SOMNO\textit{balance e}

autoCPAP device

SOMNO\textit{balance e}  
SOMNO\textit{balance e} with SOMNO\textit{aqua}  
WM 27420  
WM 27460

Device description and operating instructions
Overview

**SOMNObalance e**

1. Bacteria filter
2. Supply connection cable
3. Mains unit
4. Humidifier SOMNOaqua
5. Covering cap
6. Serial port
7. Device outlet port
8. Adapter
9. Breathing tube
10. Exhalation system
11. Mask
12. Headgear
13. Humidifier activated
14. Service indicator
15. Softstart time
16. Automatic switch on/off mode
17. Pressure increase/pressure reduction; exhalation relief activated
18. Filter change indicator
19. Therapy pressure
20. On/off button
21. Softstart button
22. Humidifier button
23. Filter compartment cover, air inlet
24. Carrying bag
25. DC adapter
26. O₂ supply valve
27. Voltage input
28. Rating plate

---

2 Overview
Key

1 **Bacteria filter (Accessories)**
   For protecting patient from bacteria, especially if the device is being used by several patients.

2 **Supply connection cable**
   For connecting the mains unit to the mains supply.

3 **Mains unit**
   For supplying the device with power.

4 **Humidifier SOMNOaqua**
   For heating and humidifying the air flow generated by the therapy device.

5 **Covering cap**
   Connects the device outlet port to the humidifier connection. Required if no humidifier being used.

6 **Serial port**
   For connecting to devices for setting, displaying and evaluating therapy data and for connecting the O2 supply valve.

7 **Device outlet port**
   Respiratory air flows from here to the patient via the breathing tube and mask.

8 **Adapter**
   For connecting the breathing tube to the device outlet port.

9 **Breathing tube**
   The air flows through the breathing tube to the mask.

10 **Exhalation system (Accessories)**
    This is where the exhaled air containing carbon dioxide escapes during therapy.

11 **Mask (Accessories)**
    Respiratory air at the required therapy pressure is administered to the patient via the mask.

12 **Headgear (Accessories)**
    For correct and secure positioning of the mask.

13 **Humidifier activated**
    This symbol appears when the humidifier is in operation. The set humidifier stage is displayed.

14 **Service indicator**
    This symbol appears after every 10,000 operating hours. The device then needs to be serviced.

15 **Softstart time**
    This symbol appears when the Softstart time is set or Softstart is activated.

16 **Automatic switch on/off mode**
    The symbol "A" (Automatic) appears when automatic switch on/off mode is activated. The symbol "M" (Manual) appears when automatic switch on/off mode is deactivated.

17 **Pressure increase/pressure reduction; exhalation relief activated**
    The up arrow flashes as pressure increases. The down arrow flashes as pressure falls. If both arrows are visible, exhalation relief is activated.

18 **Filter change indicator**
    This symbol appears after every 250 operating hours or when the filter is blocked. The fine filter then needs to be replaced.

19 **Therapy pressure**
    Therapy pressure is displayed in hPa (hectopascals). 1 hPa = 1 mbar ≈ 1 cm H2O.

20 **On/off button / +**
    For switching the therapy device on and off and for increasing a value which can be adjusted.

21 **Softstart button / –**
    For activating/deactivating Softstart, for calling up the Softstart setting (keep button depressed during therapy), for calling up the patient menu (keep button depressed in standby mode), to reduce an adjustable value and to end the mask test prematurely.

22 **Humidifier button**
    For activating/deactivating the humidifier, for setting humidifier stage (keep button depressed during therapy), for calling up the Info menu (keep button depressed in standby mode) and for scrolling to the next value in the menu.
23 Filter compartment cover, air inlet
For covering and securely positioning the coarse and fine dust filter.

24 Carrying bag
For transporting the therapy device.

25 DC adapter (Accessories)
For operating the therapy device via a DC socket (12 - 24 V).

26 O₂ supply valve (Accessories)
For supplying oxygen to the mask.

27 Voltage input
The external mains unit or the DC adapter are connected to the device here.

28 Rating plate
Provides information about the therapy device, such as serial number and year of manufacture.

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**SOMNOaqua (optional)**

- 37 Sealing plug
- 36 Top part
- 35 Seal
- 34 Bottom part
- 33 Outlet connection stub
- 32 Pressure measuring connector
- 31 Cleaning plug
- 29 Heating element
- 30 Inlet connection stub

---

**Key**

29 Heating element
Heats the water in the humidifier. This humidifies the respiratory air.

30 Inlet connection stub
This is where the air flows out of the therapy device into the humidifier.

31 Cleaning plug
For sealing the pressure measuring connector during hygiene treatment.

32 Pressure measuring connector
For measuring current therapy pressure.

33 Outlet connection stub
The humidified respiratory air flows from here to the breathing tube via the device outlet port.

34 Bottom part
Contains approx. 300 ml water.

35 Seal
Prevents water running out.

36 Top part
Seals the humidifier, contains the sealing plug.

37 Sealing plug
For sealing the filling opening of the humidifier.
## Markings on the device

### SOMNObalance e

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td>Device outlet port: outlet for room air at 4 - 20 hPa</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td>See operating instructions!</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td>Serial port for setting therapy parameters using SOMNOadjust WM 23930 or SOMNOsupport WM 23975 and for specialist staff to read out raw data on the course of therapy for up to 180 therapy nights or for controlling the O₂ supply valve WM 24042. Max. power consumption 163 mA. Analog output for therapy pressure, flow, loss flow, relative respiratory minute volume and obstructive pressure peaks (OPP) (0 to 1 V DC).</td>
</tr>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td>Device inlet: inlet for room air at ambient temperature</td>
</tr>
</tbody>
</table>

### SOMNOaqua

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
</table>

---

Markings on the device
Device information plates:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Year of manufacture" /></td>
<td>Year of manufacture</td>
</tr>
<tr>
<td><img src="image" alt="Device Type B" /></td>
<td>Device Type B</td>
</tr>
<tr>
<td><img src="image" alt="Do not dispose of the device with domestic waste!" /></td>
<td>Do not dispose of the device with domestic waste!</td>
</tr>
<tr>
<td><img src="image" alt="See associated operating instructions!" /></td>
<td>See associated operating instructions!</td>
</tr>
<tr>
<td>SN</td>
<td>Serial number of device</td>
</tr>
<tr>
<td><img src="image" alt="Protection class II device" /></td>
<td>Protection class II device</td>
</tr>
</tbody>
</table>

Markings on the packaging

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Permitted temperature for storage: -40 °C to +70 °C" /></td>
<td>Permitted temperature for storage: -40 °C to +70 °C</td>
</tr>
<tr>
<td><img src="image" alt="Permitted humidity for storage: max. 95 % relative humidity." /></td>
<td>Permitted humidity for storage: max. 95 % relative humidity.</td>
</tr>
</tbody>
</table>
Safety instructions in these operating instructions

These operating instructions contain safety instructions which are marked as follows:

⚠️ Warning!
Warns of risk of injury and possible material damage.

⚠️ Caution!
Warns of material damage and possible incorrect therapy results.

>Note:
Contains useful hints.
# Contents

1. **Description of device**  
   1.1 Intended use of the SOMNObalance e  
   1.2 Intended use of the SOMNOaqua  
   1.3 Description of function for the SOMNObalance e  
   1.4 Description of function SOMNOaqua  

2. **Safety instructions**  
   2.1 Safety instructions  
   2.2 Contraindications  
   2.3 Side effects  

3. **Set up device**  
   3.1 Set up and connect the SOMNObalance e  
   3.2 For operation without a humidifier  
   3.3 For operation with humidifier  
   3.4 Mask  
   3.5 Connect other accessories  

4. **Operation**  
   4.1 Patient menu  
   4.2 Exhalation relief softPAP  
   4.3 Mask test  
   4.4 Automatic switch on/off mode  
   4.5 Commissioning the SOMNObalance e  
   4.6 Softstart/initial pressure setting  
   4.7 Set SOMNOaqua  
   4.8 After use  
   4.9 Read out therapy data  
   4.10 Traveling with therapy devices  

5. **Hygiene treatment**  
   5.1 Intervals  
   5.2 Breathing tube  
   5.3 Clean the housing of the SOMNObalance e  
   5.4 Clean coarse dust filter, change fine filter  
   5.5 Accessories  
   5.6 Clean the SOMNOaqua  
   5.7 Descale the SOMNOaqua  
   5.8 Disinfect the SOMNObalance e  
   5.9 Disinfect the SOMNOaqua  
   5.10 Change in patients  

6. **Function check**  
   6.1 Intervals  
   6.2 Function check SOMNObalance e  
   6.3 Function check SOMNOaqua  

7. **Troubleshooting**  
   7.1 SOMNObalance e  
   7.2 SOMNOaqua  
   7.3 Replace the seal of the heating element  
   7.4 Replace seal in bottom part of housing  

8. **Servicing**  
   8.1 Intervals  
   8.2 Scope of servicing  

9. **Disposal**  

10. **Scope of supply**  
   10.1 Standard scope of supply  
   10.2 Accessories  
   10.3 Spare parts for SOMNObalance e  
   10.4 Spare parts SOMNOaqua  

11. **Technical specifications**  
   11.1 Specifications  
   11.2 Pneumatic diagram  
   11.3 Pressure/volume curve  
   11.4 Safety distances  

12. **Warranty**  

13. **Declaration of Conformity**  

14. **Glossary**  

15. **Index**
1. Description of device

1.1 Intended use of the SOMNObalance e

SOMNObalance e is an autoCPAP device for treating sleep-related breathing disorders in persons above the age of 12 years. The device generates a positive airway pressure (= PAP) which keeps the patient's airways open during sleep. The pressure is administered by a nasal or full-face mask.

