on automatically when the patient puts on the mask and starts breathing through it.

1. Operate the device.
2. Press the menu key to call up the Patient menu. Under the menu item Auto switch-on you will see the current setting (On/Off).

To change the setting, use the dial to select the menu item Auto switch-on and press the dial to confirm. The message Auto switch-on ON or Auto switch-on OFF appears for approx. 2 seconds. The display then switches back to the Patient menu. The current setting (On/Off) is shown in the Auto switch-on menu line.

**Tip** The device does not switch off again automatically when the patient takes off the mask. Even if Auto switch-on is activated, the On/Off key must be pressed to switch off the device.

Device configuration

In the Device configuration submenu you can make the following basic settings for the device.

- Set date/time
- Set language
- Reset counter for filter change
- Reset counter for service interval (servicing symbol)
- Reset therapy parameters to factory settings
Reset usage time of device.

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the menu items **Device configuration** > **Date/Time**. Press the dial after each entry to confirm it. Use the dial to set the current values for Date and Time. Press the dial after each entry to confirm it.

---

<table>
<thead>
<tr>
<th>ST</th>
<th>Device configuration</th>
<th>ST</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time</td>
<td></td>
<td>Date</td>
<td>27.03.09</td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td>Time</td>
<td>10:56:21</td>
</tr>
<tr>
<td>Filter change</td>
<td></td>
<td>Set</td>
<td>10:56:45</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Set date / time

Activate your settings by using the dial to select Set and pressing the dial to confirm. The device now adopts your settings.

To exit the Menu, press the Menu key (back) until Monitor is displayed.

Language

You can set the device menu to your language.

Enable Physician functions. Press the Menu key to call up the Menu. Use the dial to select the menu items **Device configuration** > **Language**. Press the dial after each entry to confirm it.
Tip: If a language you do not speak is set, use the menu structure in the Overview to reach the language setting option.

Use the dial to set the desired language and press the dial to confirm. The device returns to Monitor. The selected language is active. To exit the Menu, press the Menu key.

Filter change
- When you have changed the filter in the device, you have to reset the filter change counter.

Reset counter for filter change
1. Press the Menu key to call up the Menu.
2. Use the dial to select the menu items Device configuration > Filter change. Press the dial after each entry to confirm it.
3. Use the dial to select YES and press the dial to confirm. The message: Filter change reset! appears for approx. 2 seconds.

Factory settings
- You can use this menu item to reset all therapy parameters to factory settings. Patient data are retained.
• Only reset therapy parameters if you are sure that the therapy parameters set on the device are no longer required or are stored externally.

Reset therapy parameters
1. Enable Physician functions.
2. Press the Menu key to call up the Menu.
3. Use the dial to select the menu items Device configuration > Factory settings. Press the dial after each entry to confirm it.
4. Use the dial to select YES and press the dial to confirm. A window appears asking you again whether you want to reset factory settings.
5. If you are sure that the therapy parameters on the device are no longer required, set YES here too. The message: Factory settings set! appears for approx. 2 seconds.
6. To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial and then press the dial.

Usage time
• If the device is to be passed to a different patient, you can use this menu item to reset usage time and clear all the patient data (compliance times, device usage, alarm list).
• Only reset usage time if you are sure that the data on the device are no longer required or are stored externally.
Reset usage time
1. Enable Physician functions.
2. Press the Menu key to call up the Menu.
3. Use the dial to select the menu items Device configuration > Usage time. Press the dial after each entry to confirm it.
4. Use the dial to select YES. A window appears in which you are asked again whether you want to reset usage time.
5. If you are sure that the usage time on the device is no longer required, set YES here too. The message: Usage time reset! appears for approx. 2 seconds.

6. To exit the Menu, press the Menu key (back) until Monitor is displayed. You can also select back with the dial and then press the dial.

Autolock
• If the device is in Patient mode or if no settings have been made in Physician mode for 15 minutes with autolock activated, Physician functions are locked.
• In this menu you can deactivate the lock so that the device remains in Physician mode.

Warning! Risk of injury from therapy device being set incorrectly! If the autolock of the therapy device is deactivated, the Physician functions
remain freely accessible and the patient can adjust values. This can lead to incorrect therapy and put the patient at risk.

- Only deactivate the autolock when the patient is under supervision and not adjusting values independently. Ensure that the device is only operated by qualified staff when in this state.

1. Use the dial to select the Autolock submenu.

2. Use the dial to select off or on.

3. Confirm your selection by pressing the dial.

21-Weinnman VENTIlogic LS

VENTIlogic LS
# Left-hand side

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oxygen connection: maximum supply rate: 15 l/min at &lt; 1000 hPa</td>
</tr>
</tbody>
</table>
| 2 | **VENTIlogic LS:**  
Opening for exhaled air when operated with double patient circuit with patient valve; do not seal opening or block in any other way.  
**VENTIlogic plus:**  
Opening is not used with VENTIlogic plus. |

## Front

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 3 | **VENTIlogic LS:**  
Connection for patient’s exhaled air with double patient circuit with patient valve.  
**VENTIlogic plus:**  
Opening is not used with VENTIlogic plus. |
| 4 | Jack: electrical connection for VENTIclick respiratory air humidifier (only leakage ventilation), max. current consumption at 40 V: 600 mA |
| 5 | Jack: electrical connection for oxygen sensor; max. 100 mV DC |
| 6 | Connection: pressure measuring tube (marked blue). Therapy pressure 0 - 50 hPa (only for patient circuit with patient valve) |
| 7 | Connection: control tube for patient valve 0 - 50 hPa (only patient circuit with patient valve) |
| 8 | Device outlet port: outlet for exhaled air at 0 - 45 hPa with patient circuits with patient valve, 0 - 35 hPa with leakage ventilation |
| 9 | Device outlet port: only patient circuits with a diameter of Ø 15 mm - 22 mm are permitted |

## Right-hand side

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Connection for optional attachments, e.g. Analog box D/A; max. current delivery at 5 V: 50 mA</td>
</tr>
<tr>
<td>11</td>
<td>Connection for specialist staff to set therapy parameters using WEINMANNsupport; max. current delivery at 12 V: 50 mA</td>
</tr>
<tr>
<td>12</td>
<td>Slot for MMC or SD card</td>
</tr>
<tr>
<td>13</td>
<td>Connection for power supply-independent operation with VENTIpower</td>
</tr>
<tr>
<td>16</td>
<td>Servicing label: indicates when the next service is due</td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Safety check label: (in Germany only) marks when the next safety check as per §6 of the German law relating to users of medical devices is required</td>
</tr>
<tr>
<td>18</td>
<td>Device inlet port: inlet port for ambient air at room temperature</td>
</tr>
</tbody>
</table>

**Device ID plate (underneath)**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>BF protection class</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Protection class II, protective insulation</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Year of manufacture</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Do not dispose of device in domestic waste!</td>
</tr>
</tbody>
</table>

**SN**

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Serial number</td>
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</tbody>
</table>

**Electrical rating**

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>115 V/230 V ~, 50-60 Hz</td>
</tr>
</tbody>
</table>

