



CPAP Units:

SOMNOcomfort 2

SOMNOcomfort 2
SOMNOcomfort 2 with SOMNOaqua

WM 24400 / WM 24465
WM 24450 / WM 24420

SOMNOcomfort 2e

SOMNOcomfort 2e
SOMNOcomfort 2 e with SOMNOaqua

WM 24405
WM 24455

autoCPAP Units:

SOMNObalance

SOMNObalance, white
SOMNObalance, white with SOMNOaqua
SOMNObalance, anthracite
SOMNObalance, anthracite with SOMNOaqua

WM 27400
WM 27440
WM 27410
WM 27450

SOMNObalance e

SOMNObalance e
SOMNObalance e with SOMNOaqua

WM 27420
WM 27460

Servicing and Repair Instructions

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Introduction

The objective of these servicing and repair instructions is to allow you, as a **well-trained and knowledgeable specialist** to become acquainted with the functionality, technical specifications, servicing and repair of SOMNOcomfort 2 and SOMNOcomfort 2e as well as SOMNObalance and SOMNObalance e. This will enable you to efficiently train customers, repair malfunctions independently and to perform required servicing checks as defined in this servicing and repair instructions; it will also prepare you to perform any resulting adjustments.

In the event of a warranty claim, send the devices to WEINMANN.

In order to handle warranty or goodwill requests we will require you to submit proof of purchase (invoice) of the customer.

Repair and servicing work must be performed by Weinmann or knowledgeable, well trained specialists.

Any repairs not carried out by a qualified service engineer are your responsibility and may invalidate the warranty!

When performing servicing, **only genuine Weinmann replacement parts** should be used.

Please consider:

Your customers trust in your capabilities just as much as you place your confidence into Weinmann.

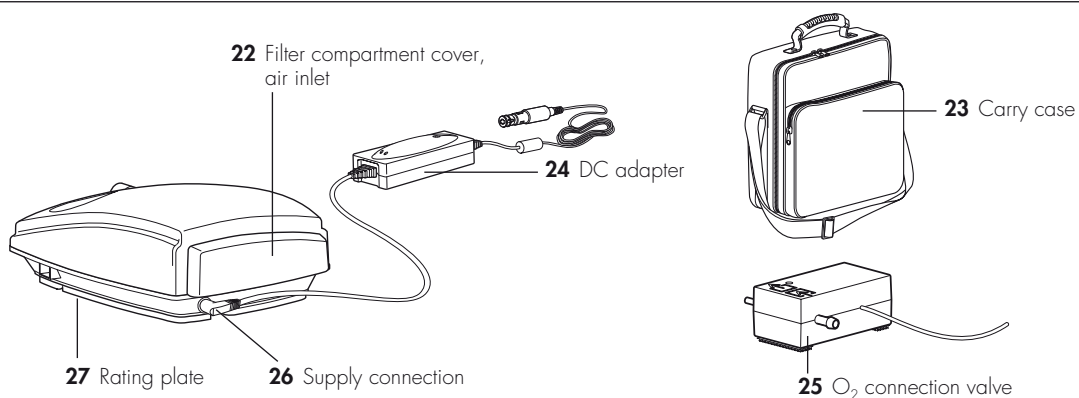
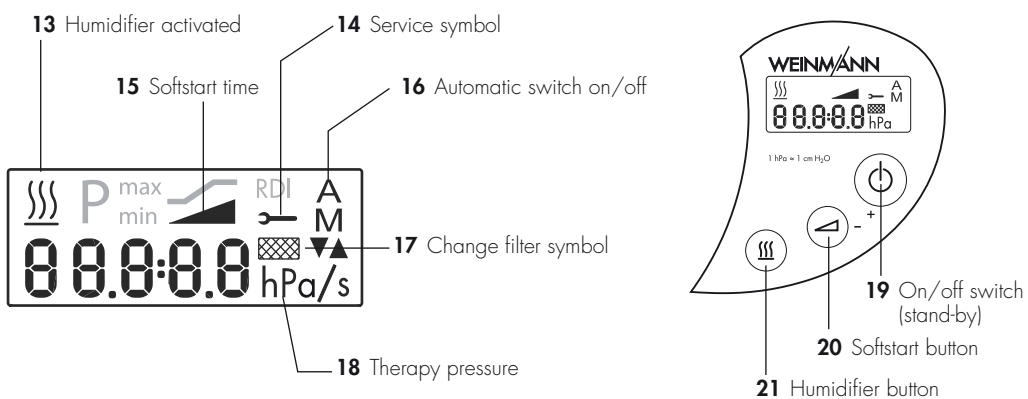
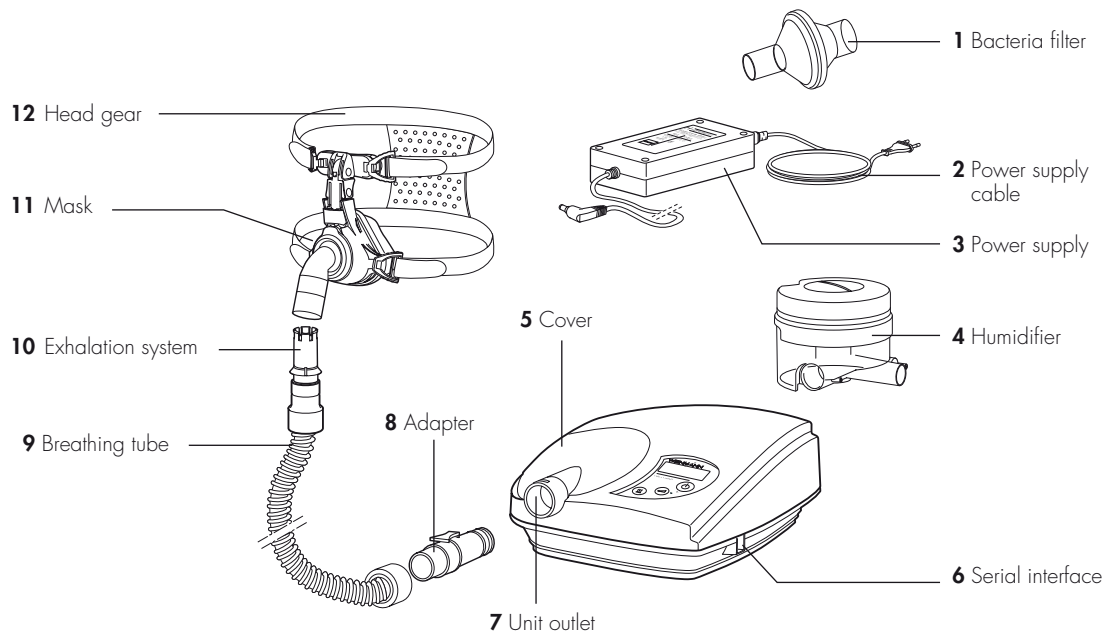
Note:

The following information is to be found in the units instructions for use:

- Safety instructions
- Setup of equipment
- Operation
- Hygienic preparation
- Warranty

1. Overview

SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e



Legend

1 Bacteria filter (accessory)

Used to protect the patient from bacteria, particularly if the unit is being used by a number of patients.

2 Power supply cable

Connects the power supply to the mains supply.

3 Power supply

Used to supply power to the unit.

4 Humidifier

Used to heat and humidify the air flow created by the therapy unit.

5 Cover

Connects the unit outlet with the humidifier connection. Is required if a humidifier is not being used.

6 Serial interface

Connects the unit in order to display or evaluate therapy data or to connect the O₂-connection valve.

7 Unit outlet

The air flows from here via the breathing tube and mask to the patient.

8 Adapter

Connects the breathing tube to the unit outlet.

9 Breathing tube

The air flows through the breathing tube to the mask.

10 Exhalation system (accessory)

Exhalation air containing carbon dioxide is diverted here during the therapy.

11 Mask (accessory)

The mask is used to provide the patient with air at the required therapy pressure.

12 Head gear (accessory)

Helps locate the mask correctly and securely.

13 Humidifier activated

This symbol appears when the humidifier is in operation. The current humidity level is displayed.

14 Service symbol

This symbol will appear after 5000 operating hours (SOMNOcomfort 2, SOMNObalance) or 10.000 operating hours (SOMNOcomfort 2e, SOMNObalance e). The unit must then be serviced.

15 Softstart time

This symbol appears when the softstart time is set or the softstart is activated.

16 Automatic switch on/off

The symbol "A" (automatic) appears when the Automatic switch on/off is active. The symbol "M" (manual) appears when the Automatic switch on/off is inactive.

17 Change filter symbol

This symbol appears every 250 operating hours. The fine filter must then be changed.

18 Therapy pressure

The therapy pressure is shown in hPa. 1 hPa = 1 mbar = 1 cm H₂O.

19 On/off switch (stand-by)

Switches the therapy unit on and off.

20 Softstart button

Activates the softstart or sets the softstart time (5 - 30 minutes in 5 minute steps).

21 Humidifier button

Activates the humidifier or sets the humidifier level (6 levels).

22 Filter compartment cover, air inlet

Covers and securely locates the coarse and fine dust filters.

23 Carry case

For carrying the therapy unit.

24 DC adapter (accessory)

For operating the therapy unit via a DC socket (12 - 24 V).

25 O₂ connection valve (accessory)

For introducing oxygen into the mask.