The SOMNObalance e detects respiratory events and varies airway pressure accordingly.

The SOMNObalance e can be operated with or without the SOMNOaqua humidifier.

The device displays therapy data in the display.

Note:
- The SOMNObalance e can only reliably prevent airway blockage if the upper and lower pressure limit prescribed by the doctor on a patient-specific basis has been determined and set appropriately, for example in a sleep laboratory.
- The SOMNObalance e is not suitable for life-support purposes.

1.2 Intended use of the SOMNOaqua

The SOMNOaqua humidifier is an accessory optionally available for Weinmann’s SOMNObalance e therapy device.

The SOMNOaqua humidifier is used to heat the air flow generated by the SOMNObalance e and to enrich it with moisture. This prevents the upper airways of the patient drying out during therapy.

SOMNOaqua may only be operated with the SOMNObalance e therapy device. Operation with third-party devices is not permitted.

Use the device only for the purpose described here.
1.3 Description of function for the SOMNObalance e

A fan draws in ambient air through a filter and delivers it to the device outlet port. From here, the air flows through the tube system and the mask to the patient.

The exhalation system upstream of the mask prevents the accumulation of CO₂-enriched exhaled air in the tube system.

During sleep, the patient's airways are braced by the air pressure generated. The pressure in the mask is shown in the therapy device display.

The device determines a respiratory flow signal which can be output on a PSG system or also read out using SOMNOSupport. The device analyzes the pressure and respiratory flow signals and detects respiratory events (e.g. apneas, hypopneas, flow limitations and snoring).

In APAP mode, therapy pressure is automatically increased in the event of respiratory events, but no higher than the upper pressure limit prescribed by the doctor. Once the events are over, therapy pressure is slowly reduced again.

The device can be operated in APAP and CPAP modes, in each case with softPAP exhalation relief as an option.

softPAP mode

In softPAP mode, the respiratory flow curve is continuously evaluated to detect transitions between inspiration and exhalation at an early stage. Before the transition to exhalation, therapy pressure is reduced to relieve exhalation. The degree of the reduction can be set in two stages: "gentle" (Stage 1) and "normal" (Stage 2). This increases patient comfort.

Before the start of the next inspiration, pressure is increased back up to the therapy value.

If apneas or flow limitations occur during sleep, softPAP mode is automatically deactivated for the relevant period. softPAP mode is likewise temporarily deactivated at too high respiratory frequency. However, therapy pressure remains reduced during this time as long as no apneas, flow limitations or artifacts occur.

Automatic switch on/off mode

It is possible to activate automatic switch on/off mode on the SOMNObalance e. The device can be switched on by the patient taking a breath into the mask. If there is no pressure for approx. 5 seconds (e.g. because the mask is taken off), the SOMNObalance e switches off automatically.
Softstart/initial pressure

There are two functions to facilitate falling asleep: Softstart function and initial pressure function.

**Softstart function:** on switching on, the pressure is set to the Softstart pressure specified by the doctor. The pressure limits then slowly rise to the specified values. The duration of the rise can be set. This function is suitable for patients who find high pressure unpleasant when awake.

**Initial pressure function:** the pressure remains at the set value throughout the start time. Once the start time has elapsed, pressure is reduced to the lower pressure limit. This function is suitable for patients who find low pressure unpleasant when awake or who require a high pressure rapidly after falling asleep.

Mask test

The SOMNObalance e can be used to test whether the mask is correctly adapted. Leakages due to a poorly-adapted mask often only occur at higher pressures. To check that the mask is in position without leaks, it is possible to output a higher pressure during the first 30 seconds after the device is switched on. This pressure can be adjusted.

Power outage

The settings are retained if the power supply is interrupted.

1.4 Description of function SOMNOaqua

The heatable humidifier operates in accordance with the so-called "pass-over" principle. The air coming from the therapy device is passed over the surface of a heated water supply. This increases the relative humidity and temperature of the air flow.

The amount of moisture given off can be set on an individual basis using the buttons on the therapy device. The output of the heating element and thus the water temperature in the humidifier chamber is controlled electronically by the therapy device.

The water level can be checked at any time by looking through the transparent window in the humidifier chamber.
2. Safety instructions

Read these operating instructions carefully. They form part of the devices described and must be available at all times.

Use the device only for the purpose described here (see "1. Description of device" on Page 9).

For your own safety and the safety of your patients and in accordance with the requirements of Directive 93/42 EEC, follow the safety instructions below.

2.1 Safety instructions

Operating the device

Caution!

- Using the mains unit supplied, the device can be operated on voltages from 115 V to 230 V. Ensure that your mains voltage matches these values. For operation with 12 V DC or 24 V DC, use DC adapter WM 24469 available as an accessory.
- The device must be connected to an easily accessible supply socket so that in the event of a malfunction, the supply plug can be removed quickly.
- Do not put the device close to a radiator and do not expose it to direct sunlight as this could provide additional heat to respiratory air and internal parts. This could cause condensation to form in the humidifier which would then condense in the tube system.
- Do not cover the device with blankets etc.. The air inlet would be blocked and the device could overheat. This can lead to inadequate therapy and damage to the device.
- Ensure that no dirt gets into the therapy device or the humidifier.
- Maintain a safe distance between the SOMNObalance e and devices which emit high-frequency radiation (e.g. mobile phones), (see Page 55), otherwise malfunctions may occur. If the SOMNObalance e interferes with other devices (e.g. a radio), put the SOMNObalance e further away from this device.
- Do not operate the therapy device and humidifier if the device is not working properly, if parts are damaged and/or the humidifier is wet at the heating element contact.
• The output of the humidifier may change if the device is operated outside the permitted ambient temperatures.

• Please also see the operating instructions for your mask.

• If the device fails, take off the mask as soon as possible. First check whether there is a power outage. Please refer to the operating instructions for your exhalation system.

• Please observe Section "5. Hygiene treatment" on Page 34 to prevent infection or bacterial contamination.

• If the SOMNObalance e is intended for use by several patients, a bacteria filter should be used to prevent infections. It is connected between the breathing tube and the adapter. If the device is to be utilized for another patient without using a bacteria filter, it must undergo a hygiene treatment beforehand. This has to be carried out by the manufacturer (Weinmann) or an authorized dealer.

**Transport**

**Caution!**

• Do not transport or tilt the SOMNObalance e with the humidifier fitted. If the device is tilted, residual water from the humidifier may run into the therapy device and damage it.

• Transport SOMNObalance e only with the covering flap fitted so that no dirt can get into the device.

**Accessories/Spare parts**

**Caution!**

• If third-party articles are used, functional failures and bioincompatibility may occur. Please bear in mind that in these cases, any warranty entitlement and liability will lapse when neither the accessories recommended in the operating instructions nor original spare parts have been used.

• Third-party masks may be used only after approval from the manufacturer (Weinmann). Use of non-approved masks puts successful therapy in jeopardy.

• Ensure that accessories used are suitable for therapy and complete. This applies to the exhalation system in particular, otherwise the CO₂ content in the exhaled air may hinder your breathing.
Repair

Caution!
- Have all inspections and repair work carried out only by the manufacturer (Weinmann) or specialist staff.
- Modifications to the SOMNObalance e and the SOMNOaqua are not permitted.

Oxygen supply

Warning!
When oxygen is used during therapy, smoking and naked flames are prohibited. Risk of fire. Oxygen may be deposited in clothing, bed linen or hair. It can only be removed by thorough ventilation.

Caution!
Oxygen supply is permitted only if O₂ supply valve WM 24042 is used. As far as oxygen is concerned, you must observe the safety instructions in the operating instructions for your oxygen supply system.

2.2 Contraindications

The SOMNObalance e should be used only with particular caution, if at all, in the case of certain diseases.
These include:
- cardiac decompensation
- severe cardiac arrhythmia
- severe hypotension, particularly in conjunction with intravascular volume depletion
- severe epistaxis
- high risk of barotrauma
- severe pulmonary diseases (e.g. COPD, pulmonary emphysema)
- diurnal hypoxemia
- respiratory insufficiency of cause other than OSA
- nocturnal hypoxemia of cause other than OSA (obesity hypoventilation syndrome)
- pneumothorax or pneumomediastinum
• pneumoencephalus
• cranial trauma
• status following brain surgery and surgical procedure performed on the pituitary gland or middle/inner ear
• acute sinusitis, inflammation of the middle ear (otitis media) or perforated eardrum
• dehydration

In each case, the decision whether to treat with the SOMNObalance e lies with the doctor in charge. Threatening situations have not been observed with the SOMNObalance e.

2.3 Side effects

The following undesired side effects may occur during short and long-term usage of the SOMNObalance e:

• pressure points on the face caused by the mask and forehead padding
• reddening of skin on face
• blocked nose
• dry nose
• dry mouth in the morning
• feeling of pressure in sinuses
• irritation of conjunctiva of eyes
• gastrointestinal insufflation of air ("stomach bloating")
• nosebleeds

Note:
These side effects are general side effects of therapy with a CPAP device and are not attributable specifically to use of the SOMNObalance e device.
3. Set up device

3.1 Set up and connect the SOMNO\textit{balance} e

\textbf{Location}

- Set up the device on a flat surface, e.g. on a bedside cabinet or on the floor next to the bed.