**Device operation**

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Device operated with humidifier</td>
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<tr>
<td>Device operated without humidifier</td>
</tr>
<tr>
<td>Symbol</td>
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<tr>
<td>--------</td>
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<tr>
<td><img src="image1" alt="Symbol" /></td>
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<tr>
<td><img src="image2" alt="Symbol" /></td>
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<td><img src="image3" alt="Symbol" /></td>
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<td><img src="image4" alt="Symbol" /></td>
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<td><img src="image15" alt="Symbol" /></td>
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<td><img src="image16" alt="Symbol" /></td>
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<tr>
<td><img src="image17" alt="Symbol" /></td>
</tr>
<tr>
<td>Symbol</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Alarm window:</td>
</tr>
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<td>![Triangle]</td>
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<tr>
<td>![Double Triangle]</td>
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<tr>
<td>![Triple Triangle]</td>
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</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status line:</td>
<td></td>
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<tr>
<td>TA</td>
<td>TA mode active</td>
</tr>
<tr>
<td>S</td>
<td>S mode active</td>
</tr>
<tr>
<td>ST</td>
<td>ST mode active</td>
</tr>
<tr>
<td>T</td>
<td>T mode active</td>
</tr>
<tr>
<td>CPAP</td>
<td>CPAP mode active</td>
</tr>
<tr>
<td>SX</td>
<td>SX mode active (VENTilogo logic LS only)</td>
</tr>
<tr>
<td>SXX</td>
<td>SXX mode active (VENTilogo logic LS only)</td>
</tr>
<tr>
<td>PCV</td>
<td>PCV mode active</td>
</tr>
<tr>
<td>PSV</td>
<td>PSV mode active</td>
</tr>
<tr>
<td>aPCV</td>
<td>aPCV mode active</td>
</tr>
<tr>
<td>VCV</td>
<td>VCV mode active (VENTilogo logic LS only)</td>
</tr>
<tr>
<td>aVCV</td>
<td>aVCV mode active (VENTilogo logic LS only)</td>
</tr>
<tr>
<td>SIMV</td>
<td>SIMV mode active</td>
</tr>
<tr>
<td>Symbol</td>
<td>Significance</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>f</td>
<td>Respiratory frequency</td>
</tr>
<tr>
<td>S</td>
<td>Respiratory phase switch triggered - spontaneous</td>
</tr>
<tr>
<td>T</td>
<td>Respiratory phase switch triggered - mandatory</td>
</tr>
<tr>
<td>B</td>
<td>Trigger for inspiration blocked during expiration</td>
</tr>
<tr>
<td>Ti/T</td>
<td>Proportion of inspiration time in a respiratory cycle</td>
</tr>
<tr>
<td>VT</td>
<td>Tidal volume</td>
</tr>
<tr>
<td>VTi</td>
<td>Tidal volume on inspiration</td>
</tr>
<tr>
<td>VTe</td>
<td>Tidal volume on exhalation</td>
</tr>
<tr>
<td>Ti</td>
<td>Inspiration time</td>
</tr>
<tr>
<td>Te</td>
<td>Exhalation time</td>
</tr>
</tbody>
</table>
| O₂ (21%) | Mean oxygen concentration  
Shown in brackets: measuring cell not calibrated, perform oxygen calibration |
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main window (Monitor):</strong></td>
<td></td>
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<tr>
<td>IPAP</td>
<td>Inspiration pressure</td>
</tr>
<tr>
<td>EPAP / PEEP</td>
<td>Exhalation pressure</td>
</tr>
<tr>
<td>PSIMV</td>
<td>Specifies the inspiration pressure level of the back-up ventilation (SIMV mode only)</td>
</tr>
<tr>
<td>hPa</td>
<td>Pressure given in hectopascals; 1.01973 hPa corresponds to 1 cm H₂O.</td>
</tr>
<tr>
<td>f</td>
<td>Respiratory frequency</td>
</tr>
<tr>
<td>S</td>
<td>Respiratory phase switch triggered - spontaneous</td>
</tr>
<tr>
<td>T</td>
<td>Respiratory phase switch triggered - mandatory</td>
</tr>
<tr>
<td>B</td>
<td>Trigger for inspiration blocked during expiration</td>
</tr>
<tr>
<td>Ti/T</td>
<td>Proportion of inspiration time in a respiratory cycle</td>
</tr>
<tr>
<td>VT</td>
<td>Tidal volume</td>
</tr>
<tr>
<td>VTi</td>
<td>Tidal volume on inspiration</td>
</tr>
<tr>
<td>O₂ (21%)</td>
<td>Mean oxygen concentration Shown in brackets: measuring cell not calibrated, perform oxygen calibration</td>
</tr>
</tbody>
</table>

**Markings on the packaging**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Therapy device:</strong></td>
<td></td>
</tr>
<tr>
<td>SN</td>
<td>Serial number of device</td>
</tr>
<tr>
<td>-40°C to +70°C</td>
<td>Permitted temperature for storage: -40 °C to +70 °C</td>
</tr>
<tr>
<td>0-95 %</td>
<td>Permitted humidity for storage: max. 95 % relative humidity</td>
</tr>
<tr>
<td>☂</td>
<td>Protect pack from wet</td>
</tr>
<tr>
<td>🍾</td>
<td>Do not tip over or drop pack</td>
</tr>
</tbody>
</table>
VENTIlogic LS
with leakage circuit WM 27100
- VENTIlogic LS basic device with rechargeable battery, WM 27130
- Power cord, WM 24177
- Protective bag for VENTIlogic LS, WM 27106
- Retrofit set for leakage circuit, packed, WM 15545, consists of:
  - Leakage circuit adapter, WM 27122
  - Drying adapter, WM 24203
  - Leakage circuit, WM 24130
- Info and replacement parts set, WM 15494, consists of:
  - Coarse dust filter, WM 24880
  - Fine filter, packed, WM 15026
  - Coarse dust filter, fan, WM 27759
  - O₂ coupling, WM 27166
  - Allen wrench, size 3, WM 24708
  - Patient passport, WM 66810
- User Manual, EN, WM 66802

VENTIlogic LS
with single patient circuit with patient valve WM 27700
- VENTIlogic LS basic device with rechargeable battery, WM 27130
- Power cord, WM 24177
- Protective bag for VENTIlogic LS, WM 27106
- Single patient circuit with patient valve, WM 27181
- Test adapter, packed, WM 27140
- Adapter leakage ventilation, packed, WM 27199
- Info and replacement parts set, WM 15494, consists of:
  - Coarse dust filter, WM 24880
  - Fine filter, packed, WM 15026
  - Coarse dust filter, fan, WM 27759
  - O₂ coupling, WM 27166
  - Allen wrench, size 3, WM 24708
  - Patient passport, WM 66810
- User Manual, EN, WM 66802
Intended use

- **VENTIlogic LS** is used for invasive and non-invasive life-support ventilation.
- The device can be used in both static or mobile operation, both at home and in appropriate hospital departments.

**Note**: **VENTIlogic LS** is not a ventilator for intensive care purposes. The device can be used for weaning off invasive ventilation and converting to mask ventilation. It is used on patients with medium to severe acute and chronic global respiratory insufficiency with a tidal volume of at least 50 ml and a body weight of at least 5 kg.
• **VENTIlogic plus** is used for invasive and non-invasive life-support ventilation. The device can be used in both static or mobile operation, both at home and in appropriate hospital departments.

*Note: VENTIlogic plus is not a ventilator for intensive care purposes. The device can be used for weaning off invasive ventilation and converting to mask ventilation. It is used on patients with medium to severe acute and chronic global respiratory insufficiency with a tidal volume of at least 50 ml and a body weight of at least 5 kg.*

- Obstructive respiratory disorders, such as COPD
- Restrictive respiratory disorders such as scolioses, deformities of the thorax
- Neurological, muscular and neuromuscular disorders, such as muscular dystrophies, pareses of the diaphragm etc.
- Central respiratory regulation disorders
- Hypoventilation syndrome associated with obesity

**Providing the therapy pressure**

- An electronically-controlled blower draws in ambient air through a filter and delivers it to the device outlet port. From here, air flows through the patient circuit and the patient/ventilator interface to the patient.
- Sensors detect the pressure at the patient/ventilator interface and in the patient circuit, as well as the respiratory phase change. The blower accordingly provides the respiratory volume and the IPAP and EPAP / PEEP pressures prescribed by the doctor.

**Display and operation**

- The display shows the therapy mode and, the currently applied values for CPAP, IPAP and EPAP / PEEP, respiratory frequency (f) and volume.
- Spontaneous or mechanical respiratory phase switches and the pressure change are also shown in graphical form.
- Ventilation parameters can be set in standby mode and in ventilation mode.
- The device is operated by a number of keys that give direct access to the most important parameters, such as IPAP, EPAP / PEEP, frequency, inspiration time and volume.
- A dial is used to navigate through the menu.
- Parameters are shown in an LC display.
- A key code is used to prevent therapy values from being adjusted inadvertently. Operation is locked when a padlock symbol is shown on the display.
• In the Physician menu, it is possible to show ventilation curves such as flow curves and pressure/volume loops (VENTIlogic LS only) in addition to therapy values.

Operating status
• Three operating states are possible on the therapy device: on, off and standby.
• If the device is switched on, therapy is in progress.
• In standby, the fan is switched off but the device is ready for immediate operation by briefly pressing the on/off switch, provided that the patient circuit is connected correctly. The settings on the device can be adjusted in standby mode.
• If the device is switched off completely, the fan and display are also switched off and no settings can be adjusted on the device.

• Leakage ventilation When leakage ventilation is used, an exhalation system continuously flushes out the CO2-containing exhaled air.

• Valve ventilation In this case, exhalation is controlled by the patient valve. When the single patient circuit with patient valve is used, the patient's exhaled air escapes into the environment through the patient valve. The device controls the patient valve by means of the valve control tube.