26 Supply connection

This is the connection for the external power supply or DC adapter.


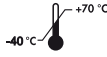
27 Rating plate

Provides information about the unit, e.g. serial number and year built.

Special markings on the unit

Symbol	Meaning
SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e:	
	Unit inlet: allows air at room temperature to enter
	Unit outlet SOMNOcomfort 2/SOMNObalance: air escapes with 4 - 18 hPa SOMNOcomfort 2e/SOMNObalance e: air escapes with 4 - 20 hPa
	Side connection socket: SOMNOcomfort 2/SOMNOcomfort 2e connection for setting the therapy parameters with SOMNOadjust WM 23930 and SOMNOSupport WM 23975 by specialist staff or to control the O ₂ connection valve, WM 24042. Max. current consumption 163 mA. SOMNObalance/SOMNObalance e 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 O ₂ supply valve WM 24042. Max. current consumption 163 mA. Analog output for therapy pressure, flow, loss flow, relative respiratory minute volume and OPP (obstructive pressure peaks) (0 to 1 V DC).
	Year built
	Unit type B
	Do not dispose of the unit as domestic waste.
SN	Unit serial number
	Unit of protection class II
SOMNOaqua (optional)	
	Do not use the humidifier on patients whose airways have been bypassed.
	Unit is hot. Do not touch the heater rod.

Markings on the packaging

Symbol	Meaning
SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e:	
SN	Unit serial number
	Unit of protection class II
	Permitted temperature for storage: - 40°C to + 70°C
% 0-95	Permitted humidity for storage: max. 95% relative humidity.

2. Description of the equipment

2.1 Intended use SOMNOcomfort 2 and SOMNOcomfort 2e

SOMNOcomfort 2 and SOMNOcomfort 2e are CPAP-Therapy units for the treatment of sleep related respiratory disorders.

- SOMNOcomfort 2/SOMNOcomfort 2e creates continuous positive airway pressure (CPAP).
- While sleeping, the patient's airways are stabilized by the applied pressure.
- Air pressure is administered by means of a breathing mask.
- SOMNOcomfort 2/SOMNOcomfort 2e can be used for patients age 12 and up.

Important!

SOMNOcomfort 2/SOMNOcomfort 2e can only reliably prevent airway closure when the CPAP pressure prescribed by a doctor for the specific patient has been calculated, e.g. in a sleep laboratory. Pressure is set by either using the SOMNOadjust remote control or SOMNOsupport at the units front control panel.

SOMNOcomfort 2 and SOMNOcomfort 2e are **not** designed for life support.

2.2 Intended use SOMNObalance and SOMNObalance e

SOMNObalance and SOMNObalance e are autoCPAP devices for treating sleep-related respiratory disorders.

- SOMNObalance/SOMNObalance e creates positive airway pressure (PAP),
- While sleeping, the patient's airways are stabilized by the applied pressure.
- The pressure is administered by a nasal or full-face mask.
- SOMNObalance/SOMNObalance e can be used for patients age 12 and up.
- SOMNObalance/SOMNObalance e detects respiratory events and varies airway pressure accordingly.

- SOMNObalance/SOMNObalance e can be operated with or without the SOMNOaqua respiratory air humidifier.
- SOMNObalance/SOMNObalance e displays therapy data on the device.

Important!

SOMNObalance/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 accordingly, for example in a sleep laboratory.

SOMNObalance and SOMNObalance e are **not** designed for life support.

2.3 Functional description SOMNOcomfort 2 and SOMNOcomfort 2e

SOMNOcomfort 2 and SOMNOcomfort 2e operate according to the principle of an electrically driven flow generator, with the pressure level being controlled electronically.

- A fan draws in ambient air via a filter and conveys it to the unit outlet. From here the air flows through the breathing tube and the mask to the patient.
- A pressure sensor measures the pressure at the unit outlet and shows this in the display. The microprocessor-controlled flow generator controls the pressure to the set value and reduces fluctuations in pressure caused by breathing.
- A softstart automatic system is installed to help the patient fall asleep more easily. When the unit is switched on, the CPAP pressure starts at the initial pressure selected by the doctor and is then slowly increased to the setpoint pressure selected. The time of the pressure increase can be adjusted between 5 and 30 minutes in 5 minute increments.
- The therapy unit offers an automatic on/off feature. The unit can then be switched on by breathing into the mask. If there is no pressure for approx. 1.5 seconds (e.g. because the mask has been removed), it will switch off automatically.
- The therapy parameters are set by trained personnel using the remote control system SOMNOadjust or the evaluation program SOMNOsupport.
- The therapy unit will automatically save all settings in the event of a power failure. This means that the unit does not need to be reset when power is restored.

2.4 Functional description SOMNObalance and SOMNObalance e

- A fan draws in ambient air via a filter and conveys it to the unit outlet. From here the air flows through the breathing tube 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 to 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 obstructive 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.

3. Servicing

3.1 Intervals

Servicing every 2 years or 5000 operating hours (SOMNOcomfort 2/SOMNObalance only)

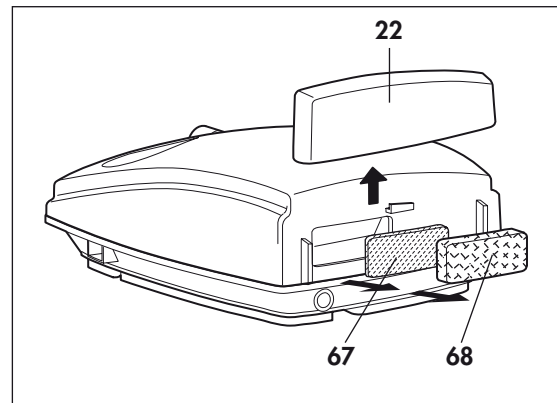
Following components to be wiped down with disinfectant: <ul style="list-style-type: none">• Unit housing• Filter compartment cover• Cover• Power supply• Power supply cable	– (see chapter 4., page 13)
Replace filter	– (see chapter 3.2, page 11)
Check proper device operation incl. pressure measuring	– (see chapter 5., page 15)
Only if excessive soiling is present: Clean inside using a vacuum cleaner: <ul style="list-style-type: none">• Unit housing• Filter compartment cover Clean areas of extreme soiling.	<ul style="list-style-type: none">– Opening the unit (see chapter 7.4, page 23)– Closing the unit (see chapter 7.5, page 24)

Servicing every 4 years or 10,000 operating hours / change of patient

Following components to be wiped down with disinfectant: <ul style="list-style-type: none">• Unit housing• Filter compartment cover• Power supply• Power supply cable	– (see chapter 4., page 13)
Clean inside using a vacuum cleaner: <ul style="list-style-type: none">• Unit housing• Filter compartment cover Clean areas of extreme soiling.	<ul style="list-style-type: none">– Opening the unit (see chapter 7.4, page 23)– Closing the unit (see chapter 7.5, page 24)
<ul style="list-style-type: none">• Replace the following parts:• Baffle box, assembled 53• Cover 5• Gasket, fan housing 66• Foam, lower part 59• Decoupling tube, outside 50• Adapter, assembled 8	– (see chapter 7.6, page 25)
Replace filter	– (see chapter 3.2, page 11)
Check proper device operation incl. pressure measuring	– (see chapter 5., page 15)

3.2 Filter change

1. In order to prevent water from entering the SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e, detach the humidifier **4** from the unit. When doing so, please refer to the included instructions for use.
2. Remove the filter compartment **22** cover on the rear of the unit.
3. Remove the coarse dust filter **68**.
4. Remove the fine dust filter **67**.
5. Replace the filters and close the cover on the rear of the unit.
6. Attach the humidifier where applicable. Please refer to chapter "3.4 Humidifier" of the instructions for use.



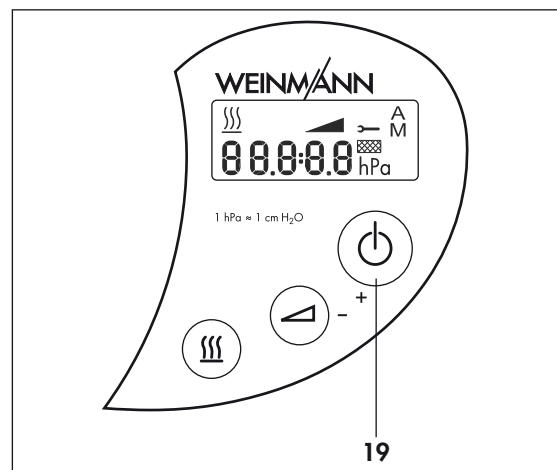
Clear the filter change indicator:

- When switching the unit on, press and hold the on/off switch **19** until the filter change indicator goes blank.

Reset the hours meter

If the fine filter was changed due to soiling before 250 operating hours, the hours meter must be reset to zero. Proceed as follows:

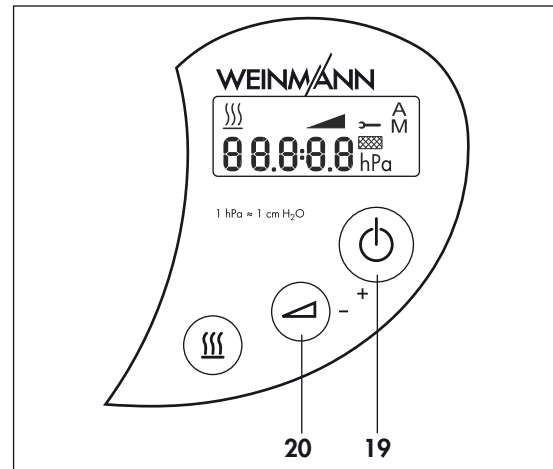
1. When switching the unit on, press and hold the on/off switch **19**.
The filter change indicator will come on after about three seconds before going off again after another three seconds.
2. Release the on/off switch.