\textbf{Caution!}

Do not cover the device or the mains unit with blankets etc.. Do not operate it close to a radiator or in direct sunlight. The device could overheat. This may lead to inadequate therapy and damage to the device.

\textbf{Power supply}

1. \textbf{First} plug the connection cable of the mains unit into the power inlet socket of the SOMNO\textit{balance} e.

2. \textbf{Then} use the supply connection cable to connect the mains unit to an easily accessible mains supply socket.

The mains unit automatically sets itself to mains voltage (115 V - 230 V).

"0" for standby appears in the display, together with "A" or "M" depending on the relevant setting of automatic switch on/off mode.

or:

If the SOMNO\textit{balance} e is to be operated at a voltage of 12 V or 24 V DC, connect DC adapter WM 24469 which is available as an option instead of the mains unit.
3.2 For operation without a humidifier

1. To take off the humidifier, if necessary, push it sideways out of the humidifier bracket of the therapy device.

2. Push the covering cap into the bracket as far as the stop.

3. Push the breathing tube onto the adapter for the device outlet port.

4. Push the adapter of the breathing tube into the device outlet port of the therapy device. Ensure in the process that the locking latch points upwards and engages in the groove of the device outlet port.

3.3 For operation with humidifier

Before first use

Before first use, the humidifier should be thoroughly rinsed once with water (see "5. Hygiene treatment" on Page 34).
Fill humidifier

Caution!
• Do not fill the humidifier beyond maximum filling level, otherwise water may get into the therapy device. This can lead to damage to the device.
• Do not fill the humidifier when it is attached to the therapy device, otherwise water may get into the therapy device. This can lead to damage to the device.
• Do not fill the humidifier with hot water. The housing and heating element may be damaged. This may lead to malfunctions and inadequate therapy.

Note:
• Use distilled water. If there is no distilled water at hand, low-limescale boiled water can be used as an exception. In this case, ensure that the heating element does not scale up (see "5.7 Descale the SOMNOaqua" on Page 39).
• Do not use aromatic additives such as eucalyptus oil. This may damage the plastic parts of the humidifier.

1. Open the sealing plug of the humidifier.

2. Fill the humidifier with distilled water up to the "max" mark.

3. Firmly seal the humidifier with the sealing plug.

4. Check that the humidifier is leaktight after filling it. To do so, pass a finger across the bottom or place the humidifier on a paper towel. This makes any leaking water easy to trace.
Adapt humidifier

1. If necessary, release the breathing tube from the therapy device by pressing the locking latch of the adapter. Pull the breathing tube and the adapter off the device outlet port.

2. Push the covering cap sideways out of the humidifier bracket of the therapy device.

3. Push the filled humidifier as far as possible into the humidifier bracket.

4. Push the adapter of the breathing tube into the device outlet port of the therapy device. Ensure in the process that the locking latch points upwards and engages in the groove of the device outlet port.
3.4 Fitting the mask

Put on the mask

1. Adjust the forehead support of the mask (if provided).
2. Connect the headgear to the mask.
3. Put on the mask.
4. Adjust the headgear so that the bulge of the mask creates only low pressure so as to prevent pressure points on the face.

Note:
Consult the operating instructions for the relevant mask for information on how to proceed. You can use the mask test to check that the mask does not leak (see "4.3 Mask test" on Page 24).

Warning!
Full-face masks must be equipped with an emergency exhalation valve so that you can breathe through nose or mouth in the event of any device failure. Full-face masks without an emergency exhalation valve may not be used!

External exhalation system

No exhalation system is integrated in some masks. In order for the used, carbon dioxide (CO₂)-enriched air to be able to escape, an external exhalation system is required on these masks. Follow the operating instructions for the mask.

Warning!
Without an exhalation system, the CO₂ concentration would rise to critical levels in the mask and tube and thus inhibit your breathing. Risk of suffocation!

- Fit the external exhalation system between the mask and the breathing tube.
3.5 Accessories

Bacteria filter

If the SOMNObalance e is intended for use by several patients (e.g. in a hospital), a bacteria filter should be used to prevent infections.

- Fit the bacteria filter between the breathing tube and the adapter.

**Caution!**

- Pressure consistency and flow rate may be reduced if a bacteria filter is used. If a bacteria filter is connected, check the pressure.
- Follow the manufacturer’s instructions, particularly the expiry date of the filter.

Oxygen supply

**Warning!**

For safety reasons (risk of fire), it is not permitted to supply oxygen straight into the breathing tube or the mask without a special safety device. It is possible to supply up to 4 l/min oxygen to the mask using oxygen supply valve WM 24042.

An oxygen concentrator (e.g. Oxymat), liquid oxygen or an oxygen cylinder with the appropriate pressure-reducer on it can be used. This use must be prescribed by the doctor in charge.

It is essential to follow the safety instructions for handling oxygen as well as the operating instructions for the oxygen valve and the oxygen device used.
4. Operation

SOMNObalance e provides various functions which are possible in standby mode (device switched off) or during therapy (device switched on).

Functions in standby mode (patient menu)
- "4.2 Exhalation relief softPAP" on Page 23
- "4.3 Mask test" on Page 24
- "4.4 Automatic switch on/off mode" on Page 25

Functions during therapy
- "4.6 Softstart/initial pressure setting" on Page 27
- "4.7 Set SOMNOaqua" on Page 28

Functions in standby mode (Info menu)
- "4.9 Read out therapy data" on Page 31

4.1 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 (softPAP 0, softPAP 1 or softPAP 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>SoftPAP</th>
<th>Value range</th>
<th>Described in</th>
</tr>
</thead>
<tbody>
<tr>
<td>softPAP</td>
<td>Soft</td>
<td>0</td>
<td>softPAP off</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>softPAP gentle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>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.

### 4.2 Exhalation relief softPAP

When softPAP is activated, therapy pressure is temporarily reduced before the transition to exhalation. This facilitates pleasant exhalation.

You can select between two softPAP stages or deactivate the softPAP function. The prerequisite for this is that your doctor has enabled the softPAP function.

#### Select softPAP stage/Deactivate softPAP

**Status:** device switched off.

1. Call up the patient menu. The current setting for exhalation relief (Soft 0, Soft 1 or Soft 2) appears flashing in the display.

   **Note:**
   If the current softPAP setting does not flash, it is not enabled and you cannot change the setting in this case.
2. Press the on/off button (+) or the Softstart button (-) until the desired setting appears in the display:

<table>
<thead>
<tr>
<th>Soft θ</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>softPAP off</td>
</tr>
<tr>
<td></td>
<td>Exhalation relief is deactivated.</td>
</tr>
<tr>
<td>1</td>
<td>softPAP gentle</td>
</tr>
<tr>
<td></td>
<td>Therapy pressure is reduced slightly before exhalation.</td>
</tr>
<tr>
<td>2</td>
<td>softPAP normal</td>
</tr>
<tr>
<td></td>
<td>Therapy pressure is reduced to a greater extent before exhalation.</td>
</tr>
</tbody>
</table>

3. To store the setting and exit the patient menu, press the humidifier button until the display goes out and "0" reappears in the display. Alternatively wait until the menu exits automatically.

### 4.3 Mask test

When the mask test is activated, a higher pressure is output for 30 seconds after the device is switched on. This gives you the opportunity of checking that the mask is properly located at the start of therapy and to correct it if necessary.

**Activate/deactivate mask test**

**Status:** device switched off.

1. Call up the patient menu and scroll to the setting for the mask test.
2. Press the on/off button (+) or the Softstart button (-) until the desired setting appears in the display:

<table>
<thead>
<tr>
<th>T:</th>
<th>Setting</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>

3. To store the setting and exit the patient menu, press the humidifier button until the display goes out and "0" reappears in the display. Alternatively wait until the menu exits automatically.
4.4 Automatic switch on/off mode

If the automatic system is activated, you can switch the SOMNObalance e on and off using the pressure in the mask.

**Note:**
If a full-face mask with integrated emergency exhalation system is used, the device will not switch itself on and off automatically even if setting A is selected. The emergency exhalation system of the mask means that the device cannot detect the pressure change required for switching.

**Activate/deactivate automatic system**

**Status:** device switched off.

1. Call up the patient menu and scroll to the setting for automatic switch on/off mode.
   - The current setting for automatic switch on/off mode (A or M) appears flashing in the display.

2. Press the on/off button (+) or the Softstart button (-) until the desired setting appears in the display:

<table>
<thead>
<tr>
<th></th>
<th>Automatic system activated</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>As soon as a patient breathes into the mask (pressure &gt; 0.5 hPa), the SOMNObalance e switches on automatically.</td>
</tr>
<tr>
<td></td>
<td>When the mask is removed, the device switches off automatically after 5 seconds.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Automatic system deactivated</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>The device can only be switched off by pressing the on/off button.</td>
</tr>
<tr>
<td></td>
<td>If the device is not used for 15 minutes, it switches off automatically.</td>
</tr>
</tbody>
</table>

3. To store the setting and exit the patient menu, press the humidifier button until the display goes out and "0" reappears in the display. Alternatively wait until the menu exits automatically.
4.5 Commissioning the SOMNO\textit{balance e}

Put on the mask

1. Put on the mask as described in Section "3.4 Fitting the mask" on Page 20.
2. Connect the breathing tube to the mask (tapered push connector).
3. Route the breathing tube away from your head.

\textbf{Warning! Risk of injury!}
Never put the breathing tube around your neck.