• When the double patient circuit with patient valve is used (VENTIlogic LS only), an exhalation tube also routes exhaled air into the ambient air through the device.

Therapy modes
• Leakage ventilation: TA, S, T, ST, SX (VENTIlogic LS only), SXX (VENTIlogic LS only), CPAP

• Valve ventilation: PCV, aPCV, PSV, VCV (VENTIlogic LS only), aVCV (VENTIlogic LS only), SIMV


### Leakage ventilation

<table>
<thead>
<tr>
<th>Mode</th>
<th>Adjustable before activation</th>
<th>Target values*</th>
<th>Trigger sensitivity</th>
<th>Trigger lockout</th>
<th>AirTrak Control</th>
<th>Pressure rise</th>
<th>Volume compensation</th>
<th>LIAM (insufflation)</th>
<th>TA settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA mode</td>
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<td>S mode</td>
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<td>T mode</td>
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<td>ST mode</td>
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<td>SX mode*</td>
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<td>SXX mode*</td>
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<td>CPAP mode</td>
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</table>

*These modes/settings are only available on VENTIlogic LS.

- **The mode required for therapy is set on the device by the doctor supervising treatment.** The doctor can activate volume compensation in pressure-controlled modes S, T, ST, SX (VENTIlogic LS only), SXX (VENTIlogic LS only), TA, PCV, PSV and aPCV. A minimum volume and maximum pressure rise are set to achieve this.

- **If the minimum volume is undershot, the device automatically and continuously increases pressure up to the set maximum pressure (therapy pressure + max. pressure rise).**

- **In controlled modes T, PCV and VCV (VENTIlogic LS only) and in assisted-controlled modes ST, PSV, aVCV (VENTIlogic LS only) and**
*aPCV, the doctor can set respiratory frequency in the range from 5 to 45 breaths per minute and inspiration time in the range from 15 % to 67 % of the respiratory period.*

**Valve ventilation**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Adjustable before activation</th>
<th>Trigger sensitivity</th>
<th>Trigger lockout</th>
<th>Pressure rise</th>
<th>Volume compensation</th>
<th>LIAM (insufflation)</th>
<th>VCV/aVCV settings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCV mode</td>
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<td>aPCV mode</td>
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<td>PSV mode</td>
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<td>SIMV mode</td>
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</table>

* These modes/settings are only available on Ventillogic LS.

- In **S**, **ST**, **SX** (Ventillogic LS only), **SXX** (Ventillogic LS only), **PSV**, **aPCV**, **aVCV** (Ventillogic LS only) and **SIMV** modes, the doctor can select one of 8 trigger stages for inspiration and one of 14 trigger stages for exhalation (not with **aPCV**, **aVCV**).

- **In ST mode** the expiratory trigger can be deactivated. The switch to exhalation is then on a time-controlled basis.
• **In adaptive mode TA**, the device automatically adapts to the individual respiratory rhythm and the patient’s individual breathing pattern and provides the therapy pressure at precisely this rhythm and pressure curve.

• If no breath into the device is taken in **S mode**, therapy pressure is automatically provided at a **minimum frequency of 5 breaths a minute**.

• CPAP mode does not provide any respiratory assistance. The therapy device provides a constant positive therapy pressure in this mode.

• The display shows therapy pressure and, as a function of mode, current values for IPAP and EPAP / PEEP and respiratory frequency (f).

• Depending on the patient circuit used, tidal volume (VT) is displayed in the case of a leakage system and tidal volume on inspiration (VTi) in the case of valve ventilation.

• When the single patient circuit is used, only tidal volume on inspiration can be measured, whilst with the double patient circuit (VENTIlogic LS only), total tidal volume can be measured.

• **Spontaneous or mechanical respiratory phase switches and the pressure change are also shown in graphical form.**

**TA settings (TA mode only)**

• TA mode is an adaptive, time-controlled ventilation mode.

• Ventilation frequency, the I:E ratio and pressure profile on inspiration are automatically adapted to the individual patient’s breathing.

• At the start of therapy, the device analyzes the patient’s spontaneous breathing for 10 – 20 breaths.

• A constant pressure of 4 hPa is applied at the patient/ventilator interface during this analysis.

• The device adopts the flow pattern on inspiration and determines respiratory frequency and I:E ratio.

• As soon as the device detects a regular respiratory pattern, this respiratory pattern is converted into an individual pressure profile.

• Therapy pressure is provided in accordance with this individual pressure profile to synchronize with the patient’s breathing. The patient is gently guided towards controlled breathing.

• In the case of mild asynchronicities, the device corrects respiratory frequency. In the case of more severe asynchronicities (respirator fighting), the device automatically performs a further analysis of the respiratory pattern and calculates a new pressure profile.

• For the device to be able to calculate an optimum pressure profile, the parameters below need to be specified in the TA settings menu.
• The parameter Type specifies the basic mechanics of the patient's lung. This parameter is required to calculate the speed of pressure rise.
  • The following settings are possible:
    – O: obstructive (relatively high speed of pressure rise)
    – N: normal (moderate speed of pressure rise)
    – R: restrictive (relatively low speed of pressure rise)
  • Using the parameters fTA and TTA you specify a framework within which the device can select and if necessary vary ventilation frequency. (Example: you have selected fTA = 15 and TTA = 5. This means that minimum frequency is at 10 and maximum frequency at 20 breaths per minute).
  • Values of between 5 and 45 breaths/minute can be set for fTA . Consequently, if the value 9 is set for fTA and the value 5 for TTA , the minimum permitted respiratory frequency is not 4/min, but 5/min.
  • If the device fails to detect a regular respiratory pattern in the analysis phase, the patient is ventilated using a default pressure profile and the frequency fTA.

Target values (SX and SXX modes on VENTIlogic LS)

• Ventilation modes SX and SXX are an extension of S mode.
• By specifying Target values for Inspiration time (SX mode) or for inspiration and exhalation time (SXX mode), you can manage the patient’s spontaneous respiratory rhythm.
• In the case of brief deviations from the target values, e.g. as a result of sighing or a brief intermediate breath, switching between IPAP and EPAP follows the patient’s respiration in analogy to S mode.
• If longer deviations occur, the device guides the patient back to the set respiratory rhythm by means of gradual restriction of inspiration / exhalation time.
• As a consequence, SX and SXX modes allow the long-term ventilation objective to be secured with maximum respiratory freedom for the patient.

Target values in SX mode

• In SX mode, you set target time for inspiration TTi as a target value.
• You specify a tolerance zone (target zone) for this target time using the value TTi . Example: if you have set 1.4 s for TTi and 0.3 s for TTi , the target zone is between 1.1 and 1.7 s.
• If the patient’s inspiration time is outside the target zone for several respiratory phases, VENTIlogic LS returns the patient’s respiratory rhythm to the target zone (change: 100 ms/breath).

Target values in SXX mode

• In SXX mode you can set the target time for exhalation TTe in addition to the values TTi and TTi.
• If exhalation time is above TTe for several respiratory phases, VENTillogic LS guides the patient’s exhalation time back to TTe (change: 100 ms/breath).

SIMV mode

• SIMV mode (synchronized intermittent mandatory ventilation) is a mixture of mandatory and assisted ventilation.
• If there is no spontaneous respiration the device will mandatorily ventilate the patient once the Tapnea time has elapsed at a respiratory frequency of f backup, a ratio of Ti/Tba (backup) and an inspirational pressure level of PSIMV.
• In the case of spontaneous respiration the device switches to assisted ventilation using the set IPAP value.
• The pressure level will then fluctuate cyclically at a frequency of f SIMV, a ratio of Ti/Tba and an inspirational pressure level of PSIMV.
• The respiratory frequency in this case is dictated by the patient.
You can set the SIMV mode parameters within the following limits:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lowest value</th>
<th>Highest value</th>
</tr>
</thead>
<tbody>
<tr>
<td>( P_{SIMV} )</td>
<td>6.0 hPa</td>
<td>45.0 hPa</td>
</tr>
<tr>
<td>IPAP</td>
<td>6.0 hPa</td>
<td>45.0 hPa</td>
</tr>
<tr>
<td>PEEP</td>
<td>0.0 hPa</td>
<td>(- IPAP - 2.0 \text{ hPa}^{(2)} - P_{SIMV} - 2.0 \text{ hPa}^{(2)} - 20.0 \text{ hPa}^{(2)})</td>
</tr>
<tr>
<td>( f_{backup} )</td>
<td>4.1/min</td>
<td>45 1/min</td>
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<tr>
<td>( T_{I/\text{T}_{ba}} )</td>
<td>15 %</td>
<td>67 %</td>
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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ventilation mode</th>
<th>Leakage ventilation</th>
<th>Valve ventilation</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>TA</td>
<td>S</td>
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<tr>
<td>Trigger sensitivity</td>
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<td>Trigger lockout</td>
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<td>AirTrap Control</td>
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<td>Volume compensation</td>
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<tr>
<td>LIAM (insufflation)</td>
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<tr>
<td>(a)VCV settings*</td>
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<td>Target values*</td>
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<tr>
<td>TA settings</td>
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<tr>
<td>Auto switch-on (can only be adjusted in patient mode)</td>
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</table>

* These modes/setting are only available on VENTil logic LS.
Auto switch-on (only leakage ventilation)

- The device has an automatic switch-on function. If this is activated, the device can be switched on by taking a breath into the breathing mask.
- The device is still switched off using the On/Off key.