3.3 Reset service symbol

After every servicing and hygienic preparation the display's service symbol **14** will have to be reset in order to reset the service indicator back to 0 hours.

1. To delete the service symbol, ensure the unit is switched off and press and hold softstart button **20** until the setting option for Automatic on/off (SOMNOcomfort 2/SOMNOcomfort 2e) or the SoftPAP stage (SOMNObalance/SOMNObalance e) appears.
2. Now, additionally press the on/off switch **19**, until an **5** (for "key") appears.
3. Now release both buttons.
4. SOMNOcomfort 2/SOMNOcomfort 2e:
By pressing the on/off switch briefly **19** the servicing indicator can be set and deleted.
SOMNObalance/SOMNObalance e:
Briefly pressing on/off switch **19** allows the servicing code to be set. It is deleted by pressing softstart button **20**.
5. Additionally, a new servicing label should be attached at the rear of the unit.
SOMNOcomfort 2/SOMNObalance:
Current year + 2
SOMNOcomfort 2e/SOMNObalance e:
Current year + 4.



3.4 Disposal



Do not dispose of the unit as domestic waste. To dispose of the unit properly, please contact a licensed and certified electronic waste disposal merchant. Names and addresses can be obtained from your Environmental Officer or municipal authorities.

4. Cleaning and disinfecting instructions

4.1 Cleaning and disinfecting while in use

Attention!

You will find appropriate instructions in Chapter 5. "Cleaning and disinfecting instructions" of the instructions for use *SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e*.

The following describes the cleaning and disinfecting procedures while repairing or transferring the unit to another patient.

4.2 Cleaning and disinfecting during repairs

During repairs, the following steps are to be performed by the authorized dealer!

Attention!

The instructions of disinfectant manufactures must be adhered to (9.3, page 36). We recommend that you wear suitable gloves when disinfecting the equipment (e.g. household or disposable gloves).

- Disinfect outer housing and power supply cable by wiping them down with TERRALIN.
- Clean or replace (depending on condition) breathing tube, headgear and mask according to the instructions for use.
- Open the unit according to 7.4.
- Replace **68 + 67** coarse- and fine dust filters.
- Vacuum clean inner housing and filter compartment, clean areas of extreme soiling.
- Close the unit according to 7.5.

4.3 Cleaning and disinfecting, new patient

If the unit is to be disinfected and cleaned in order to transfer it to a new patient, the following steps should be taken:

Attention!

The instructions of the disinfectant manufactures must be adhered to (9.3, page 36). We recommend that you wear suitable gloves when disinfecting the equipment (e.g. household or disposable gloves).

- Disinfect outer housing, power supply and power supply cable by wiping them down with TERRALIN. Dispose of the bag, breathing tube and mask system, and replace with new components.
- Open the unit according to chapter 7.4.
- Vacuum clean inner housing and filter compartment, clean areas of extreme soiling.
- Replace **68 + 67** coarse- and fine dust filters.
- Cover **5**, fan housing gasket **66**, foam **59**, decoupling tube **50**, adapter **8** must be replaced.
- Baffle box **53** should be replaced according to chapter 7.10.
- Close the unit according to chapter 7.5.

4.4 Cleaning and disinfecting the humidifier while in use

You will find corresponding instructions in chapter 4. "Disinfecting and cleaning instructions" of the instructions for use SOMNOcomfort 2(e).

4.5 Cleaning and disinfecting the humidifier, new patient

If the unit is to be disinfected and cleaned in order to transfer it to a new patient, the following steps should be taken:

- For hygiene reasons, we recommend that the plastic parts are replaced after a maximum of two years use. The replacement part list can be found in the instructions for use SOMNOcomfort 2/SOMNOaqua or SOMNObalance/SOMNOaqua.
- If plastic components and heater rod are extremely soiled or encrusted with lime you should use a new unit, otherwise proceed according to chapter 4. "Disinfecting and cleaning instructions" of the instructions for use SOMNOcomfort 2(e).

5. Final test

5.1 General

Important!

A final test is required after each and every repair.

Please maintain a record of all maintenance and service work that you perform. We suggest that you maintain this record on a service record form, as found on page 34 of this manual. You may photocopy this page for manual entry, or obtain the manual in PDF format, display it using Acrobat Reader, complete it on a PC, and print it.

Enter the following values for *SOMNOcomfort 2*/*SOMNOcomfort 2e* in your service record (see page 42):

- Operating hours
- Humidity level
- Softstart time and initial pressure
- Patient's therapy pressure

Enter the following values for *SOMNObalance*/*SOMNObalance e* in your service record (see page 42):

- Operating hours
- Humidity level
- Softstart time and initial pressure
- Mode
 - for CPAP: therapy pressure
 - for APAP: bottom and top pressure limit, rise speed as per patient record

If you detect errors or deviations from defined values in the course of your final testing you must not redeploy *SOMNOcomfort 2*/*SOMNOcomfort 2e*/*SOMNObalance*/*SOMNObalance e* before these errors have been eliminated. You can determine possible causes of such errors and recommended countermeasures by referring to chapter "6. Troubleshooting" on page 19.

5.2 Performing the test

5.2.1 Preparation

- Assemble the therapy unit ready to use including breathing tube **9**, mask **11**, power supply **3** and power supply cable **2**.

5.2.2 Checking the power supply cable

1. Check the power supply cable **2**.

Make sure that

- insulation is intact,
- the cable is not damaged,
- and that there are no loose connections.

2. Replace the power supply cable **2** if necessary.

5.2.3 Checking the power supply

1. Connect the power supply **3** to an available power source.
 - If the LED lights up, the power supply is in order.
2. Replace the power supply **3** if necessary.

5.2.4 Checking the housing

- Check the housing's general condition.

If the housing is damaged in any way, replace the respective part of the housing (see also Chapter 7.12, Page 31 and Chapter 7.13, Page 31).

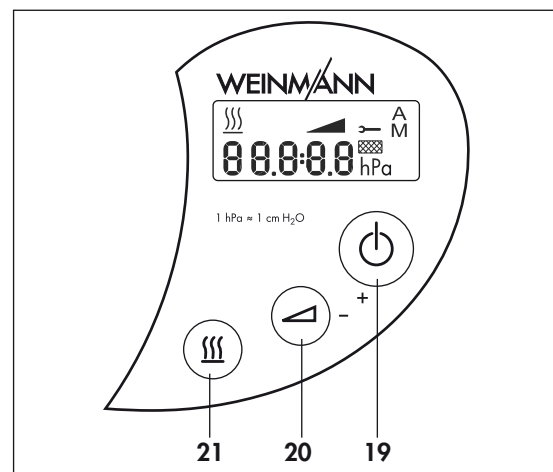
5.2.5 Checking the control panel and indicators

1. Make sure that front panel foil of the control panel is attached flush and tight. If this is not the case, replace the foil (see chapter "7.7" on page 26).
2. You should now establish the power supply by connecting the power supply **3** and the power supply cable **2** to the unit and an available power outlet.
3. Close the opening of the mask, e.g. using your thumb or hand and hold it closed.
4. Push the on/off switch **19** to switch the device on.

On the display, the total hours of operation will be indicated for 3 seconds before the current measured pressure will appear.

5. Press the Softstart button **20**. The display will change.
6. Switch the unit off using the **19** switch.

The display will show the date and the day's length of therapy for a short while. Subsequently only "0" and "A" or "M" will be shown.



5.2.6 Checking proper functionality of the therapy unit

1. Switch on the therapy unit.
2. Close the opening of the mask, e.g. using your thumb or hand and hold it closed.
3. If the mask test is activated on SOMNObalance/SOMNObalance e, switch it off using button **20**. If softstart is switched on, then deactivate this as well, likewise using button **20**.

The radial fan will transport air to the mask through the breathing tube, and the display will show the current pressure in hPa.