Switch on the device

1. To switch on the device, press the on/off button.

\textbf{Alternatively:}
If the automatic system is activated, you can switch on the SOMNO\textit{balance e} by taking one breath into the mask.

Total therapy time appears in the display for approx. 3 seconds. The flow generator starts to pump air through the breathing tube and the air flow can be felt at the nose.

Mask test

When the mask test is activated, the higher pressure set is output for 30 seconds. In the example, this is 8 hPa.

1. Check the seal on the mask and adapt the headgear if necessary.
2. To cancel the mask test before 30 seconds have elapsed, press the Softstart button.

\textit{SOMNO\textit{balance e}} is now operational.
Softstart/initial pressure

If the Softstart or the initial pressure functions are set, time and pressure value alternate in the display.

Exhalation relief

If the softPAP function is switched on, the arrow symbols are displayed.

Self-regulation

During pressure increase, the symbol ▲ flashes in the display.
During pressure decrease, the symbol ▼ flashes in the display.

Switch off device

- To switch off the device, press the on/off button.
  
  Alternatively:
  
  If the automatic system is activated, the device switches off automatically 5 seconds after the mask has been removed.

4.6 Softstart/initial pressure setting

To facilitate falling asleep, specialist staff can set a pressure which may deviate from the optimum therapy pressure. This pressure is administered only for a certain time.

If the Softstart or initial pressure functions are enabled on your device, the time can be selected in 5-minute increments up to a maximum of 30 minutes.

Set time

Status: device switched on.

1. Keep the Softstart button depressed until the current setting for time flashes in the display.

2. To change the time, press the on/off button (+) or the Softstart button (-) several times until the desired time is displayed.

The current setting is saved after 3 seconds. The display stops flashing.
Softstart or initial pressure on/off

**Status:** device switched on.

- To switch the function on or off, **briefly** press the Softstart button.

With Softstart switched on, the remaining Softstart time alternates in the display with current therapy pressure.

**Note:**
The Softstart/initial pressure settings are retained after the device is switched off. When the SOMNO\textit{balance} e is started up, it automatically starts with the corresponding settings if the function was switched on.

# 4.7 Set SOMNO\textit{aqua}

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.

## Switch on humidifier

1. Fill and adapt the humidifier as described in Section 3.3 on Page 17.
2. Switch on the therapy device.
3. Press the humidifier button on the therapy device.
   
   The humidifier symbol and the humidifier stage are shown in the display of the therapy device.

## Set humidifier stage

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.
If you have dry airways in the morning, heating output is set too low. In this case, select a higher humidifier stage.

If condensation forms in the breathing tube during the therapy night, heating output is set too high. In this case, select a lower humidifier stage.

The current setting is saved after 3 seconds. The display stops flashing.

**Switch off humidifier**

You have two options for switching off the humidifier:

- press the humidifier button of the therapy device.
  
  The humidifier symbol 🛋️ in the display goes out. The therapy device remains switched on.

  **Alternatively:**

  - press the on/off button of your therapy device.

  The humidifier and the therapy device are both switched off. When you switch the therapy device back on, the humidifier is also switched back on automatically and operated at the heating output of the previous therapy session.

**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.
4.8 After use

1. Take off the headgear with the mask.
2. To switch off the device, press the on/off button.

   Alternatively:

   If the automatic system is activated, the device switches off automatically after approx. 5 seconds.

   The daily therapy time for the previous use appears in the display. "D" and "A" or "M" then appear in the display.

3. Pull the tube connection and the exhalation system off the mask.
4. Clean the following parts (see "5. Hygiene treatment" on Page 34):
   • mask
   • exhalation system
   • humidifier (if used)

Save energy

With the mains unit and in standby mode (standby), the SOMNObalance e uses approx. 6 W. The device does not have a mains switch.

To save electricity, you can remove the plug of the supply connection cable from the supply socket during the day. To do this, plug the device into an easily accessible socket. Stored values and settings are retained.

   Caution!
   Always switch off the SOMNObalance e at the on/off button first before disconnecting the plug or interrupting the power supply at a switchable socket. Otherwise the therapy data will not be stored in their entirety.
4.9 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>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5h</td>
<td>(mean) therapy time</td>
</tr>
<tr>
<td>RDI 12.3</td>
<td>mean RDI</td>
</tr>
<tr>
<td>L 10p</td>
<td>percentage proportion of therapy time at an impermissibly high leakage rate</td>
</tr>
<tr>
<td>P 90%</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.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2302</td>
<td>for a particular day in the last 6 days, give the date (in the example, 23rd February)</td>
</tr>
<tr>
<td>7d</td>
<td>mean value for the last 7 days</td>
</tr>
<tr>
<td>14d</td>
<td>mean value for the last 14 days</td>
</tr>
<tr>
<td>30d</td>
<td>mean value for the last 30 days</td>
</tr>
<tr>
<td>180d</td>
<td>mean value for the last 180 days</td>
</tr>
<tr>
<td>366d</td>
<td>mean value for the last 366 days</td>
</tr>
</tbody>
</table>

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.
4.10 Traveling with therapy devices

To transport the therapy device over a relatively large distance, you should pack it in the carrying bag (included in the scope of supply for the therapy device). Ensure that the carrying bag is clean so that no dirt can get into the device.

Pack in the carrying bag:

- device
- mains unit
- connection cable
- breathing tube
- mask including exhalation system
- humidifier if required
- spare filters
- operating instructions
- DC adapter (if required, if present)

Note:
If you want to take the therapy device onto an aircraft as hand baggage, contact your airline before departure to find out whether any formalities are involved.
5. Hygiene treatment

Note:
Follow the instructions on the hygiene treatment of the accessories (exhalation system, mask and headgear) in the relevant operating instructions in each case.

5.1 Intervals

<table>
<thead>
<tr>
<th>Interval</th>
<th>Task</th>
<th>See associated operating instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily</strong></td>
<td>Clean mask and exhalation system.</td>
<td>Section 5.6</td>
</tr>
<tr>
<td></td>
<td>CleanSOMNOaqua.</td>
<td></td>
</tr>
<tr>
<td><strong>Weekly</strong></td>
<td>Clean coarse dust filter.</td>
<td>Section 5.4</td>
</tr>
<tr>
<td></td>
<td>Check fine dust filter. Change if necessary.</td>
<td>Section 5.4</td>
</tr>
<tr>
<td></td>
<td>Check breathing tube. Clean if required.</td>
<td>Section 5.2</td>
</tr>
<tr>
<td></td>
<td>Wipe down the housing of the SOMNObalance e and the mains unit.</td>
<td>Section 5.3</td>
</tr>
<tr>
<td></td>
<td>Wash the headgear.</td>
<td>see associated operating instructions</td>
</tr>
<tr>
<td><strong>Monthly</strong></td>
<td>Replace fine filter (depending on contamination, but after no more than 250 hours or one month (filter change indicator)).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean breathing tube.</td>
<td>Section 5.2</td>
</tr>
<tr>
<td><strong>Every 6 months</strong></td>
<td>Replace coarse dust filter.</td>
<td>Section 5.4</td>
</tr>
<tr>
<td><strong>Every 12 months</strong></td>
<td>Replace mask and exhalation system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace breathing tube.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace headgear.</td>
<td></td>
</tr>
<tr>
<td><strong>If required</strong></td>
<td>Descale SOMNOaqua.</td>
<td>Section 5.7</td>
</tr>
<tr>
<td></td>
<td>Disinfect the SOMNObalance e.</td>
<td>Section 5.8</td>
</tr>
<tr>
<td></td>
<td>Disinfect the SOMNOaqua.</td>
<td>Section 5.9</td>
</tr>
<tr>
<td></td>
<td>Clean carrying bag</td>
<td></td>
</tr>
<tr>
<td><strong>When changing patients</strong></td>
<td>If required, hygiene treatment.</td>
<td>Section 5.10</td>
</tr>
</tbody>
</table>
5.2 Breathing tube

Caution!
The breathing tube may only be used again following cleaning once it is completely dry. If moisture gets into the therapy device, it can lead to damage to the device and consequently put users and patients at risk.

Clean breathing tube.

1. Pull the breathing tube and adapter off the device and off the exhalation system.
2. Then take off the adapter first.
3. Clean the breathing tube and the adapter with a little detergent in hot water until no residues remain. Rinse the inside of the tube thoroughly in the process.
4. Then rinse the inside and outside thoroughly using clean hot water.
5. Shake the breathing tube out thoroughly.
6. Hang the breathing tube up and leave to drip dry well.
7. Dry the breathing tube with the aid of the therapy device.

Dry breathing tube

The breathing tube is dried completely with the aid of the SOMNObalance e.

1. Remove the humidifier if necessary and fit the covering cap.
2. Fit the adapter to the breathing tube.
3. Plug the breathing tube adapter into the device outlet port.
4. To start the drying process, with the SOMNObalance e switched off, simultaneously press the Softstart button and the on/off button.
   The device now switches on and dries the breathing tube (time: 30 minutes). The remaining time is shown in the display. The device switches off automatically after the end of the drying process.
   – You can interrupt the process at any time by pressing the on/off button.
   – If the breathing tube is still damp in places after drying, start the drying process again.
5.3 Clean the housing of the SOMNObalance e

**Warning! Risk of electric shock!**
- Before cleaning, it is essential to remove the connecting cable for the mains unit from the power inlet socket of the therapy device.
- Make sure no liquids get into the device. Never immerse the device in disinfectant or other liquids, otherwise the device may be damaged, resulting in a hazard to users and patients.