Uninterrupted power supply (UPS)

- A built-in battery ensures an uninterrupted power supply in the event of a power outage.
- Battery running time will depend on the load and operating temperature in question.
- The internal battery is automatically charged or maintained in a charged state as long as the device is supplied with power.

Mobile power supply

- There is the additional option of a mobile power supply by means of one or more replaceable batteries which can be changed while the device is in operation and which are available as accessories.

LIAM (insufflation)

- The Lung Insufflation Assist Maneuver function allows a higher volume to be administered to the patient if the corresponding key is pressed; this supports coughing.
- This function has to be enabled by the doctor supervising treatment.

Nurse call and remote alarm

- The device has a remote alarm connection to support the monitoring of patient and device, especially when VENTIlogic LS is used for life-support ventilation.
- All high and medium-priority alarms, together with the No power supply alarm are passed to this connection.
- All other alarms are displayed only on the device itself.
- The remote alarm connection can be used to connect the device to the VENTIremote alarm remote alarm case.
- In hospital, the device can be connected directly to the hospital's own internal alarm system.

Recording therapy data

- Therapy data are stored on a removable SD card.
- The WEINMANNsupport PC software can be used to enable a doctor to evaluate the therapy data.
Analog output of therapy data
• The device has an interface for connecting to analog box WM 27560.
• It is used for a time-synchronized display of therapy data such as pressure, flow, leakage and volumes e.g. on a PSG.
• Mode-specific data such as trigger times in S mode or efforts and fightings in TA mode can also be displayed

Set up and connect the device
• Set up the device on a flat surface, e.g. on a bedside cabinet or on the floor next to the bed.
• Maintain a distance of at least 5 cm between the wall and the rear of the device, as the air inlet is at the rear of the device.
• A distance of at least 5 cm should also be maintained from the left-hand side of the device to allow the heat produced by the device to escape.
• Do not cover the device with blankets etc. The air inlet would be blocked and the device could overheat. This may lead to inadequate therapy and to damage to the device

Connect the power cord to the power connector of the device.
1. To do this, lift the cable-securing clip, plug the plug into the power connector and flip the cable-securing clip over the plug. Always secure the power plug with the cable-securing clip to prevent the plug being removed by mistake.
2. Connect the power cord to a power supply socket. The therapy device is designed for a supply voltage of 115 V ~ and 230 V ~.
3. The green LED for power supply comes on and the start screen appears in the display.

4. Now leave the device connected to the power supply for at least 6 hours to charge the internal battery. The device is now operational.
Patient/ventilator interfaces

- The therapy device is intended for operation with nasal masks, oronasal masks and full-face masks as well as with endotracheal cannulas and endotracheal tubes.
- It is essential to follow the instructions for use of the patient/ventilator interface in question.
- **When using valve ventilation, patient/ventilator interfaces with leakage openings may not be used.** Always use a patient valve. Inspiration and exhalation is controlled using the patient valve.

vented mask for leakage ventilation and non vented mask for valve ventilation

- **Mouthpiece ventilation (MPV)** Ventilation modes MPVp and MPVv are a pressure-controlled and a volume-controlled mode for patients with spontaneous breathing who are not subject to invasive ventilation. The MPV modes are typically used with a mouthpiece. The patient has to be capable of closing his or her lips adequately for this purpose.
A: Mouth piece devices for NPPV.B: Mouthpiece with lip-seal for NPPV.C: Patient using an angled mouthpiece for NPPV.D: Patient using mouthpiece with lip-seal for NPPV.

Set MPV (WM 27647)

- The Set MPV contains everything required for the mouthpiece ventilation and to support the patient circuit safely and securely in any position:
  - Set MPV, WM 27647 consisting of:
    - Flexible arm
    - Patient circuit 15 mm
    - Mouthpiece
**Single patient circuit**
- The single patient circuit consists of a ventilation tube, a pressure-measurement tube, a valve control tube and a patient valve. The patient/ventilator interface must be connected directly to the patient valve.
- The patient valve may not be covered when the device is in operation, otherwise the exhaled air may not be routed away, obstructing breathing.

**Proceed as follows to connect the single patient circuit to the therapy device.**
1. Plug the free end of the ventilation tube (2) onto the device outlet port.
2. Now connect the blue connector stub of the pressure-measurement tube (1) to the connection of the device which is likewise blue and marked
3. Connect the valve control tube (3) to the connection of the device marked
4. Connect the patient valve (4) to the patient/ventilator interface, e.g. a mask.

**Double patient circuit (VENTIlogic LS only)**
- In addition to the ventilation tube which delivers air to the patient, the pressure-measurement tube and the valve control tube, the double patient circuit also has an exhalation tube which routes exhaled air back to the device and into the ambient air.
- On the double patient circuit, the patient valve is located on the exhalation tube.
Proceed as follows to connect up the double patient circuit.

1. Plug the ventilation tube (1) onto the device outlet port of the VENTIlogic LS.
2. Plug the exhalation tube (3), on the end of which is the patient valve (4), onto the device inlet port for exhaled air underneath the device outlet port.
3. Now connect the blue connector stub of the pressure-measurement tube (2) to the connection of the device which is likewise blue and marked .

connect up the double patient circuit to the therapy device.

- The pressure-measurement tube is the same length as the ventilation tube and leads to the Y-connecting piece where the ventilation tube and the exhalation tube are brought together.

4. Connect the valve control tube (5) to the connection of the device marked . The valve control tube leads straight from the patient valve to the connection on the device and is therefore shorter than the pressure measuring tube.
5. Connect the patient/ventilator interface, e.g. a mask.

Connect leakage ventilation

Proceed as follows to connect up the leakage circuit.

1. Plug the click adapter of the patient circuit onto the ventilation outlet on the device.
2. Connect the patient/ventilator interface, e.g. a mask.
3. It is essential to follow the instructions for use of the patient/ventilator interface and of the exhalation system.
Connect the leakage circuit.

Connect leakage adapter using standard tapered connector

• For leakage operation, an adapter is available as an option to allow tubes with sleeves with an internal diameter of Ø 22 mm and a pressure-measuring tube with an internal diameter ≤ Ø 5 mm to be used.

If the device is equipped with this adapter, proceed as follows to connect the tube:

1. Push the ventilation tube onto the device outlet port of the therapy device.
2. Now connect the pressure-measurement tube to the connection on the device marked with a symbol.
3. Connect the patient/ventilator interface, e.g. a mask.
4. It is essential to follow the instructions for use of the patient/ventilator interface and of the exhalation system.
5. Note that maximum flow rate and the accuracy of dynamic pressure may deviate if you are not using Weinmann tubes.

Information relating to a separate exhalation system

• Always use an exhalation system
• Used air containing carbon dioxide escapes from the patient/ventilator interface (e.g. a mask) through the exhalation system.
• Without an exhalation system, the CO2 concentrate in the patient/ventilator interface and the ventilation tube would rise to critical values and thus obstruct breathing.
• An exhalation system can either be integrated in the patient/ventilator interface, e.g. a mask, or must be plugged in between the patient/ventilator interface and the patient circuit in the form of an accessory.
• If the patient/ventilator interface, e.g. the mask, does not have an exhalation system, a separate exhalation system, e.g. Silent flow 2, must be used.
• The exhalation system also allows a patient to breathe through his or her nose for a short time, even if the device were to fail.
• In the case of full-face masks, breathing in the event of a fault is through an emergency exhalation valve on the mask.