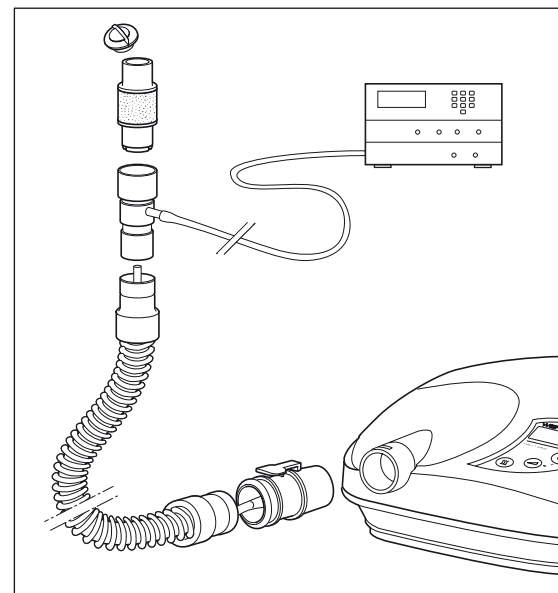
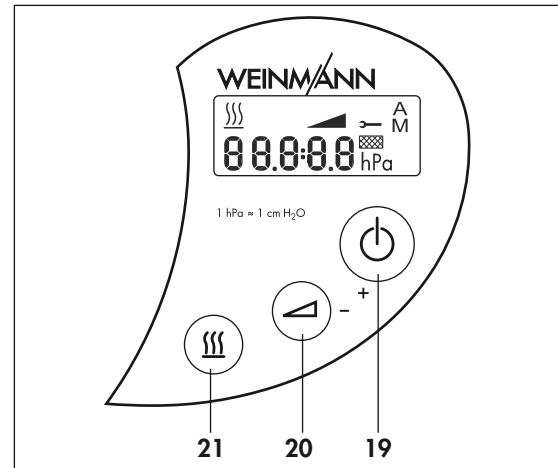
4. Compare the pressure shown on the display with the CPAP pressure prescribed. After approx. 1 minute the maximum allowable pressure deviation is ± 0.2 hPa.
5. Replace the masks with pressure measurement adapter WM 23456 and connect it to an exhalation system, e.g. WM 23685. Seal the top opening with the red plug for drying (WM 23639).
6. Connect the lateral connector to a pressure measurement device.
7. Switch on the therapy device. If softstart is active, switch it off using button **20**.
8. Compare the value displayed by the pressure measurement device with the value in the LC display. After approx. 1 minute the maximum allowable pressure deviation is ± 1 hPa.
9. Press the **20** button to activate softstart. The softstart indicator **15** will appear and the display will show the softstart time. Concurrently, the CPAP pressure will be reduced to the set softstart initial pressure.

The initial softstart pressure can be adjusted. (see chapter "2.3" on page 9).

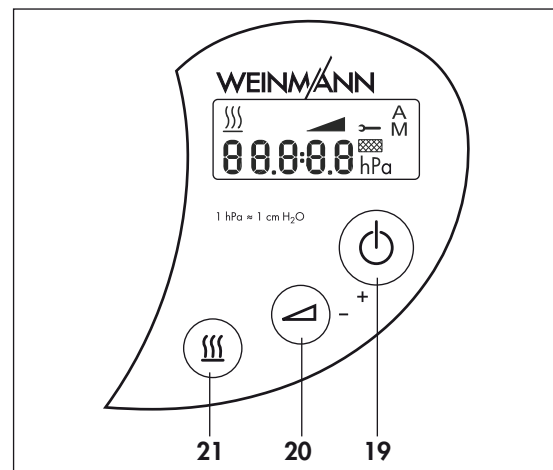
10. The pressure increases slowly and reaches the CPAP pressure after the time selected. The softstart indicator **15** will disappear.

With SOMNObalance/SOMNObalance e, it is the set bottom pressure limit, not the prescribed CPAP pressure, which is reached in APAP mode.


11. Switch the therapy unit off.
12. Press and hold softstart button **20** until the setting option for Automatic on/off (SOMNOcomfort 2/SOMNOcomfort 2e) or the SoftPAP stage (SOMNObalance/SOMNObalance e) appears. On SOMNObalance/SOMNObalance e, press the humidifier button to reach the setting option for Automatic on/off.




13. In order to switch to the "A" setting, push the on/off button **19**.
 - The therapy unit will now switch on automatically when breathing into the mask (pressure > 0,5 hPa),
 - If the mask is removed, the unit should switch off after approx. 15 seconds.
14. Switch the unit off using the button **19**. The display will show the date and the day's length of therapy for a short while. Subsequently only "0" and "A" will be shown.



5.2.7 Checking proper function of the humidifier

1. Check the plastic housing visually: if tears/damage or heavy soiling are found, the plastic parts or gaskets must be replaced.
2. Fill the humidifier up to the mark with water.
3. Check whether the humidifier is leaking.
4. Empty the water.
5. Now pour in about 50 ml of water.
6. Attach the humidifier.
7. Attach the breathing tube to the unit.
8. Switch the therapy unit on.
9. Switch the humidifier on by pressing the humidifier button  on the therapy unit.
10. Set heater level 6 on the therapy unit.
11. Check whether the humidifier is getting warmer.
12. Remove the breathing tube by pressing the adapter's locking button.

6. Troubleshooting

Malfunction	Cause	Rectification
No mechanical sound, ready and operating indicator is off.	No power.	Check connections between the power supply cable and the unit, wall outlet respectively. Check the power source with another device (e.g. lamp) if necessary. If necessary, replace power supply cable.
	Fuse defective.	Replace fuse (Chapter 7.8, Page 27).
	Flat cable connection of the display has slipped from the socket.	Check connection to main circuit board (Chapter 7.6, Page 25).
	Supply connection line 64 loose or defective.	Reattach (Chapter 7.5, Page 24) or replace line (Chapter 7.12, Page 31).
	Main circuit board defective.	Replace main circuit board (Chapter 7.6, Page 25).
	If the powerpack's LED is off: Power supply defective.	Replace powerpack.
No mechanical sound after operating indicator turns on.	Motor is not turning.	Replace main circuit board (Chapter 7.6, Page 25). Replace fan (Chapter 7.11, Page 30).
	Fan connection line loose or defective.	Reattach (Chapter 7.6, Page 25) line or replace fan (Chapter 7.11, Page 30).
Defective or no display.	Display defective.	Replace display (Chapter 7.9, Page 27).
Pressure tolerance of the CPAP is > 1 hPa after 1 minute.	Main circuit board defective.	Replace main circuit board (Chapter 7.6, Page 25).
Unit will not switch on by breathing into the mask while in automatic mode.	Automatic mode switched off.	Activate automatic mode (see 4.1 of the instructions for use).
	Main circuit board defective.	Replace main circuit board (Chapter 7.6, Page 25).
	Using a full-face mask with integrated exhalation system.	Automatic on is not an option with this type of mask (see instructions for use for SOMNObalance/SOMNObalance e, Section 4.4 "Automatic on/off").
Unit is running but does not reach CPAP pressure level selected.	Filter soiled.	Replace both filters (Chapter 3.2, Page 11).
	Mask leaking.	Adjust headgear so that mask is airtight.
	Cover or humidifier not attached/inserted.	Insert/attach humidifier or cover.
	Pressure measurement tube kinked or loose.	Attach the pressure measurement tube and close the unit in a manner avoiding kinks.
Unit does not switch off after approx. 15 seconds once mask is removed.	Automatic switch on/off not activated.	Activate automatic mode (see 4.1 of the instructions for use).
	Using a high-resistance mask (e.g. "nasal pillow" masks).	Automatic off is not an option with this type of mask.
Filter change indicator  on the display.	Filter soiled, end of filter life cycle reached.	Clean/change both filters (Chapter 3.2, Page 11).

Malfunction	Cause	Rectification
Humidifier water will not warm up.	Humidifier defective.	Check using another humidifier, if necessary replace heating rod (see instructions for use SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e).
	Main circuit board defective.	Replace main circuit board (Chapter 7.6, Page 25).
	Humidifier connection line 49 loose or defective.	Reattach (Chapter 7.6, Page 25) or replace line.
Power supply cable defective.		Replace power supply cable.
Err b	Back-up battery weak/depleted.	Replace main circuit board (Chapter 7.6, Page 25).
Err E	EEPROM data erased/damaged.	
Err S	Hardware defective (fuse, motor driver).	
Err c	EEPROM cell containing calibration data erased/defective.	
Err R	Pressure sensor defective.	
Err P	Hardware defective (pressure sensor, motor driver).	
Err h	Hardware defective (humidifier output stage).	
On SOMNObalance/SOMNObalance e		
Err 10	Calibration fault	Replace main circuit board (Chapter 7.6, Page 25).
Err20	EEPROM fault	
Err30	Pressure sensor fault	
Err31	Pressure fault	
Err40	Data fault [flash]	
Err50	Battery fault	
Err60	Speed fault (fan)	Replace main circuit board (Chapter 7.6, Page 25) and/or replace fan (Chapter 7.11, Page 30).
Err 70	Humidifier fault	Replace main circuit board (Chapter 7.6, Page 25).
Err80	RTC fault	

7. Repair information and repair instructions

7.1 General

Please perform repairs on SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e at an ESD workstation!

- **Refer to the safety instructions in the instructions for use for SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e.**
- Any handling of this device requires in-depth knowledge of and adherence to the instructions for use and the servicing and repair instructions.
- Perform repairs described in this servicing and repair instructions only. This is the only way to ensure that SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e work properly.
- Make sure that your hands and your workspace are clean when performing repairs.
- After **every** repair a servicing check must be performed (see "5. Final test" on page 15).
- When replacing components or single parts, use genuine Weinmann replacement parts only.
- When ordering the unit's lower part of the housing **48** you have to state unit type, built and serial number.

Note:
The item numbers stated in the following text are identical with the item numbers of the Replacement parts list on page 33 and the overview on page 4.