1. Push the humidifier or the covering cap sideways out of the humidifier bracket of the therapy device.

   **Caution!**
   Ensure that no liquids get into the device via the pressure measuring connector, otherwise malfunctions may occur.

2. Push the red cleaning plug into the pressure measuring connector.
3. Wipe down the device, the covering cap, the mains unit and the supply connection cable with a soft damp cloth.

The SOMNObalance e must be completely dry before being started up.

5.4 Clean coarse dust filter, change fine filter

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.

5.5 Accessories

To clean the exhalation system, the mask and/or the headgear, please see the section entitled "Cleaning" in the relevant operating instructions.

5.6 Clean the SOMNOaqua

1. Pull the tube adapter off the device outlet port to release the SOMNOaqua.
2. Then push the SOMNOaqua to the left out of the humidifier bracket.

⚠️ Warning! Risk of burns!
Do not touch the heating element. The metal is hot after the therapy device has been in operation and only cools down very slowly.
3. Open the humidifier by turning the top part anticlockwise.

4. Push the cleaning plug onto the pressure measuring connector.

5. Clean the top and bottom parts with lukewarm water to which a little detergent has been added.

**Note:**
We recommend washing the housing parts in the top basket of a dishwasher once a week at max. 65 °C.

6. Rinse off the housing parts with clean water afterwards.

7. Shake out the bottom part vigorously to remove any water which may have come into contact with the heating element. Dry the parts thoroughly with a soft cloth. The contact for the heating element must be dry.

8. Join the top and bottom parts so that the markings are one above the other. Turn the top part clockwise up to the stop.

9. Pull out the sealing plug.

The humidifier is now operational again.

**Caution!**
We recommend replacing the plastic parts for hygiene reasons after a maximum period of use of two years.
5.7 Descale the SOMNOaqua

If the bottom part of the housing and the heating element have limescale on them:

1. Pour approx. 150 ml pure domestic vinegar (5 % solution without additives) into the bottom part of the humidifier and leave to take effect for one hour.
2. Pour out the vinegar solution.
3. Wipe out the housing parts using a soft cloth and rinse several times thoroughly with water.
4. Then dry all parts carefully.

5.8 Disinfect the SOMNObalance e

If required, for example following infectious diseases or unusual contamination, you can also disinfect the housing, the mains unit, the supply connection cable, the breathing tube and the humidifier. See the operating instructions for the disinfectant to be used. It is recommended that suitable gloves (e.g. household or disposable gloves) are used for disinfecting.

Device

We recommend TERRALIN as disinfectant.

⚠️ Warning! Risk of electric shock!

- Before cleaning, it is essential to remove the connection cable for the mains unit from the power inlet socket of the therapy device.
- Make sure no liquids get into the device. Never immerse the device in disinfectant or other liquids, otherwise the device may be damaged, resulting in a hazard to users and patients.

Caution!

Ensure that no liquids get into the device via the pressure measuring connector, otherwise malfunctions may occur.

The housing, the mains unit and the supply connection cable of the SOMNObalance e are cleaned by simply being wiped over with disinfectant.
**Breathing tube**

- We recommend GIGASEPT FF as disinfectant.
- Proceed when disinfecting exactly as when cleaning.
- The breathing tube may not be heated above 70 °C. Sterilization is not permitted.

**Accessories**

For disinfecting/sterilizing the exhalation system and the mask, see the section entitled "Disinfecting and sterilizing" in the relevant operating instructions.

**5.9 Disinfect the SOMNOaqua**

You can disinfect the humidifier. See the operating instructions for the disinfectant to be used. It is recommended that suitable gloves (e.g. household or disposable gloves) are used for disinfecting.

We recommend GIGASEPT FF as disinfectant.

The procedure for dismantling and assembling the humidifier is as for cleaning.

**Caution!**

We recommend replacing the plastic parts for hygiene reasons after a maximum period of use of two years.

**5.10 Change in patients**

**Caution!**

- If the SOMNObalance e or SOMNOaqua have been used without a bacteria filter, the device must be subjected to a hygiene treatment before it can be used for another patient. This has to be carried out by the manufacturer (Weinmann) or an authorized dealer.

- The procedure for the hygiene treatment is described in the inspection sheet and in the servicing and repair instructions for the SOMNObalance e.
6. Function check

6.1 Intervals

Perform a function check on both the SOMNObalance e and on the SOMNOaqua at least every 6 months.

⚠️ Warning!
If you discover faults during the function check, you may not use the devices again until the faults have been rectified.

6.2 Function check SOMNObalance e

1. Assemble the SOMNObalance e to make it operational with the breathing tube, exhalation system, mask and supply connection cable.

2. Press the on/off button to switch on the device.

3. To interrupt the mask test, if required, press the Softstart button.

4. If Softstart is switched on, switch it off at the Softstart button.
   The fan delivers air through the breathing tube to the mask. Current pressure is shown in the display in hPa.

5. Seal the opening of the mask, e.g. with your thumb or hand.

6. Compare the pressure shown in the display with the pressure prescribed. The deviation may not exceed ±1 hPa.

7. Switch off the device at the on/off button.

⚠️ Caution!
If the values/functions outlined here are not met/performed, send the device to the manufacturer (Weinmann) or to an authorized dealer for repair.
6.3 Function check SOMNOaqua

1. Perform a visual inspection of the plastic housing.
   In the event of cracks/damage and severe contamination, the plastic parts or seals should be replaced.
2. Fill the humidifier up to the mark with water.
3. Check whether the humidifier has any leaks.
4. Pour out the water.
5. Now pour in about 50 ml water.
6. Adapt the humidifier to the therapy device.
7. Lock the humidifier by plugging the adapter of the breathing tube into the device outlet port.
8. Switch on the therapy device.
9. Switch on the humidifier by pressing the humidifier button  III  on the therapy device.
10. Set a heating output of 6 on the therapy device.
11. Check whether the humidifier heats up.

  Caution!
  If the water does not heat up after 15 minutes, send the humidifier and the therapy device to the manufacturer (Weinmann) or to an authorized dealer for repair.
7. Troubleshooting

If there are any faults which cannot be rectified immediately, contact the manufacturer (Weinmann) or an authorized dealer immediately to have the device repaired. Do not continue using the device to avoid causing greater damage.

7.1 SOMNObalance e

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause of fault</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No running noise, standby/operation indicators not illuminated.</td>
<td>No supply voltage.</td>
<td>Check supply connection cable is securely connected. Possibly check function of supply socket by plugging a different device (e.g. a lamp) into it.</td>
</tr>
<tr>
<td>Device cannot be switched on by taking a breath.</td>
<td>Automatic switch on/off mode not activated.</td>
<td>Activate automatic switch on/off mode (4.4, Page 25).</td>
</tr>
<tr>
<td>Setting for exhalation relief cannot be changed.</td>
<td>Setting lockout is activated.</td>
<td>Clarify with your doctor whether the setting can be changed or adjustment enabled for your therapy.</td>
</tr>
<tr>
<td>Softstart will not switch on</td>
<td>Softstart function is locked out</td>
<td>Check with your doctor whether the soft start function can be enabled for your therapy.</td>
</tr>
<tr>
<td>Device does not switch off after about 5 seconds after mask has been removed.</td>
<td>Automatic switch on/off mode not activated.</td>
<td>Activate automatic switch on/off mode (4.4, Page 25).</td>
</tr>
<tr>
<td></td>
<td>Mask leaking.</td>
<td>Adjust headgear so that the mask does not leak.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possibly replace defective mask.</td>
</tr>
</tbody>
</table>
## Faults, Causes, and Remedies

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause of fault</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Err 10, Err 20, Err 30 ... Err 80 in display.</td>
<td>Problems in the electronics.</td>
<td>Disconnect the device from the power supply and reconnect it. If the error continues to be displayed, the device should be repaired by Weinmann or an authorized dealer as soon as possible.</td>
</tr>
<tr>
<td>Service indicator comes on.</td>
<td>Service required</td>
<td>Device must be checked or serviced by Weinmann or an authorized dealer as soon as possible.</td>
</tr>
</tbody>
</table>

### 7.2 SOMNOaqua

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause of fault</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidifier does not heat up.</td>
<td>Humidifier not switched on.</td>
<td>Switch on humidifier, see 4.7, Page 28.</td>
</tr>
<tr>
<td></td>
<td>Defect in the electronics</td>
<td>Send the humidifier together with the therapy device to the manufacturer (Weinmann) or to an authorized dealer for repair.</td>
</tr>
<tr>
<td>Humidifier leaking.</td>
<td>Heating element seal is defective.</td>
<td>Replace the seal, see Page 44.</td>
</tr>
<tr>
<td></td>
<td>Seal of bottom part of housing is defective.</td>
<td>Replace the seal, see Page 45.</td>
</tr>
<tr>
<td></td>
<td>Cracks in bottom part</td>
<td>Replace the bottom part.</td>
</tr>
</tbody>
</table>

### 7.3 Replace the seal of the heating element

1. Unscrew the heating element from the bottom part of the housing by turning it anticlockwise.
2. Take a small, clean screwdriver and carefully lift off the sealing ring.

   **Caution!**
   Ensure that the groove which holds the sealing ring is not damaged under any circumstances.

3. Push the new sealing ring carefully into the groove of the heating element. Under no circumstances use any tools to avoid damaging the seal.