**Connect separate exhalation system (only with leakage ventilation)**

**To connect a separate exhalation system, proceed as follows.**

1. Plug the exhalation system into the sleeve of the circuit.
2. Connect the patient/ventilator interface to the exhalation system.
3. Follow the instructions for use for the exhalation system and for the patient/ventilator interface.

**Connect humidifier**

- An optional tube adapter is available as an accessory for the use of Fisher & Paykel humidifiers.
- Be aware that technical data change when third-party humidifiers are used.

**Leakage ventilation**

- We recommend humidifier HC 150 from Fisher & Paykel with the corresponding patient circuit.
- Follow the associated instructions for use..
Valve ventilation

• We recommend humidifiers HC 850 or HC 550 from Fisher & Paykel with the corresponding patient circuit or humidifier PMH5000 from Wilamed.
• Follow the associated instructions for use.
AIRcon respiratory gas humidifier

Heat and Moisture Exchange Filter

- Heat and Moisture Exchange Filter
- Filtration Efficiency: 99.99%
- Tidal volume: 250-1500ml
- Absolute Humidity (500ml Vt, 20 BPM): 30.6mg H2O/L.
- Dead Space: 45ml
**Connect bacteria filter**
- The bacteria filter represents an additional resistance in the air flow.
- This can cause a change to the response characteristics of the trigger.
- If a bacteria filter is connected subsequently, the doctor must therefore check the device parameters and may need to reset them.
- The bacteria filter may not be operated on the device for more than 24 hours. Follow the instructions relating to period of use.
- If the therapy device is intended for use by several patients (e.g. in a hospital), a bacteria filter must be used to prevent infections.

**Leakage ventilation**
- In combination with leakage ventilation, use bacteria filter WM 24148.
- If the bacteria filter is used alone, it is connected directly to the device outlet port and the ventilation tube is plugged onto the bacteria filter.

![Bacteria filter](image)

**Valve ventilation**
- In combination with valve ventilation, use bacteria filter WM 24476.
- If the bacteria filter is used alone, it is connected directly to the device outlet port and the ventilation tube is plugged onto the bacteria filter.

**Combination with a humidifier**
1. Connect the bacteria filter directly to the therapy device.
2. Connect the humidifier to the outlet of the bacteria filter.
3. Connect the patient circuit to the humidifier.

**Combination with an oxygen sensor**
1. Connect the oxygen sensor directly to the therapy device.
2. Connect the bacteria filter to the outlet of the oxygen sensor.
3. Connect the patient circuit to the bacteria filter.

**Combination with an oxygen sensor and a humidifier**
1. Connect the oxygen sensor directly to the therapy device.
2. Connect the bacteria filter to the outlet of the oxygen sensor.
3. Connect the humidifier to the outlet of the bacteria filter.
4. Connect the patient circuit to the humidifier. WM 24148  WM 24476

**Supplying oxygen**
- If oxygen is being supplied to the respiratory flow, smoking and naked flames are forbidden. Risk of fire. The oxygen can accumulate in clothing, bed linen or hair. It can only be removed by thorough ventilation.
- To supply oxygen, use only the therapy device connection provided for this purpose.
- The therapy device has a safety valve which shuts off the oxygen supply in the event of a fault, otherwise the oxygen supply cannot be stopped automatically if a fault occurs.
- Never supply oxygen via masks or the T-adapter.
- Supplying oxygen via a connection not intended for this purpose leads to an erroneous volume display, as the oxygen flow cannot be included in the measurement.
- A supply rate of max. 15 l/min at < 1000 hPa pressure at the inlet for the oxygen supply is permitted.
- Use an oxygen sensor to monitor oxygen supply.
- The oxygen source must have an independent flow regulation device. Ensure that you only set the oxygen flow rate prescribed by the doctor on your oxygen supply device.
- It is essential in this case to follow the safety instructions for handling oxygen as well as the instructions for use of the oxygen device used.
- If the oxygen is humidified before being supplied, a tank with an overpressure valve must be used, otherwise an overpressure will result in the event of faulty operation which could lead to the
humidification tank bursting or to the oxygen supply tubes slipping off.

- Oxygen can be supplied via an oxygen concentrator (e.g. Weinmann Oxymat 3), via the central gas supply system (only with corresponding pressure reducer) of a hospital, in the form of liquid oxygen with a continuous flow or of an oxygen cylinder with a corresponding pressure reducer.

**Proceed as follows to supply oxygen:**

1. Switch on the therapy device.
2. Connect the O2 coupling supplied to the connector stub provided on the therapy device.
3. Connect the oxygen source to the O2 coupling.
4. Start the supply of oxygen. The device can now be operated normally.

![O2 coupling](image)

**Proceed as follows to end supply of oxygen:**

1. Shut off the oxygen supply.
2. Continue operating the device for a while without an oxygen supply to flush the remaining oxygen out of the device. If this instruction is not followed, there is a risk of fire in the event of a malfunction.
3. Remove the adapter for the oxygen supply from the device.
4. Switch off the device. The safety valve for the oxygen supply shuts off the oxygen supply.

**Measure oxygen concentration (only valve ventilation)**

- The oxygen sensor can only be used in conjunction with valve ventilation.
• During measurement, oxygen concentration is averaged over several breaths and displayed.
• Measured values depend on therapy pressure and on the temperature of ambient and respiratory air.
• This is not a FiO2 measurement, but the mean value of oxygen concentration on inspiration.

1. The adapter is delivered in three parts: the oxygen sensor (1), the T-adapter (3) and an air management adapter (2). Screw the air management adapter onto the oxygen sensor.

![Image](image1)

Measure oxygen concentration

2. Plug the oxygen sensor (1) and air management adapter into the T-adapter (3).

![Image](image2)

Measure oxygen concentration

3. Plug the T-adapter (3) onto the device outlet port (5).
4. Connect the sensor (1) to the oxygen measuring jack (4) with the aid of the cable.
5. Connect the patient circuit - with a bacteria filter if required - as shown in the illustration.
6. Calibrate the oxygen sensor (only valve ventilation).
Operation in the event of a power failure

- If the power supply should ever fail, **the internal battery of the therapy device automatically assumes supply of the device.**
- The message No power supply appears.
- **The green power supply LED goes out.**
- The battery operating time will depend on the load and temperature range.
- **As soon as the power supply is restored, the device is automatically supplied from the power supply again and the internal battery is charged.**
- The green power supply LED comes on and the consecutive segments in the battery symbol indicate the charging process in the display.
- **If you are using a replaceable battery,** then in the event of a power outage, the replaceable battery will be used first and only then the internal battery.

![using a replaceable battery](image)

- When the batteries are being charged, the sequence is reversed.
- If the alarm Battery capacity critical appears, action is required. In this case, only about 25% capacity is left. This is enough for about 15 minutes. Keep an alternative ventilation option to hand.
- If the alarm Battery capacity highly critical appears, there is less than 10% capacity remaining. The device will switch itself off in a few minutes. Use the alternative ventilation option at once.

**Operation**

**Function keys**

- The following functions can be called up directly in ventilation mode by pressing the relevant key on the device.
- Acknowledge alarms (1)
- LIAM (insufflation) (2)
• After these keys are pressed, the corresponding menu appears in the display.
• You can navigate within the menu using the dial.
• The other functions (3) can only be operated by the doctor.

Function keys

Menu key
• Use the menu key to switch from Monitor to Menu.
• Current values during therapy are displayed in Monitor.
• You can make settings to the device in Menu.
• The menu key has other functions (e.g. back) depending on context.
• The current function is always displayed on the left of the display next to the menu key.

Acknowledge alarm
• Use the alarm acknowledgement key to acknowledge an acoustic alarm and mute it for 120 seconds.

Navigating with the dial
• The dial (1) is the central control of the therapy device.
• You can use the dial to select menu items, navigate within the menu windows and set values for individual menu items.
• To familiarize yourself with navigation using the dial, we recommend switching to Menu first. Press the menu key (2) to do so. You can then try out the functions described below.
Navigating with the dial

Select menu items
- Move the dial clockwise to move the selection bar in the display downwards.
- Move the dial anticlockwise to move the selection bar in the display upwards.
- Press the dial to confirm selection of a menu item and to open the corresponding submenu or to select a value you want to change.

Set values
- Move the dial clockwise to increase a value.
- Move the dial anticlockwise to decrease a value.
- Press the dial to save a value.