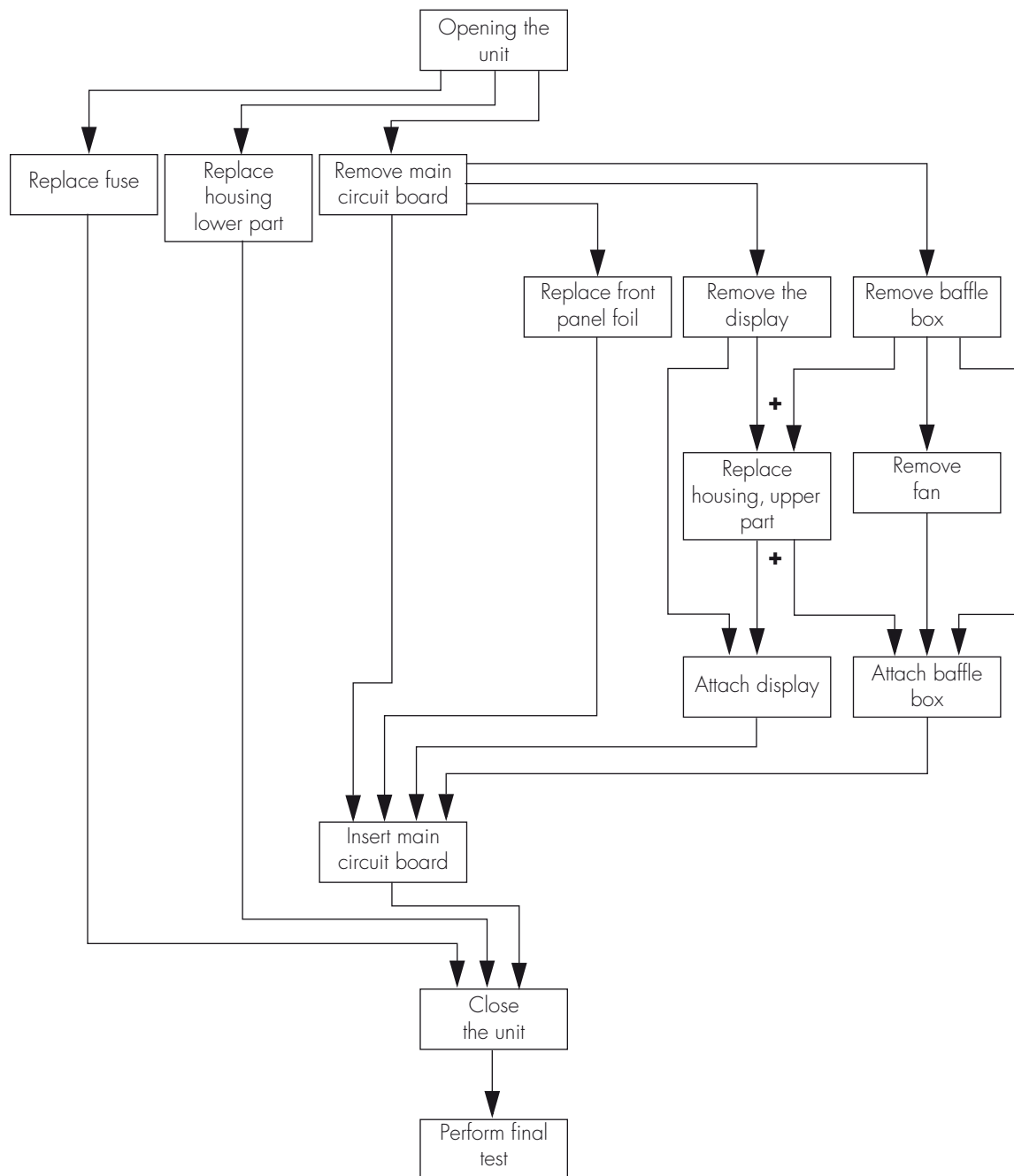
7.2 Tools and facilities

In order to perform the repairs described in this chapter, you will need the following tools and facilities:

- Torx Screwdriver T 20
- Phillips screwdriver PZ 2
- Ball-headed Allen wrench 3 mm
- Knife with a flat smooth blade for removing the front panel foil
- Scissors or scalpel for removing motor mounts
- Nail scissors or ticket-punch to mark the servicing plaque
- ESD Workstation

7.3 Sequence of repairs

The following schematic is intended to help you determine the order of required repair steps.

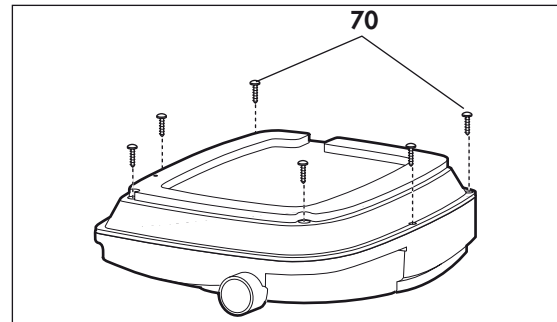


7.4 Opening the unit

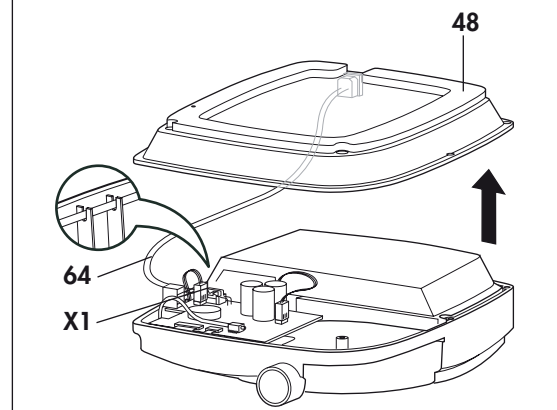
Attention!

Do not open the unit unless the power is disconnected.

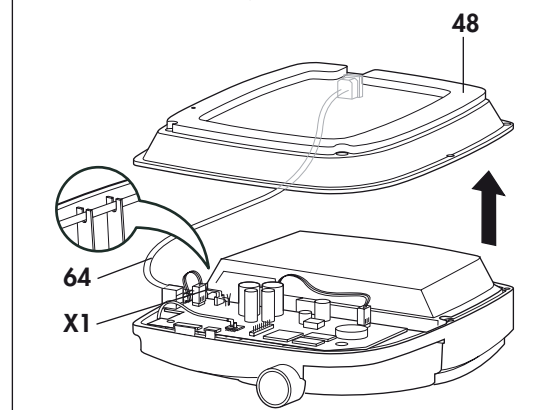
1. Remove the covering cap.
2. Place the unit upside down on a non-slip surface.
3. Remove the six screws **70**.
4. Remove the lower part of the housing **48** with a swivelling motion away to the side.
5. Remove the connector **X1** from the circuit board and pull the connecting cable **64** from its mount.
6. Now you can set aside the lower part of the housing **48**.



SOMNOcomfort 2/SOMNOcomfort 2e



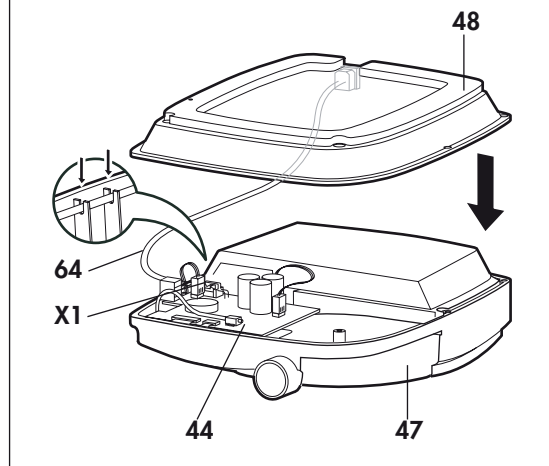
SOMNObalance/SOMNObalance e



7.5 Closing the unit

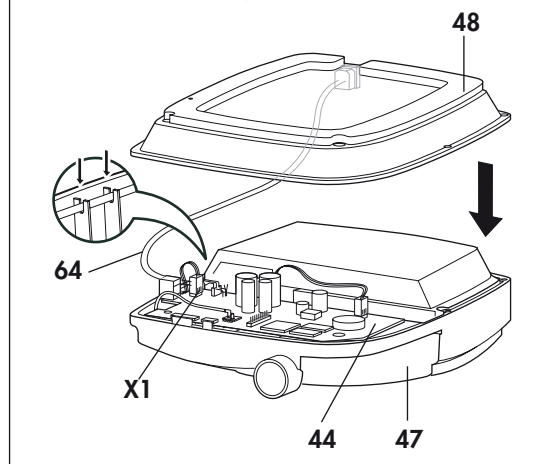
1. Hold the lower part of the housing **48** to the upper part at an angle **47**.
2. Attach connector **X1** to the main circuit board **44**. When doing so the connector's nub has to point towards the lock.
3. Properly align the main circuit board **44** inside the unit.

SOMNOcomfort 2/SOMNOcomfort 2e



4. Attach the connecting cable **64** to its mount.

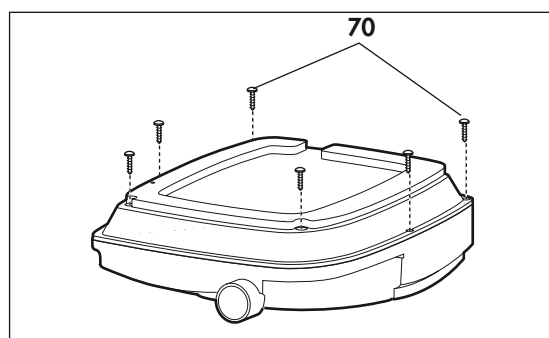
SOMNObalance/SOMNObalance e



5. Place the lower part of the housing **48** on the upper part at **47**.

Please make sure the main circuit board is aligned properly 44 and that the connecting line 64 is not being squeezed in anywhere.