4. Refit the new heating element.

### 7.4 Replace seal in bottom part of housing

1. Open the humidifier by turning the top and bottom parts anticlockwise in relation to one another.

2. Carefully lift the sealing ring out of the groove in the bottom part of the device.

   **Caution!**
   Ensure that the groove which holds the sealing ring is not damaged under any circumstances.

3. Push the new sealing ring carefully into the groove of the bottom part of the housing. Under no circumstances use any tools to avoid damaging the seal.

4. Refit the top and bottom parts.
8. Servicing

Regular servicing needs to be performed as a preventive measure. Please observe the specified intervals for these services.

8.1 Intervals

- After every 10,000 operating hours (service indicator appears in the display)
- No later than every 4 years (see service sticker on rear of device)

8.2 Scope of servicing

<table>
<thead>
<tr>
<th>Service</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter change</td>
<td>Section 5.</td>
</tr>
<tr>
<td>Hygiene treatment of device</td>
<td>Send device to Weinmann or authorized dealer</td>
</tr>
<tr>
<td>Replace any defective parts</td>
<td>Send device to Weinmann or authorized dealer</td>
</tr>
<tr>
<td>Complete function test</td>
<td>Section 6.</td>
</tr>
</tbody>
</table>

9. Disposal

Do not dispose of the device with domestic waste. To dispose of the unit properly, contact a licensed, certified electronic scrap disposal merchant. This address is available from your Environment Officer or from your local authority. The device packaging (cardboard and inserts) can be disposed of in paper recycling facilities.
10. Scope of supply

10.1 Standard scope of supply

<table>
<thead>
<tr>
<th>SOMNObalance e</th>
<th>WM 27420</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts</td>
<td>Order number</td>
</tr>
<tr>
<td>SOMNObalance e basic device</td>
<td>WM 27421</td>
</tr>
<tr>
<td>Breathing tube</td>
<td>WM 24445</td>
</tr>
<tr>
<td>Mains unit</td>
<td>WM 24480</td>
</tr>
<tr>
<td>Mains connecting cable</td>
<td>WM 24133</td>
</tr>
<tr>
<td>Operating instructions SOMNObalance e / SOMNOaqua</td>
<td>WM 66205</td>
</tr>
<tr>
<td>Brief Instructions SOMNObalance e</td>
<td>WM 66211</td>
</tr>
<tr>
<td>Carrying bag</td>
<td>WM 24449</td>
</tr>
<tr>
<td>Cleaning plug</td>
<td>WM 24451</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOMNObalance e with SOMNOaqua</th>
<th>WM 27460</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts</td>
<td>Order number</td>
</tr>
<tr>
<td>SOMNObalance e</td>
<td>WM 27420</td>
</tr>
<tr>
<td>SOMNOaqua</td>
<td>WM 24403</td>
</tr>
</tbody>
</table>

10.2 Accessories

The following accessories can be ordered separately if required.

<table>
<thead>
<tr>
<th>Parts</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidifier SOMNOaqua</td>
<td>WM 24403</td>
</tr>
<tr>
<td>Remote setting SOMNOadjust (for medical and technical specialists only)</td>
<td>WM 23930</td>
</tr>
<tr>
<td>SOMNOSupport evaluation software</td>
<td>WM 23975</td>
</tr>
<tr>
<td>(for medical and technical specialists only)</td>
<td></td>
</tr>
<tr>
<td>SOMNOmask, size S</td>
<td>WM 25110</td>
</tr>
<tr>
<td>SOMNOmask, size M</td>
<td>WM 25120</td>
</tr>
<tr>
<td>SOMNOmask, size L</td>
<td>WM 25130</td>
</tr>
<tr>
<td>SOMNOmask, size S, blue</td>
<td>WM 25210</td>
</tr>
<tr>
<td>SOMNOmask, size M, blue</td>
<td>WM 25220</td>
</tr>
<tr>
<td>SOMNOmask, size L, blue</td>
<td>WM 25230</td>
</tr>
<tr>
<td>Parts</td>
<td>Order number</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>SOMNOplus, size S</td>
<td>WM 25710</td>
</tr>
<tr>
<td>SOMNOplus, size M</td>
<td>WM 25720</td>
</tr>
<tr>
<td>SOMNOplus, size L</td>
<td>WM 25730</td>
</tr>
<tr>
<td>Silentflow</td>
<td>WM 23600</td>
</tr>
<tr>
<td>Noise insulation, complete (alternative exhalation system)</td>
<td>WM 23685</td>
</tr>
<tr>
<td>SOMNOcap, size M, blue</td>
<td>WM 23673</td>
</tr>
<tr>
<td>SOMNOcap, size L, blue</td>
<td>WM 23674</td>
</tr>
<tr>
<td>SOMNOcap, size M, white</td>
<td>WM 23686</td>
</tr>
<tr>
<td>SOMNOcap, size L, white</td>
<td>WM 23687</td>
</tr>
<tr>
<td>SOMNOstrap, blue</td>
<td>WM 23695</td>
</tr>
<tr>
<td>SOMNOstrap, white</td>
<td>WM 23177</td>
</tr>
<tr>
<td>SOMNOstrap, extra</td>
<td>WM 25250</td>
</tr>
<tr>
<td>JOYCEstrap</td>
<td>WM 26290</td>
</tr>
<tr>
<td>JOYCEstrap EXTRA, 3-point</td>
<td>WM 26291</td>
</tr>
<tr>
<td>JOYCEstrap EXTRA, 4-point</td>
<td>WM 26292</td>
</tr>
<tr>
<td>JOYCEcap</td>
<td>WM 26293</td>
</tr>
<tr>
<td>JOYCE vented, size S</td>
<td>WM 26110</td>
</tr>
<tr>
<td>JOYCE vented, size M</td>
<td>WM 26120</td>
</tr>
<tr>
<td>JOYCE vented, size L</td>
<td>WM 26130</td>
</tr>
<tr>
<td>JOYCE vented, size XL</td>
<td>WM 26140</td>
</tr>
<tr>
<td>JOYCE vented 40 hPa, size S</td>
<td>WM 26111</td>
</tr>
<tr>
<td>JOYCE vented 40 hPa, size M</td>
<td>WM 26121</td>
</tr>
<tr>
<td>JOYCE vented 40 hPa, size L</td>
<td>WM 26131</td>
</tr>
<tr>
<td>JOYCE vented 40 hPa, size XL</td>
<td>WM 26141</td>
</tr>
<tr>
<td>JOYCE GEL vented, size S</td>
<td>WM 26112</td>
</tr>
<tr>
<td>JOYCE GEL vented, size M</td>
<td>WM 26122</td>
</tr>
<tr>
<td>JOYCE GEL vented, size L</td>
<td>WM 26132</td>
</tr>
<tr>
<td>JOYCE non vented, size S</td>
<td>WM 26160</td>
</tr>
<tr>
<td>JOYCE non vented, size M</td>
<td>WM 26170</td>
</tr>
<tr>
<td>JOYCE non vented, size L</td>
<td>WM 26180</td>
</tr>
<tr>
<td>JOYCE non vented, size XL</td>
<td>WM 26190</td>
</tr>
<tr>
<td>JOYCE non vented 40 hPa, size S</td>
<td>WM 26161</td>
</tr>
<tr>
<td>JOYCE non vented 40 hPa, size M</td>
<td>WM 26171</td>
</tr>
<tr>
<td>JOYCE non vented 40 hPa, size L</td>
<td>WM 26181</td>
</tr>
<tr>
<td>JOYCE non vented 40 hPa, size XL</td>
<td>WM 26191</td>
</tr>
<tr>
<td>JOYCE GEL non vented, size S</td>
<td>WM 26162</td>
</tr>
<tr>
<td>JOYCE GEL non vented, size M</td>
<td>WM 26172</td>
</tr>
<tr>
<td>Parts</td>
<td>Order number</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>JOYCE GEL non vented, size L</td>
<td>WM 26182</td>
</tr>
<tr>
<td>JOYCE Full Face vented, size S</td>
<td>WM 26410</td>
</tr>
<tr>
<td>JOYCE Full Face vented, size M</td>
<td>WM 26420</td>
</tr>
<tr>
<td>JOYCE Full Face vented, size L</td>
<td>WM 26430</td>
</tr>
<tr>
<td>JOYCE Full Face vented, size XL</td>
<td>WM 26440</td>
</tr>
<tr>
<td>JOYCE Full Face vented 40 hPa, size S</td>
<td>WM 26411</td>
</tr>
<tr>
<td>JOYCE Full Face vented 40 hPa, size M</td>
<td>WM 26421</td>
</tr>
<tr>
<td>JOYCE Full Face vented 40 hPa, size L</td>
<td>WM 26431</td>
</tr>
<tr>
<td>JOYCE Full Face vented 40 hPa, size XL</td>
<td>WM 26441</td>
</tr>
<tr>
<td>JOYCE Full Face GEL vented, size S</td>
<td>WM 26412</td>
</tr>
<tr>
<td>JOYCE Full Face GEL vented, size M</td>
<td>WM 26422</td>
</tr>
<tr>
<td>JOYCE Full Face GEL vented, size L</td>
<td>WM 26432</td>
</tr>
<tr>
<td>JOYCE Full Face plus vented 40 hPa, size S</td>
<td>WM 26413</td>
</tr>
<tr>
<td>JOYCE Full Face plus vented 40 hPa, size M</td>
<td>WM 26423</td>
</tr>
<tr>
<td>JOYCE Full Face plus vented 40 hPa, size L</td>
<td>WM 26433</td>
</tr>
<tr>
<td>JOYCE Full Face plus vented 40 hPa, size XL</td>
<td>WM 26443</td>
</tr>
<tr>
<td>JOYCE Full Face non vented 40 hPa, size S</td>
<td>WM 26461</td>
</tr>
<tr>
<td>JOYCE Full Face non vented 40 hPa, size M</td>
<td>WM 26471</td>
</tr>
<tr>
<td>JOYCE Full Face non vented 40 hPa, size L</td>
<td>WM 26481</td>
</tr>
<tr>
<td>JOYCE Full Face non vented 40 hPa, size XL</td>
<td>WM 26491</td>
</tr>
<tr>
<td>JOYCE Full Face GEL non vented, size S</td>
<td>WM 26462</td>
</tr>
<tr>
<td>JOYCE Full Face GEL non vented, size M</td>
<td>WM 26472</td>
</tr>
<tr>
<td>JOYCE Full Face GEL non vented, size L</td>
<td>WM 26482</td>
</tr>
<tr>
<td>Oxygen supply valve</td>
<td>WM 24042</td>
</tr>
<tr>
<td>DC adapter (12-24 V)</td>
<td>WM 24469</td>
</tr>
<tr>
<td>Bacteria filter</td>
<td>WM 24476</td>
</tr>
<tr>
<td>Converter cable RS485-USB</td>
<td>WM 93318</td>
</tr>
<tr>
<td>PSG connecting lead for Weinmann</td>
<td>WM 24037</td>
</tr>
<tr>
<td>PSG connecting lead for Respironics / H+L</td>
<td>WM 23904</td>
</tr>
<tr>
<td>PSG connecting lead for Viasys (Jaeger)</td>
<td>WM 23908</td>
</tr>
<tr>
<td>PSG connecting lead for MAP</td>
<td>WM 23929</td>
</tr>
<tr>
<td>PSG connecting lead for Stomotron</td>
<td>WM 23941</td>
</tr>
<tr>
<td>Universal PSG connecting lead</td>
<td>WM 23976</td>
</tr>
<tr>
<td>Y-distributor</td>
<td>WM 24972</td>
</tr>
</tbody>
</table>