Exit menu item
- Move the dial clockwise until the selection bar in the display is on back, cancel or close depending on context.
- Then press the dial.
- The display switches back to the next menu up.
- Alternatively, you can exit a menu item by pressing the menu key (back, cancel or close will appear in the display to the left of the menu key depending on context).
Select night mode
• If you press the dial during therapy, you will activate night mode.
• The display then goes dark so that only the bar chart with the pressure display is visible.
• Therapy continues as normal.
• The display switches back on if you press the dial again or any other key.
• The display switches back on automatically if an alarm situation arises.

Operating states
• Three operating states are possible on the therapy device: on, off and standby. If the device is switched on, therapy is in progress. In standby, the blower is switched off, but the device is immediately operational with a brief press of the On/Off key as long as the patient circuit is connected correctly.
• Settings can be made on the device in standby mode. If the device is switched off completely, the blower and the display are likewise switched off and no settings can be made on the device.
• Note On standby, the display switches off if it is not used for 5 minutes (applies only in patient mode).

Starting up

1. Connect the device to the power supply with the aid of the power cord. The standby screen appears in the display after about 5 seconds.
2. First, perform a function check.
3. Connect the patient circuit to the patient / ventilator interface.
   It is essential to follow the relevant instructions for use for the patient/ventilator interface, the patient circuit and, if appropriate, the exhalation system.
Starting up

**Caution!** Always use a separate exhalation system for leakage ventilation (e.g. Silent flow leakage ventilation), otherwise the CO2 concentration would rise to critical values in the patient/ventilator interface and tube and thus obstruct the patient's breathing.

- Always use a separate exhalation system for leakage ventilation (e.g. Silent low leakage ventilation), otherwise the CO2 concentration would rise to critical values in the patient/ventilator interface and tube and thus obstruct the patient's breathing.

4. To switch on the device, press the On/Off key briefly. The device is now in ventilation mode. The patient menu can be accessed via the menu key.

- When Auto switch-on (only with leakage ventilation) is activated, you can also put on the patient/ventilator interface and switch on the therapy device by taking a breath.
To switch on the device, press the On/Off key briefly.

- The operating hours and the Weinmann software version appear in the display for about 3 seconds.
- The device starts to pump air through the patient circuit. The display switches to the default display.

Displays on screen

- **Ventilation parameters such as set therapy mode, therapy pressures (CPAP pressure only in CPAP mode) in hPa, the selected patient circuit and current respiratory frequency in 1/min are shown in the display.**
- Note: 1.01973 hPa correspond to 1 cm H2O.
- If O2 supply is activated, this is likewise shown in the display by the O2 symbol.
• Oxygen concentration is shown in %.
• The bar chart shows the pressure curve for inspiration and exhalation.
• The respiratory phase change display shows whether the current respiratory phase was triggered spontaneously by the patient (S) or by the machine (T).
• Depending on respiratory phase, the display switches from left (inspiration) to right (exhalation).

Handling batteries

• The device is equipped with an internal battery which supplies the therapy device with power in an emergency.
• The therapy device can also be equipped with a replaceable battery available as an accessory.
• The batteries are charged automatically as soon as the therapy device is connected to the electricity supply.
• The therapy device always charges the internal battery first, followed by the replaceable battery (if present).
• Run the batteries on mains electricity for at least 12 hours before using for the first time.
• The batteries have no memory effect. This means you can charge the batteries even if they are not empty.
• In typical use, the batteries have a service life of at least 300 charge/discharge cycles.
• If the life of the batteries is exhausted before that, the message Service life ended.
• Have internal battery replaced/Have replaceable battery replaced appears in the display.
• The battery is a learning system and with prolonged consistent use, its display becomes more accurate.
• Connect device to the power supply. The charging process starts automatically.
• If the display is no longer flashing and/or the display is showing 100 % capacity, the relevant battery has been charged.
• If you have a replaceable battery, you can now disconnect the device from the electricity supply for mobile use.
• **When the device is switched on, you can read off the capacity of the battery in the default display:**
Battery menu

- This menu gives you a summary of the state of any batteries present.
- In the patient menu, select the Battery menu item using the dial:
- Internal battery: always present and supplies the device with power in an emergency.
- Replaceable battery: available as an option and allows mobile use of the device independent of an electricity supply.
- The display is continuously updated.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Battery green]</td>
<td>Battery display green: battery capacity over 25 %</td>
</tr>
<tr>
<td>![Battery orange]</td>
<td>Battery display orange: battery capacity below 25 %</td>
</tr>
<tr>
<td>![Battery red]</td>
<td>Battery display red: battery capacity below 10 %</td>
</tr>
<tr>
<td>![Battery not ready]</td>
<td>Battery not ready for use: – battery defective or – battery too cold or – battery too hot</td>
</tr>
<tr>
<td>![Battery not present]</td>
<td>Battery not present</td>
</tr>
</tbody>
</table>
Operation with replaceable battery

- You can change the battery both with the device switched off and during operation.
- Only remove the replaceable battery.
- The internal battery may only be replaced by the manufacturer, Weinmann, or an authorized specialist dealer.
- Use only genuine Weinmann replaceable batteries.

1. Press down the latch of the replaceable battery and keep it depressed.
2. Remove the replaceable battery.
3. Push the replaceable battery into the device until you hear the latch engage.
4. When the device is switched on, the symbol for the replaceable battery appears in the status line and a beep sounds.
5. Use the status line and the Battery menu to see the charge status of the replaceable battery.

**Activate/deactivate Auto switch-on (only leakage ventilation)**

- When Auto switch-on is activated, the therapy device switches on automatically as soon as you breathe into the patient circuit.

The device does not switch off again automatically when the patient takes off the patient/ventilator interface. You can only switch off the therapy device using the On/Off key.

<table>
<thead>
<tr>
<th>ACTIVATE/DERACTIVATE AUTO SWITCH-ON</th>
</tr>
</thead>
</table>

- **Activate/deactivate Auto switch-on**
  - Start up the therapy device.
  - Press the menu key to do so.
  - The patient menu appears in the display.
  - Use the dial to select the menu item Auto switch-on and confirm the selection by pressing the dial. Now select on or off using the dial. Confirm the selection by pressing the dial. The selection bar switches back to Auto switch-on. The current setting (on/off) is now shown again in the Auto switch-on menu line.
  - Exit the menu again by pressing the menu key, now assigned the back function.

**Alarm list**

- Storage of alarms: All alarm types listed in the tables “Physiological alarms” and “Technical alarms” are recorded in an alarm list with date, time and duration once the alarm threshold is reached.
- Up to 200 alarms can be stored. After that, the oldest alarm in each case is overwritten.
• To call up the alarm list, select the menu item Alarm list in the patient menu using the dial and confirm your selection by pressing the dial.
• The alarm list is retained even if the entire power supply (power supply and internal battery) fails.

Adjust brightness
1. In the patient menu, select the Brightness menu item using the dial.
2. Select the desired brightness level using the dial.
3. Confirm your selection by pressing the dial.
Tip To switch off the display completely during therapy (at night for example), press the dial during therapy. Switch the display back on by pressing the dial again.

LIAM info
• In the patient menu, use the dial to select the LIAM info menu item.
• Confirm your selection by pressing the dial.
• You will find the following values and their residual running times under LIAM info: • Duration • Interval • Cycles • Plateau signal (activated or deactivated)
Activate/deactivate plateau signal

- In patient mode you can switch the plateau signal on or off under LIAM info:
  1. In the LIAM info menu, use the dial to select the plateau signal.
  2. Confirm your selection by pressing the dial.
  3. Use the dial to select the status plateau signal on or plateau signal off.
  4. Confirm your selection by pressing the dial.

Overview

- Under the menu item Displays > Summary you can have the current Settings, Actual values and Alarms displayed.
- In the Patient menu, use the dial to select the Summary menu item.
- Confirm your selection by pressing the dial.
- Use the dial to select the desired submenu.
- Confirm your selection by pressing the dial.

LIAM (insufflation)

- LIAM stands for Lung Insufflation Assist Maneuver.
- LIAM is a pressure-controlled hyper-insufflation maneuver with the aim of administering an increased tidal volume which can be used in all ventilation modes except CPAP and SIMV.
- LIAM can be used to support coughing or for alveolar recruitment (similar to ventilation on sighing).
- In the case of neuromuscular diseases, in particular, with regular use, there can accordingly be a positive impact on the course of vital capacity.
Your doctor uses the Duration parameter to specify the period for which LIAM is applied. The Interval parameter states at what intervals LIAM will be repeated. Within one interval, either one LIAM stroke (Cycles = 1) or up to 10 consecutive LIAM strokes.