6. Now reattach the upper part of the housing by tightening the six screws **70**.
7. Insert the covering cap.

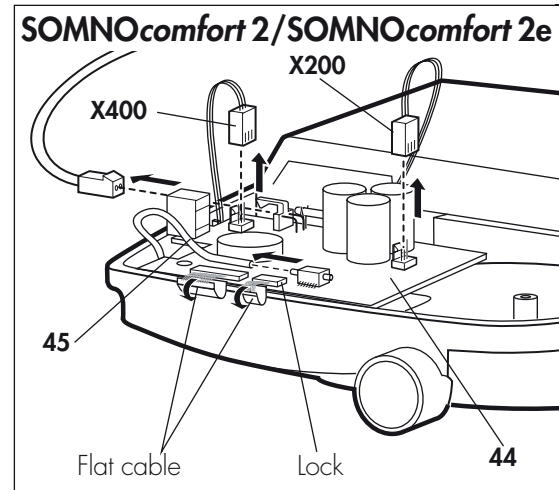


7.6 Replacing the main circuit board

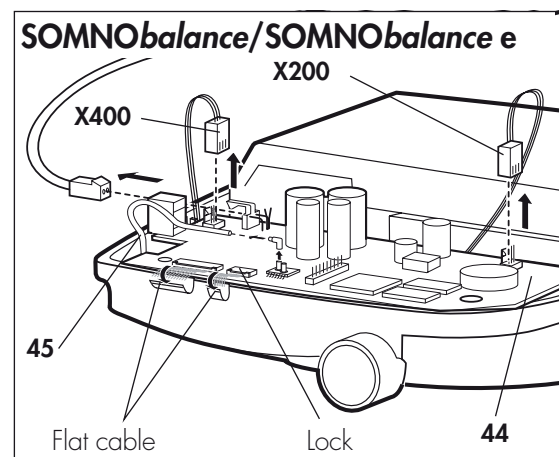
1. Open the unit (chapter 7.4, page 23).

Remove the main circuit board

1. Pull the plug **X200** and **X400** from the main circuit board.

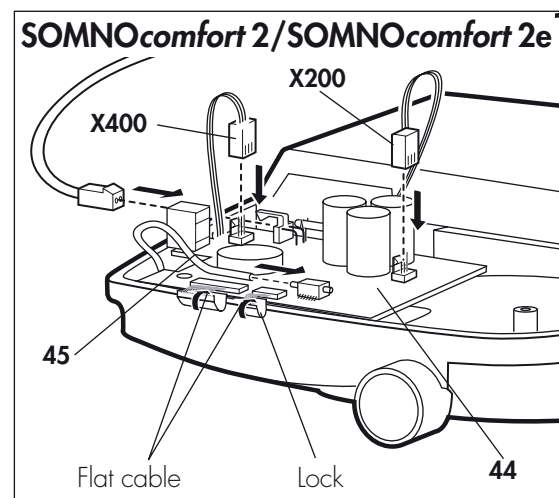


2. Remove the flat cables from front panel foil and display:
To do so, pull the lock. Once you have pulled the lock, you can remove the flat cable.
3. Remove pressure measurement tube **45** from the pressure sensor or pull out the tube adapter of the pressure measurement tube.
4. der Winkeltülle auf dem Drucksensor.
5. Remove the main circuit board **44**.

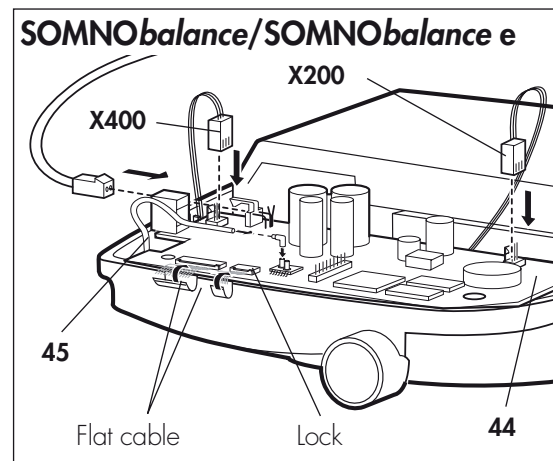


Inserting the main circuit board

1. Attach tube **45** to the pressure sensor of a new main circuit board **44** or connect the tube adapter of the pressure measurement tube to the angular bush on the pressure sensor.
2. Insert the main circuit board.



3. Reattach the flat wires of front panel foil and display to the main circuit board:
 - Pull the lock.
 - Insert the flat cable into the connector.
 - Push the lock back in.
4. Connect plugs **X200** and **X400** to the main circuit board.
5. Close the unit (chapter 7.5, page 24).
6. Check that everything is working properly (chapter 5., page 15).

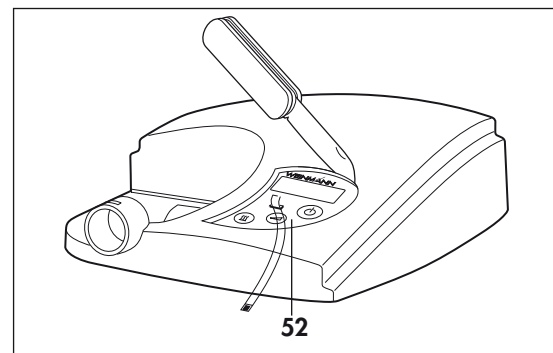


7.7 Replacing the front panel foil

1. Open the unit (chapter 7.4, page 23).
2. Remove the main circuit board (chapter 7.6, page 25, steps **1.** to **5.**).
3. Loosen the front panel foil **52** using a knife and remove it.
4. Degrease this section of the housing using a 70 % Isopropanol solution.
5. Attach a new foil **52** to the housing.

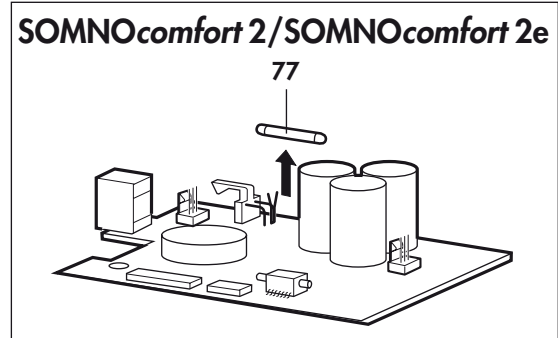
Make sure the flat cable is inserted into the corresponding opening of the housing cleanly without any kinks.

6. Remove the protective foil from the new front panel foil.
7. Insert the main circuit board (chapter 7.6, page 25, steps **1.** to **4.**).
8. Close the unit (chapter 7.5, page 24).
9. Check that everything is working properly (chapter 5., page 15).



7.8 Replacing the fuse

1. Open the unit (chapter 7.4, page 23).

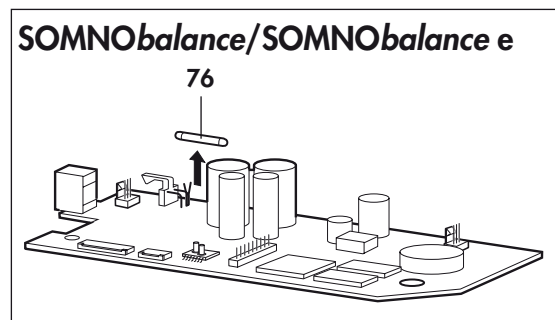


2. Remove the defective fuse and replace with a new one.

Ensure the correct amperage is used.

Use fuses mentioned in the Replacement parts list only. Using other fuses may cause damage to the main circuit board.

3. Close the unit (chapter 7.5, page 24).
4. Check that everything is working properly (chapter 5., page 15).

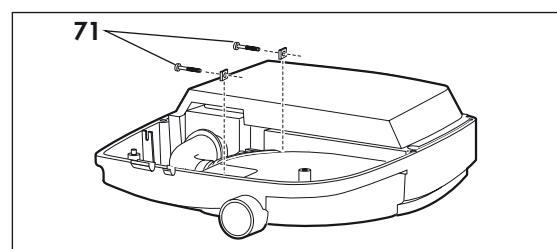


7.9 Replacing the display

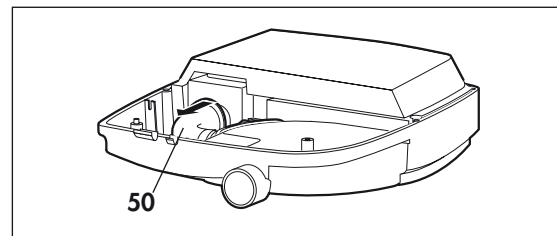
1. Open the unit (chapter 7.4, page 23).
2. Remove the main circuit board (chapter 7.6, page 25, steps 1. to 5.).