**Caution!**

You must follow the relevant operating instructions when using other mask systems.
## 10.3 Spare parts for SOMNObalance e

<table>
<thead>
<tr>
<th>Parts</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse dust filter</td>
<td>WM 24481</td>
</tr>
<tr>
<td>Fine filter, packed</td>
<td>WM 24401</td>
</tr>
<tr>
<td>Set of fine filters (12 off)</td>
<td>WM 15668</td>
</tr>
<tr>
<td>Set of coarse dust filters (2 off)</td>
<td>WM 15321</td>
</tr>
<tr>
<td>Carrying bag</td>
<td>WM 24449</td>
</tr>
<tr>
<td>SOMNObalqua humidifier</td>
<td>WM 24403</td>
</tr>
<tr>
<td>Mains unit</td>
<td>WM 24480</td>
</tr>
<tr>
<td>Supply connection cable</td>
<td>WM 24133</td>
</tr>
<tr>
<td>Covering cap, humidifier bracket, white</td>
<td>WM 24424</td>
</tr>
<tr>
<td>Cover, rear of device, white</td>
<td>WM 24428</td>
</tr>
<tr>
<td>Adapter, device outlet port, white</td>
<td>WM 24452</td>
</tr>
<tr>
<td>Covering cap, humidifier bracket, anthracite</td>
<td>WM 24489</td>
</tr>
<tr>
<td>Cover, rear of device, anthracite</td>
<td>WM 24470</td>
</tr>
<tr>
<td>Adapter, device outlet port, anthracite</td>
<td>WM 24493</td>
</tr>
<tr>
<td>Cleaning plug</td>
<td>WM 24451</td>
</tr>
</tbody>
</table>

## 10.4 Spare parts SOMNObalqua

<table>
<thead>
<tr>
<th>Parts</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top part of housing</td>
<td>WM 24411</td>
</tr>
<tr>
<td>Bottom part of housing</td>
<td>WM 24412</td>
</tr>
<tr>
<td>Heating element, complete</td>
<td>WM 24202</td>
</tr>
<tr>
<td>Sealing plug</td>
<td>WM 24414</td>
</tr>
<tr>
<td>Seal, top part of housing</td>
<td>WM 1145/158</td>
</tr>
<tr>
<td>Seal, heating element</td>
<td>WM 1145/19</td>
</tr>
<tr>
<td>Cleaning plug</td>
<td>WM 24451</td>
</tr>
</tbody>
</table>
## 11. Technical specifications

### 11.1 Specifications

<table>
<thead>
<tr>
<th></th>
<th>SOMNO\textit{balance e}</th>
<th>SOMNO\textit{balance e with SOMNO\textit{aqua}}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product class to</td>
<td></td>
<td>IIA</td>
</tr>
<tr>
<td>93/42/EEC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions WxHxD in cm</td>
<td>21 x 9 x 27</td>
<td>21 x 14 x 27</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 1.7 kg</td>
<td>approx. 1.9 kg (excl. water)</td>
</tr>
<tr>
<td>Temperature range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation</td>
<td>+5 °C to +35 °C</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>−40 °C to +70 °C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If the device is operated at +40 °C, the air given off may heat up to as high as 42 °C.</td>
<td></td>
</tr>
<tr>
<td>Permitted humidity for</td>
<td>≤ 95 % rH (no condensate formed)</td>
<td></td>
</tr>
<tr>
<td>operation and storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air pressure range</td>
<td>600 - 1100 hPa (allows operation at altitudes of up to 4000 m)</td>
<td>automatic adaptation to altitude</td>
</tr>
<tr>
<td>Connection diameter</td>
<td>19.5 (to fit 22 mm standard tapered connector)</td>
<td></td>
</tr>
<tr>
<td>of breathing tube</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(mask side) in mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical rating</td>
<td>115-230 V AC +10/-15 %, 50–60 Hz with mains unit WM 24480 or 12-24 V DC -15/+25 % with DC adapter WM 24469</td>
<td></td>
</tr>
<tr>
<td>Power consumption during</td>
<td></td>
<td></td>
</tr>
<tr>
<td>operation</td>
<td>230 V 115 V 24 V 12 V</td>
<td>230 V 115 V 24 V 12 V</td>
</tr>
<tr>
<td>Power consumption during</td>
<td>0.1 A 0.2 A 0.9 A 1.8 A</td>
<td>0.23 A 0.45 A 2.0 A 4.0 A</td>
</tr>
<tr>
<td>standby</td>
<td>0.02 A 0.04 A 0.2 A 0.4 A</td>
<td>0.02 A 0.04 A 0.2 A 0.4 A</td>
</tr>
<tr>
<td>Classification to prEN 60601-1:2005</td>
<td>Protection class II</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>Type of protection against electric shock</td>
<td>Type B</td>
<td></td>
</tr>
<tr>
<td>Degree of protection against electric shock</td>
<td>IPX1</td>
<td></td>
</tr>
<tr>
<td>Protection against damaging penetration of water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating mode</td>
<td>Continuous duty</td>
<td></td>
</tr>
<tr>
<td>Electromagnetic compatibility (EMC) to EN 60601-1-2</td>
<td>Test parameters and limit values can be requested from the manufacturer if required.</td>
<td></td>
</tr>
<tr>
<td>– Radio interference suppression</td>
<td>EN 55011 B</td>
<td></td>
</tr>
<tr>
<td>– Radio interference immunity</td>
<td>EN 61000-4 Parts 2 to 6, Part 11</td>
<td></td>
</tr>
<tr>
<td>Mean sound pressure level/operation 1 m away from device in patient position</td>
<td>approx. 27 dB (A) at 10 hPa (corresponds to a sound power level of 35 dB (A))</td>
<td></td>
</tr>
<tr>
<td>CPAP operating pressure range</td>
<td>4 to 20 hPa</td>
<td></td>
</tr>
<tr>
<td>Pressure accuracy</td>
<td>±0.6 hPa (1 mbar = 1 hPa = 1 cm H₂O)</td>
<td></td>
</tr>
<tr>
<td>max. CPAP pressure in the event of a fault</td>
<td>&lt; 40 hPa</td>
<td></td>
</tr>
<tr>
<td>Flow at max. speed at:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 hPa</td>
<td>115 l/min</td>
<td></td>
</tr>
<tr>
<td>15 hPa</td>
<td>125 l/min</td>
<td></td>
</tr>
<tr>
<td>10 hPa</td>
<td>145 l/min</td>
<td></td>
</tr>
<tr>
<td>5 hPa</td>
<td>160 l/min</td>
<td></td>
</tr>
<tr>
<td>0 hPa</td>
<td>175 l/min</td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>±15 l/min</td>
<td></td>
</tr>
</tbody>
</table>
Technical specifications