**LIAM to support a coughing maneuver**

- LIAM can be used to support a coughing maneuver by initially expanding lung and thorax adequately during hyperinsufflation.
- This makes more air available for the subsequent cough.
- At the same time, optimized initial tensioning of the lung and thorax increases the effectiveness of the cough on exhalation.
- Initially, the pressure curve within the individual LIAM stroke is comparable with a normal ventilation stroke.
- When the IPAP pressure level is reached, pressure continues to rise in linear form to maximum pressure IPAP max (IPAP + ΔPLIAM) and is maintained for one second (plateau phase).
- The plateau phase at the end of insufflation is to facilitate the coordination (closure of the glottis) of a coughing maneuver.
- The start of the plateau phase is audibly emphasized by an optional plateau signal. This plateau signal can be switched on and off in the menu under LIAM info.
Lung Insufflation Assist Maneuver plateau phase and signal.

**Method**

- You can trigger LIAM manually during ventilation.
- Press the key to do so. The device switches to LIAM mode and insufflation is started to synchronize with the next inspiration. You can perform the whole process yourself several times. Press the key again to do so.
- LIAM can be interrupted at any time. Press the key to do this. Then LIAM is canceled and the device reverts to the preset ventilation mode.
- If LIAM is then to be carried out again, begin the process by pressing the key again.
Therapy in TA mode (only leakage ventilation)

- In TA mode the therapy device adapts to the personal respiratory rhythm of the patient.
- Proceed as follows to achieve optimum adaptation to your respiratory rhythm.
  1. Put on the patient/ventilator interface shortly before you switch on the therapy device.
  2. Switch on the therapy device and continue to breathe normally.
  3. The symbol $\text{AA}$ (automatic analysis) appears in the display. The device initially sets a constant pressure of 4 hPa and analyzes the respiratory rhythm of the patient.
  4. As soon as the device has detected the patient's respiratory rhythm (after 10 - 20 breaths), it provides the prescribed therapy pressure in precisely this rhythm.
  5. If the respiratory rhythm should change during therapy, the therapy device detects this automatically and performs a new analysis. The symbol AA appears in the display again. The patient can also continue to breathe normally during this phase. Pressure is reduced to 4 hPa again for 10 - 20 breaths.
  6. As soon as the device has detected the new respiratory rhythm, it provides the therapy pressure in this new rhythm.
After use

1. **Switch the device to standby by keeping the On/Off key depressed for approx. 2 seconds until the blower switches off.** The duration of the previous therapy appears in the display. The device then switches to standby.
2. Disconnect the patient/ventilator interface from the patient circuit and the patient circuit from the device.
3. Clean the patient/ventilator interface, patient circuit and device in accordance with the instructions for use.

**Switch device off completely**

- If the device is connected to a power supply, do not let it be turned off completely.
- To completely disconnect the device from the power supply, turn the device to standby mode and disconnect the device from the power supply.
- For optimal battery charging, we recommend not to disconnect the device from the power supply.
- To switch off the device completely in battery-operated mode, first switch to standby by pressing the On/Off key for about 2 seconds until the blower switches off. Then press the On/Off key again for at least 2 seconds until the device switches off completely and the display goes out.
Mobile therapy data check

- The therapy device has a memory card reader for SD cards which can be used to save therapy data on a memory card.
- This allows the patient's therapy data to be read out independently of the location of the device, as the data can be transported on the memory card.
- The following data are stored on the memory card: – therapy pressure in hPa – respiratory flow in l/min – volume, leakage corrected, in ml – current respiratory phase – mean leakage flow in l/min – current ratio Ti/T in % – current respiratory frequency in 1/min ratio of spontaneous inspiration to total number of inspirations in % – ratio of spontaneous exhalation to total number of exhalations in % – number of effort episodes, related to number of breaths (TA mode only) – number of fighting episodes, related to number of breaths (TA mode only) – tidal volume of last inspiration in ml – mean respiratory minute volume in ml/min – current physiological alarms – current technical alarms – current warnings
- This data can be read out from the memory card and displayed with the aid of the WEINMANN support software.
- If a card is in the device and therapy data is being recorded, a symbol appears in the status line. If the symbol does not appear, the memory card is defective, absent or not yet recognized by the device.
- Caution! Only remove the memory card when data is not being copied onto the card, otherwise therapy data may be lost. End the therapy before removing the memory card. Check whether the symbol is displayed in the status line. When the symbol no longer appears in the status line, you can remove the memory card safely.
- Note The SD card can only be detected by the device when ventilation mode is running. After inserting the memory card, run the device briefly until the SD card is detected and the symbol is displayed in the status.
- Proceed as follows to remove the memory card.
  1. The slot for the memory card is located on the side of the device under a rubber cover. Pull on the rubber cover to get at the memory card.
2. To remove the memory card, press briefly on the memory card in the device. A spring mechanism now pushes the memory card out a little way.
3. Remove the memory card.
4. Cover the slot for the memory card again using the rubber cover.

**Proceed as follows to put the memory card back in.**

1. Pull on the rubber cover to get at the slot for the memory card.
2. Push the memory card into the slot with the cut-off corner pointing upwards.
3. Briefly press on the card so that the card can engage in the device with the aid of the spring mechanism.
4. Cover the slot for the memory card again using the rubber cover.

**Caution!** When covering the memory card with the rubber cover, take care not to push in the card accidentally, as doing so will eject it from the device. Ejecting the card may cause loss of therapy data.

**Bags for the therapy device**

- The therapy device has two bags, a protective bag (WM 27106) and a carrying bag for mobile use (WM 27976).

- The protective bag WM 27106 is supplied and is for protecting the device but not for mobile operation.
- The carrying bag WM 27976 is available as an accessory and allows the device to be operated on a mobile basis.
Before starting mobile operation

- You should only transport the therapy device any distance in the protective bag WM 27106 intended for it.
- If you want to use the therapy device on a mobile basis, you must use it in carrying bag WM 27706.
- Proceed as follows to operate the device on a mobile basis.
  1. Fit the patient circuit and the patient/ventilator interface.
  2. Now put the therapy device in the bag. The ventilation tubes must be fed through the tube of fabric in the process.
  3. Switch on the therapy device.
  4. Secure the therapy device with the hook-and-loop closure in the bag.

5- Close the bag and check that the therapy device is firmly secured in the bag and cannot wobble or fall out.
6- Attach the tube of fabric and the ventilation tubes to the side of the therapy device using the hook-and-loop attachment provided.
   If you are using a replaceable battery, you can change it without having to remove the therapy device from the bag. Simply open the hook-and-loop closure on the side of the bag.
   The small accessories bag is provided for a second replaceable battery. You can attach the accessories bag to the front of the carrying bag or to
the shoulder strap. If you charge the batteries in the bag, the device may become so hot under high load that the charging process for the batteries is interrupted. Only charge the battery outside the bag.

### Hygiene treatment

<table>
<thead>
<tr>
<th>Interval</th>
<th>Activity</th>
</tr>
</thead>
</table>
| **Daily**          | – Clean the patient/ventilator interface in accordance with the relevant instructions for use.  
|                    | – Clean the patient circuit.                                              |
|                    | – Clean bacteria filter WM 24148 in accordance with the instructions for use. |
|                    | – Clean the exhalation system in accordance with the instructions for use every time it is used. |
| **Every 24 operating hours** | – Change the particulate filter in bacteria filter WM 24148. |
| **Weekly**         | – Clean coarse dust filter.                                               |
|                    | – Clean fan filter.                                                       |
| **Every 1000 operating hours** | – Change fine filter (filter change indicator ☐☐☐☐), earlier if dirty. |
| **Every 6 months** | – Change coarse dust filter, earlier if dirty or worn.                   |
|                    | – Change pressure measuring tube (see “9.4 Change pressure-measurement tube (only leakage ventilation)” on page 95), earlier if dirty. |
|                    | – Change fan filter.                                                      |
| **Annually**       | – Change patient circuit.                                                |

### Leakage ventilation

<table>
<thead>
<tr>
<th>Interval</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily</strong></td>
<td>– Clean the humidifier in accordance with the relevant instructions for use</td>
</tr>
<tr>
<td></td>
<td>– Change bacteria filter WM 24476.</td>
</tr>
<tr>
<td><strong>Weekly</strong></td>
<td>– Clean coarse dust filter.</td>
</tr>
<tr>
<td></td>
<td>– Clean fan filter.</td>
</tr>
<tr>
<td><strong>Every 1000 operating hours</strong></td>
<td>– Change fine filter (filter change indicator ☐☐☐☐), earlier if dirty.</td>
</tr>
<tr>
<td><strong>Every 6 months</strong></td>
<td>– Change coarse dust filter, earlier if dirty or worn.</td>
</tr>
<tr>
<td></td>
<td>– Change fan filter.</td>
</tr>
</tbody>
</table>
Cleaning, Disinfection and sterilization

Cleaning
- general removal of debris (dirt, food, feces, blood, saliva and other body secretions)
- reduces amount of organic matter that contributes to proliferation of bacteria and viruses

Disinfection
- removes most organisms present on surfaces that can cause infection or disease

Sterilization
- the killing or removal of all organism.