Remove the display

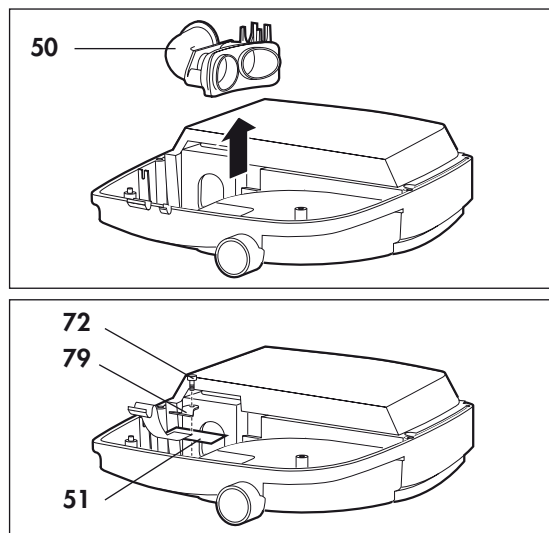
1. Loosen the two screws 71.



2. Remove the decoupling tube 50 from the box.



3. Remove the decoupling tube including the insert.
4. Loosen the screw **72**.
5. Remove the display **51**.



Attaching the display

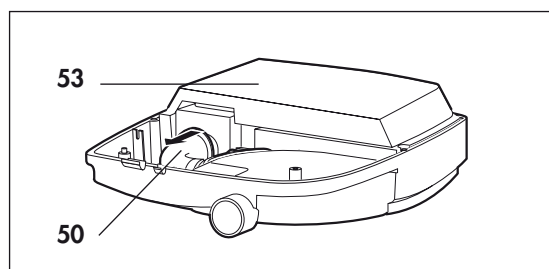
1. Glue new foam **61** to the display **51**.
2. Insert the new display.
3. Tighten the screw **72** using the spring **79**.
4. Attach the decoupling tube.
 - Connect the decoupling tube to the box.
 - Insert the decoupling tube including the insert.
 - Tighten the screw **71** **firmly**, but not too tight.
5. Insert the main circuit board (chapter 7.6, page 25, steps **1.** to **4.**).
6. Close the unit (chapter 7.5, page 24).
7. Check that everything is working properly (chapter 5., page 15).

7.10 Replacing the baffle box

1. Open the unit (chapter 7.4, page 23).
2. Remove the main circuit board ("7.6 Replacing the main circuit board" on page 25, steps **1.** to **5.**).

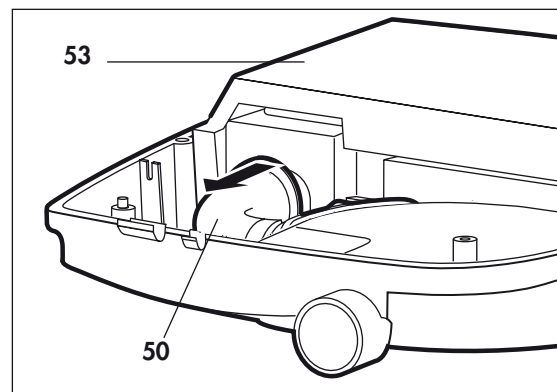
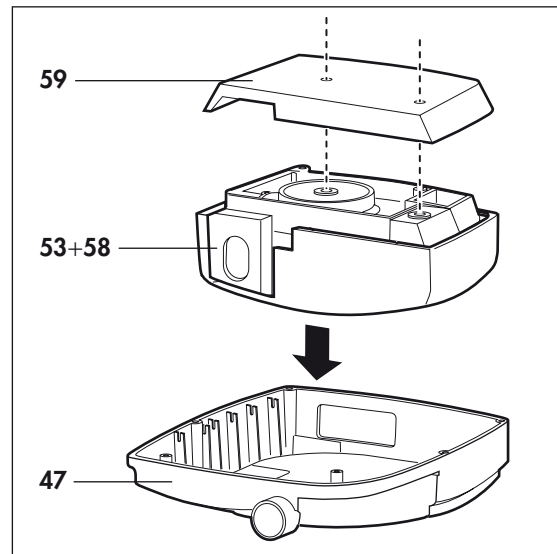
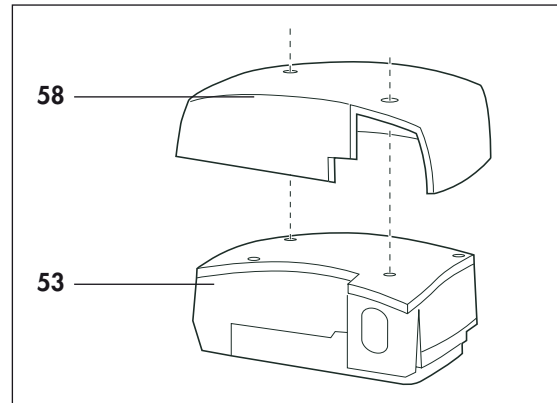
Remove the baffle box

1. Remove the decoupling tube **53** from the box.
2. Remove the box **53** in an upwards motion.



Attaching the baffle box

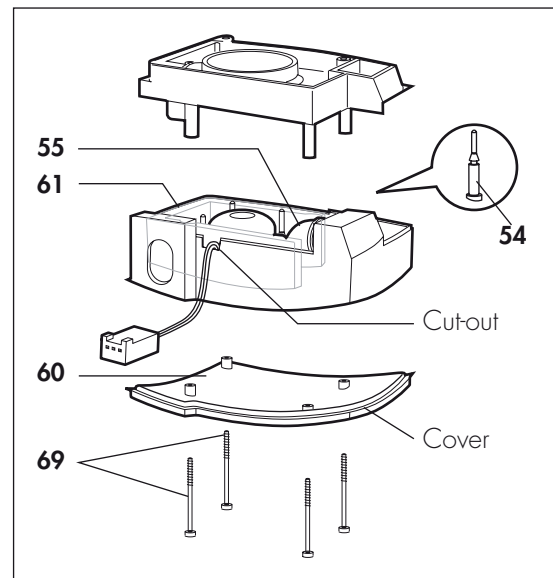
1. Place foam **58** on the box, soft side up. **You must be able to see the screw heads of the box through the holes in the foam.**
2. Insert box and foam into the housing. **Make sure the foam is spread out evenly.**
3. Pull the protective backing off the adhesive tape and stick on foam **59**. Use the crosses as a positioning aid.
4. Apply a small amount of 70 % Isopropanol solution on the decoupling tube's **50** circumference and attach it to the box. The tube's notch must completely lock into the bore hole rim.
5. Insert the main circuit board (chapter 7.6, page 25, steps **1.** to **4.**).
6. Close the unit (chapter 7.5, page 24).
7. Check that everything is working properly (chapter 5., page 15).



7.11 Replacing the fan

Remove the fan

1. Open the unit (see "7.4 Opening the unit" on page 23).
2. Remove the box **53** (see "7.10 Replacing the baffle box" on page 28 steps **1.** to **2.**).
3. Remove the four **69** screws.
4. Remove the box cover and the attached **60** foam part.
5. Pull the two parts of the box apart.
6. Pull the decoupling tube **55** out of the motor frame's bore hole.
7. Loosen the motor mount **54**. Cut the mount using scissors or scalpel.
8. Remove the fan **65**.

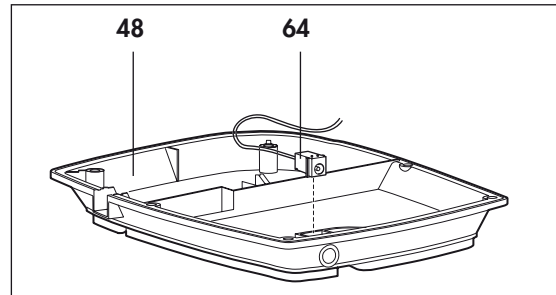


Inserting the fan

1. Place three new motor mounts **54** into the box.
2. Insert the fan **65** into the motor frame and attach it using the motor mounts **54**. Pull the motor mounts through the bore holes of the fan to reach the surrounding notch.
3. Apply a small amount of 70 % Isopropanol solution on the decoupling tube's **55** circumference and attach it to the box. The tube's notch must completely lock into the bore hole rim.
4. Reconnect the two parts of the box. **Pay attention to proper alignment of the foam part 61 and the correct cable lead. The cable must be placed in the appropriate cut-out.**
5. Place the cover on the box and insert the screws.
6. Insert the box (chapter 7.10, page 28 steps **1.** to **4.**).
7. Insert the main circuit board (chapter 7.6, page 25, steps **1.** to **4.**).
8. Close the unit (chapter 7.5, page 24).
9. Check that everything is working properly (chapter 5., page 15).

7.12 Replacing the housing, lower part

1. Open the unit (chapter 7.4, page 23).
2. Loosen the lock and pull the connection plug **64** from the lower part of the housing **48** in an upward motion.
3. Place the connecting line **64** with the plug pointing **downwards** into the socket of the new housing **48**. The plug will lock in.
4. Close the unit (chapter 7.5, page 24).
5. Check that everything is working properly (chapter 5., page 15).

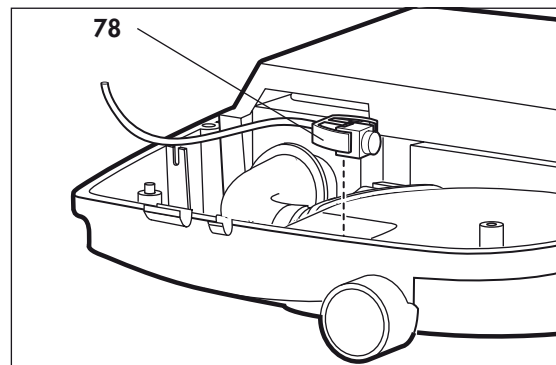


7.13 Replacing the housing, upper part

1. Open the unit (chapter 7.4, page 23).
2. Remove the main circuit board (chapter 7.6, page 25, steps **1.** to **5.**).
3. Remove the display (chapter 7.9, page 27, steps **1.** to **5.**).
4. Disassemble the adapter pressure gland **78**.
5. Remove the box **53** (chapter 7.10, page 28, steps **1.** to **2.**).