<table>
<thead>
<tr>
<th>SOMNObalance e</th>
<th>SOMNObalance e with SOMNOaqua</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating of respiratory air</td>
<td>2.5 °C</td>
</tr>
<tr>
<td>Short-term pressure consistency measured to prEN ISO 17510:2005 at:</td>
<td></td>
</tr>
<tr>
<td>20 hPa</td>
<td>Δp = 0.7 hPa</td>
</tr>
<tr>
<td>15 hPa</td>
<td>Δp = 0.6 hPa</td>
</tr>
<tr>
<td>10 hPa</td>
<td>Δp = 0.5 hPa</td>
</tr>
<tr>
<td>5 hPa</td>
<td>Δp = 0.4 hPa</td>
</tr>
<tr>
<td>Long-term pressure consistency to prEN 17510-1:2005</td>
<td>Δp = 0.1 hPa</td>
</tr>
<tr>
<td>Fine filter separation level</td>
<td></td>
</tr>
<tr>
<td>up to 1 μm</td>
<td>≥ 99.5 %</td>
</tr>
<tr>
<td>up to 0.3 μm</td>
<td>≥ 85 %</td>
</tr>
<tr>
<td>Fine filter service life</td>
<td>approx. 250 hours with normal room air</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOMNOaqua</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product class to 93/42/EEC</td>
</tr>
<tr>
<td>Dimensions WxHxD in mm</td>
</tr>
<tr>
<td>Weight (excl. water)</td>
</tr>
<tr>
<td>Temperature range</td>
</tr>
<tr>
<td>Operation</td>
</tr>
<tr>
<td>Storage</td>
</tr>
<tr>
<td>Operation and storage in moist atmosphere</td>
</tr>
<tr>
<td>Ambient pressure range</td>
</tr>
<tr>
<td>Electrical rating</td>
</tr>
<tr>
<td>Electrical output</td>
</tr>
</tbody>
</table>
### SOMNOaqua

<table>
<thead>
<tr>
<th>Classification to EN 60601-1</th>
<th>Type B device</th>
</tr>
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<tbody>
<tr>
<td>Degree of protection against electric shock</td>
<td></td>
</tr>
<tr>
<td>Electromagnetic compatibility (EMC) to EN 60601-1-2</td>
<td>EN 55011 B</td>
</tr>
<tr>
<td>Radio interference suppression</td>
<td>IEC 61000-4, Parts 2 to 6, Part 11</td>
</tr>
<tr>
<td>Radio interference immunity</td>
<td></td>
</tr>
<tr>
<td>Max. permitted filling quantity</td>
<td>300 ml</td>
</tr>
<tr>
<td>Max. permitted operating pressure</td>
<td>20 hPa</td>
</tr>
<tr>
<td>Max. permitted flow (flowing away freely)</td>
<td>190 l/min</td>
</tr>
<tr>
<td>Max. mask temperature</td>
<td>37 °C</td>
</tr>
<tr>
<td>Gas leakage at 30 hPa</td>
<td>not measurable</td>
</tr>
<tr>
<td>Humidifier output at humidifier stage 6:</td>
<td></td>
</tr>
<tr>
<td>flow rate = 20 l/min</td>
<td>6.3 mg/l</td>
</tr>
<tr>
<td>flow rate = 30 l/min</td>
<td>6.8 mg/l</td>
</tr>
<tr>
<td>flow rate = 40 l/min</td>
<td>9.0 mg/l</td>
</tr>
</tbody>
</table>

The right to make design modifications is reserved.

All values determined under ATPD conditions (ambient temperature and pressure, dry).

### 11.2 Pneumatic diagram

![Pneumatic diagram](image-url)

- **O₂ pressure source**
- **Flow adjuster up to max. 4 l/min**
- **Optional O₂ valve**
- **Filter**
- **Fan**
- **Optional humidifier**
- **Optional bacteria filter**
- **Breathing tube**
- **Exhalation system**
- **Patient mask (nasal or full-face mask)**
- **Inlet ambient air**
- **Pressure sensor for patient pressure**

---

54 Technical specifications
11.3 Pressure/volume curve

![Graph showing p-V curve at AV = 0.5 l and f=20/min.]

11.4 Safety distances

Recommended safe distances between portable and mobile high-frequency telecommunication devices (e.g. mobile phones) and the SOMNObalance e or SOMNOaqua

<table>
<thead>
<tr>
<th>Rated output of HF device in W</th>
<th>Safe distance as a function of transmission frequency in m</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>150 KHz - 80 MHz</td>
</tr>
<tr>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>0.1</td>
<td>0.11</td>
</tr>
<tr>
<td>1</td>
<td>0.35</td>
</tr>
<tr>
<td>10</td>
<td>1.10</td>
</tr>
<tr>
<td>100</td>
<td>3.50</td>
</tr>
</tbody>
</table>
12. Warranty

- Weinmann offers a warranty that the product, when used in accordance with purpose, will remain free from defects for a period of two years from the date of purchase. For products whose durability is indicated as less than two years, the warranty expires on the expiry date indicated on the packaging or in the operating instructions.

- Claims under the warranty can be made only when accompanied by the sales receipt, which must show salesperson and date of purchase.

- We offer no warranty in the case of:
  - the operating instructions being disregarded
  - operating errors
  - incorrect use or incorrect handling
  - third-party intervention in the device by unauthorized persons for the purposes of repair
  - force majeure such as lightning strikes etc.
  - transport damage due to poor packing when returning a device
  - lack of servicing
  - operational/normal wear and tear.
    This includes but is not limited to the following components:
    - filters
    - batteries and rechargeable batteries
    - consumables etc.
  - failure to use original spare parts

- Weinmann is not liable for consequential damage caused by a defect unless it is attributable to intent or gross negligence or in the event of injury to life or limb due to ordinary negligence.

- Weinmann reserves the right to decide whether to rectify a defect, supply a defect-free item or reduce the purchase price by a reasonable amount.

- If Weinmann rejects a claim under warranty, it will not bear any of the expense of transport between customer and manufacturer.

- Statutory claims under warranty are not affected by these provisions.
EC Declaration of Conformity on Medical Devices

We, the manufacturer

Weinmann
Geräte für Medizin GmbH+Co.KG
Kronsaalweg 40 D – 22525 Hamburg

declare in sole, responsibility the

Product Name: auto-CPAP-Therapy device
Type/Model: SOMNObalance e
SOMNObalance e with SOMNOaqua

being in conformity with the respective regulations of the
following guideline:

Medical Device Directive 93/42/EWG

Classification: IIa

standards used

in particular:

EN 60601-1: 2005
prEN ISO 17510-1: 2005
prEN ISO 8185-1: 2005

Mark:
The product has the mark by
TUV-Rheinland Product Safety GmbH
51105 Cologne – Germany

Hamburg, 02/08/2007

K.-A. Feldhahn
President
Chief Technology Officer
14. Glossary

90 % pressure centile

The pressure determined by autoCPAP for 90 % of therapy time was less than or equal to this pressure.

AHI

AHI means Apnea/Hypopnea Index and describes the number of respiratory cessations and periods of significantly reduced respiration depth with reduced oxygen in an hour. An example: at 20 apneas and 10 hypopneas within one hour, AHI = 30.

Apnea

A cessation of external respiration lasting at least 10 seconds is called a respiratory cessation or apnea. The apnea is usually ended by a waking reaction of the body. This interrupts sleep and reduces its recovery function. A distinction is made between obstructive apneas in which respiration is prevented by an obstruction of the upper airways and central apneas in which the respiratory drive fails.

autoCPAP

autoCPAP therapy represents a special form of CPAP therapy. This automatically determines the therapeutic pressure required in each case and supplies it to the patient. The well-being of the patient is improved and pressure-related side-effects are reduced.

CPAP

CPAP therapy is for treating obstructive sleep apnea syndrome. CPAP stands for Continuous Positive Airway Pressure, i.e. the patient is continuously fed respiratory air
at a constant slight pressure whilst asleep. This is generally performed using a nasal or full-face mask. This "pneumatic bracing" is used to keep the airways open and to prevent the occurrence of apneas, hypopneas, flow limitations and snoring.

**Hypopnea**

A reduction in respiratory flow of at least 50% is called a hypopnea. There are obstructive and central hypopneas.

**RDI**

Respiratory Disturbance Index (RDI)

With the SOMNObalance e, RDI corresponds to AHI (see definition above).
15. Index

A
Accessories 13, 47
  - disinfect 40
Automatic switch on/off mode 10, 25, 26, 43

B
Bacteria filter 2, 13, 21, 40, 49
Breathing 35
Mask 20, 26, 30
Breathing tube 2, 3, 47
  - clean 35
  - disinfect 40
  - dry 35

C
Change in patients 40
Cleaning 34

D
Daily therapy time 30, 31
Disinfect
  - accessories 40
  - device 39
  - humidifier 40
Disinfecting 34
Distance 12
Dry 35

E
exhalation 41
Exhalation relief 10, 23
Exhalation system 20, 30, 35, 41, 48

F
Filter 43, 44, 49, 53
Function check 41

H
Humidifier 2, 4, 9, 11, 13, 39, 47, 49, 51, 55
  - adapt 19
  - automatic off 29
  - clean 37
  - descale 39
  - disinfect 40
  - fill 18
  - function check 42
  - replace seal 45
  - switch off 29
  - switch on 28

I
Info menu 31
Initial pressure function 11

L
Location 16

M
Malfunctions 43
Markings 5
Mask test 11

O
Operating hours 31
Oxygen supply 14, 21

P
Patient menu 22
Power outage 11
Power supply 16

R
RDI 31
Repair 14

S
Safety instructions 12, 14
Save energy 30
Servicing 14
Side effects 15
Socket 12
softPAP 10, 23
  - deactivate 23
  - select stage 23
softPAP mode 10
Softstart 11, 27, 41
Softstart function 11
SOMNOaqua 28, 51, 55
Spare parts 13, 49
Standby 16, 22, 30
Standby mode 30

T
Therapy time 31
Total therapy time 26, 31
Transport 13
Travel 33

W
Warranty 56

Numerics
90 % pressure centile 31