Cleaning, Disinfection and Sterilization in Healthcare Settings
- Practice standards are based on Spaulding’s Classification system
- Healthcare devices and equipment designated as
  1- Critical
  2- Semi-critical
  3- Non-critical
- Categories define level of reprocessing required.

Critical Items
- Require sterilization
- Includes items that enter sterile tissue or the vascular system
- Examples include surgical instruments and accessories, biopsy forceps, cardiac and urinary catheters, implants, needles.

Semi-Critical Items
- Require minimum high level disinfection (or sterilization)
- Includes items in contact with non-intact skin or mucous membranes
- Examples include respiratory therapy equipment, anesthesia equipment, flexible and laryngoscopes, bronchoscopes, GI endoscopes, cystoscopes, vaginal ultrasonic probes
- Cleaning process must precede high-level disinfection

Non-Critical Items
- Require intermediate-level or low-level disinfection
- Includes items in contact only with intact skin.
- Examples include BP cuffs, stethoscopes, durable mobile patient equipment.
Clean leakage ventilation

1-Pull the patient circuit off the device and the exhalation system. Pull out the one end of the pressure measuring tube (shake a little if necessary) and seal it with the sealing plug supplied. At the other end, seal the small opening of the adapter using the second sealing plug so that no water can penetrate.

5- Clean the creased tube with a little detergent in hot water and make sure no residues are left behind. Flush the inside of the tube through thoroughly in the process.

6- Rinse the creased tube thoroughly inside and out using clean hot water. Thoroughly shake out the patient circuit.

7- Hang up the patient circuit and leave to drip-dry well to stop moisture getting into the therapy device.

8- Remove the plugs from the pressure-measurement tube.

Dry the patient circuit using the therapy device

• If water ever gets into the pressure measuring tube by accident, the leakage circuit must be dried with the aid of the therapy device. This function can only be activated in standby mode. Likewise press the On/Off key to switch the device to standby.

• To start the drying process, proceed as follows.

1. Plug the red drying adapter supplied into the device outlet port.

2. Plug the adapter for the patient circuit onto the red drying adapter.

• Use the dial to select the menu item Drying process and confirm this selection by pressing the dial.

• The message Drying process active! 30 min appears. This display remains active throughout the entire drying process and indicates remaining drying time. After the drying process is complete, the device switches off.
5. If you want to interrupt the drying process, press the menu key (cancel). The display switches back to the default display, the device switches back to standby.
6- Remove the drying adapter from the device outlet port.

---

**Drying process**

**Change pressure-measurement tube (only leakage ventilation)**

1. Release the sleeve of the creased tube from the adapter.
2. Pull the pressure-measurement tube out of the creased tube.
3. Pull the pressure-measurement tube off the adapter.
4. Push the new pressure-measurement tube onto the adapter.
5. Hold up the creased tube and guide in the free end of the new pressure measuring tube.
6. Push the sleeve of the creased tube onto the adapter.
Clean the housing

- **Warning!**
- Risk of electric shock. Switch the device off completely before cleaning.
- Ensure that no liquids get into the device. Never immerse the device in disinfectants or other liquids, otherwise damage to the device and thus a hazard to users and patients may result.

Proceed as follows to clean the housing.
1. Wipe down the device and the power cord with a soft damp cloth. The therapy device must be completely dry before the device is started up.
2. Take off the filter compartment lid.

Change coarse dust filter

- Use original filters from Weinmann only. Using third-party filters invalidates any claim under warranty and may result in restricted function and bio-incompatibility.
1. Press on the latch of the filter compartment lid and take it off.
2. Take the coarse dust filter out of the filter compartment lid and dispose of it in normal domestic waste.
3. Place the clean coarse dust filter in the filter compartment lid.
4. Put the filter compartment lid into the cutout in the housing bottom edge first. Then push the filter
The fine filter needs changing when it has gone dark, but in any event after no more than 1000 operating hours. In the latter case, the message Filter change will appear in the display.

Acknowledge the message by pressing the alarm acknowledgement key. The filter change symbol then appears permanently in the status line.

Proceed as follows to change the fine filter:

1. Press on the latch of the filter compartment lid and take it off.
2. Replace the fine filter with a new fine filter.
3. Put the filter compartment lid into the cutout in the housing bottom edge first. Then push the filter compartment lid into the housing until the latch engages.

Reset filter change indicator

After you have changed the fine filter, you must reset the filter change indicator. This is necessary even if the filter was changed.
before 1000 operating hours expired so the filter change symbol was not in the display.

1. To reset the filter change indicator, press the menu key and use the dial to select Filter change from the patient menu. Press the dial to call up the Filter change menu.

   - The question Reset filter change? appears.
   - Select YES with the dial and confirm the selection by pressing the dial.
   - If you want to cancel the process, select NO with the dial and press the dial. The process is cancelled.
   - If you select and confirm YES with the dial, the message Filter change reset! appears for approx. 3 seconds.

**Change fan filter**

   - Proceed as follows to change the fan filter.
   1. Turn the device over so that the underneath points upwards.
   2. Grasp the fan filter with your fingertips and pull it out of the opening.
   3. Take a new clean filter and put it in. Ensure that the fan filter is straight and that the corners are not tilted by the opening.
   4. Turn the device back over so that the top points upwards.
**Clean coarse and fan filter. Remove the coarse dust filter.**

3- Remove the coarse dust filter.
4- Clean the filter compartment lid under running water until there are no residues. Then dry it carefully.
5- Insert the coarse dust filter and the filter compartment lid.
6. Remove the fan filter on the front of the device and clean it.
7. Put the fan filter back in.

**Clean coarse dust filter/change fine filter**

1. Take off the filter compartment lid.
2. Remove the coarse dust filter from out of the filter compartment lid and clean it with clean running water until there are no residues.
3. Change the fine filter if required.
4. Allow the coarse dust filter to dry. The coarse dust filter must be completely dry before the device is started up.
5. Put the coarse dust filter back in and close the filter compartment lid.

**Note: The fine filter cannot be cleaned. It is changed every 1000 operating hours.**

**Clean the fan filter**
- The fan filter protects the housing fan from dirt. To clean the fan filter, proceed as follows:
  1. Remove the fan filter.
  2. Clean the fan filter with fresh running water until it is free of residue.
  3. Let the fan filter dry. The fan filter must be completely dry before starting the device.
  4. Insert the fan filter again.

**Disinfect, sterilize**
- If required, e.g. following infectious diseases, you can also disinfect the housing, the power cord, the patient circuit (leakage ventilation only) and the bacteria filter housing (leakage ventilation only).
- We recommend wearing suitable gloves (e.g. household or disposable gloves) for disinfecting.
• The housing and the power cord of the therapy device are cleaned simply by wiping with disinfectant. We recommend TERRALIN for this purpose.

Patient circuit (leakage ventilation)

• We recommend GIGASEPT FF as disinfectant.  
• Rinse all parts thoroughly in distilled water following disinfecting.  
• Allow the parts to dry completely. Allow the patient circuit to drip dry. 
• Creased hose WM 24130 (transparent) can be washed in water at temperatures of up to 70 °C. It may not be sterilized. 
• Creased tube WM 24120 (gray) can be steam-sterilized with devices to EN 285. Temperature: 134 °C, minimum retention time 3 minutes.

Patient circuit (valve ventilation)

• Patient circuits with patient valve are not suitable for reuse. 
• Follow the enclosed instructions for use in this regard. 
• The housing of the oxygen sensor is cleaned by wiping with disinfectant. No further cleaning or hygiene treatment is possible. 
• If the oxygen sensor has been used without a bacteria filter before a change of patient, it must be replaced