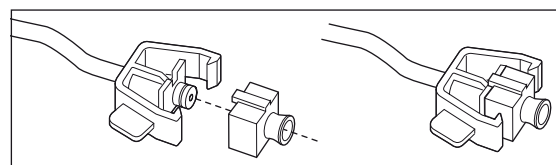
You have now removed all of the parts. Now begin to reassemble them back into the new upper part of the housing **47**.

6. Attach front panel foil **52** to the housing.
Make sure the flat cable will be inserted into the according opening of the housing cleanly without any kinks.



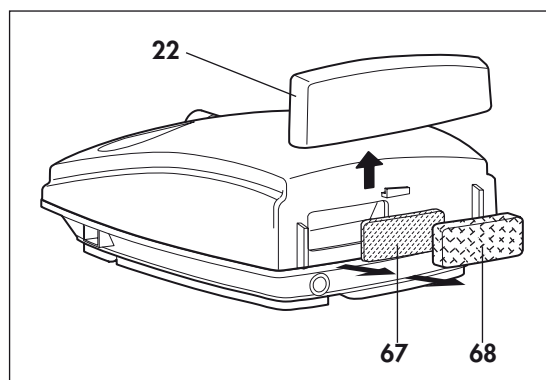
7. Remove the protective foil from the new front panel foil.
8. Insert the box **53** (chapter 7.10, page 28, steps **1.** to **4.**).
9. Attach the adapter pressure gland **78**.

The nub of the silicone part must be inserted into the appropriate cut-out of the plastic part (see illustration).



10. Insert the display (chapter 7.9, page 27, steps **2.** to **4.**).
11. Insert the main circuit board (chapter 7.6, page 25, steps **1.** to **4.**).
12. Close the unit (chapter 7.5, page 24).

13. Insert a **new** fine dust filter **67** followed by a coarse dust filter **68**.
14. Reattach the filter compartment cover **22**.
15. Check that everything is working properly (chapter 5., page 15).



8. Replacement parts

8.1 Replacement parts list

Note:

The item numbers of the following table are identical to the numbers used in the body text of this servicing and repair instructions.

Item-No.	Name	Ordering-No.
2	Power supply cable	WM 24133
3	Power supply	WM 24480
5	Cover, white	WM 24424
	Cover, dark-grey	WM 24489
8	Adapter, installed white	WM 24452
	Adapter, installed dark-grey	WM 24493
9	Breathing tube	WM 24445
22	Filter compartment cover, white	WM 24428
	Filter compartment cover, dark-grey	WM 24470
23	Bag	WM 24449
24	DC adapter	WM 24469
28	Set of 2 coarse dust filters	WM 15321
29	Set of 12 fine filters	WM 15668
30	Servicing set, white	WM 15687
31	Servicing set, dark-grey	WM 15688
32	Instructions for use SOMNOcomfort 2/SOMNOaqua DE	WM 16892
33	Instructions for use SOMNObalance/SOMNOaqua DE	WM 66200
34	Instructions for use SOMNOcomfort 2/SOMNOaqua FR, IT	WM 16893
35	Instructions for use SOMNObalance/SOMNOaqua FR, IT	WM 66202
36	Instructions for use SOMNOcomfort 2e/SOMNOaqua DE	WM 16894
37	Instructions for use SOMNObalance e/SOMNOaqua DE	WM 66205
38	Instructions for use SOMNOcomfort 2e/SOMNOaqua FR, NL, IT	WM 16895
39	Instructions for use SOMNObalance e/SOMNOaqua FR, NL, IT	WM 66207
40	Instructions for use SOMNOcomfort 2e/SOMNOaqua GB	WM 16896
41	Instructions for use SOMNObalance e/SOMNOaqua GB	WM 66206
42	Setup instructions for SOMNOcomfort 2/2e DE, GB, FR	WM 16980
43	Setup instructions for SOMNObalance/e DE, GB, FR	WM 66215

Item-No.	Name	Ordering-No.
44	Main circuit board <i>SOMNOcomfort 2</i>	WM 24430
	Main circuit board <i>SOMNOcomfort 2e</i>	WM 23530
	Main circuit board <i>SOMNObalance</i>	WM 27490
	Main circuit board <i>SOMNObalance AT</i>	WM 27488
	Main circuit board <i>SOMNObalance e</i>	WM 27480
	Main circuit board <i>SOMNObalance e AT</i>	WM 27489
	Foam, circuit board	WM 27418
45	Pressure measurement tube (0.14 m)	WM 23955
46	Fine dust filter, packaged	WM 24401
47	Housing, upper part, white	WM 24416
	Housing, upper part, dark-grey	WM 24482
48	Housing, lower part, with nameplate *	WM 24595
49	Humidifier connection line	WM 24419
50	Decoupling tube, outside	WM 24429
51	Display	WM 24437
52	Front foil <i>SOMNOcomfort 2</i>	WM 24438
	Front foil <i>SOMNOcomfort 2e</i>	WM 24484
	Front foil <i>SOMNObalance</i>	WM 27408
	Front foil <i>SOMNObalance e</i>	WM 27428
53	Baffle box, installed	WM 24439
54	Motor mount	WM 24444
55	Decoupling tube, inside	WM 24446
56	Pressure gland	WM 24447
57	Cleaning plug, packaged	WM 24451
58	Foam, housing, upper part	WM 24453
59	Foam, lower part	WM 24454
60	Foam, cover	WM 24457
61	Foam, small	WM 24466
62	Baffling foil (course foil), below unit	WM 24471
63	Unit mount (foam mount)	WM 24472
64	Connecting cable, power supply	WM 24473
65	Fan	WM 24474
66	Gasket, fan housing	WM 24475
67	Fine filter	WM 24478
68	Coarse dust filter	WM 24481
69	Screw Ejot PT K 40x70 WN 1412	WM 50557
70	Screw Ejot PT K 40x14 WN 1412	WM 50558
71	Screw DIN 912 M4x30	WM 50559
72	Screw Ejot PT K 40x8 WN 1412	WM 50561
73	Square nut DIN 562 M4 Ms-Ni	WM 50568
74	Gasket, unit outlet	WM 1145/156

* When placing an order please make sure to include type, unit serial no. and year built.

Item-No.	Name	Ordering-No.
75	Breathing tube with adapter, white	WM 24396
	Breathing tube with adapter, dark-grey	WM 24397
76	Set of 10 breathing tubes	WM 15689
77	Fuse	WM 13422
78	Adapter, pressure gland	WM 24448
79	Spring for display	WM 24402

8.2 Replacement parts required for servicing

Servicing set 10,000 operating hours or 4 years

Set WM 15687

(for *SOMNOcomfort 2/SOMNOcomfort 2e/SOMNObalance/SOMNObalance e*, white)

Consisting of:

- 1 Coarse dust filter
- 1 Fine filter
- 1 Baffle box, installed
- 1 Gasket, fan housing
- 1 Foam, lower part
- 1 Decoupling tube, outside
- 1 Cover cap
- 1 Adapter, installed
- 1 Label, recycling

Set WM 15688

(for *SOMNOcomfort 2/SOMNObalance*, dark-grey)

Consisting of:

- 1 Coarse dust filter
- 1 Fine filter
- 1 Baffle box, installed
- 1 Gasket, fan housing
- 1 Foam, lower part
- 1 Decoupling tube, outside
- 1 Cover cap
- 1 Adapter, installed
- 1 Label, recycling

9. Tools, testing equipment and disinfectants

The following is a list of all tools and testing equipment mentioned in this servicing and repair instructions.

9.1 Tools

- Torx Screwdriver T 20
- Phillips screwdriver PZ 2
- Ball-headed Allen wrench 3 mm
- Knife with a flat smooth blade for removing the front panel foil
- Scissors or scalpel for removing motor mounts
- Nail scissors or ticket-punch to mark the servicing plaque
- ESD Workstation

9.2 Testing equipment

- Mobile pressure measuring device, accuracy $\pm 0.1\%$
e.g. type GMH 3110
with pressure sensor **0-25 hPa**
Type GMSD 25 MR
Can be ordered from:
Greisinger electronic GmbH
Hans-Sachs-Str. 26
D-93128 Regenstauf / Germany
Tel.: +49 9402-8500, Fax: -1829;
- Remote control SOMNO*adjust*,
for adjusting the pressure
To be ordered from: WM 23930
of the manufacturer Weinmann.
- Remote cable 2 m
required to adjust pressure
To be ordered from: WM 23772
of the manufacturer Weinmann.
- Pressure measurement adapter WM 23456
- Noise insulation WM 23685
- Plug for drying WM 23639
- SOMNO*support*
- ESD Workstation

9.3 Disinfectant

- TERRALIN
Can be ordered from:
Schülke & Mayr GmbH
Robert-Koch-Str. 2
D-22851 Norderstedt / Germany
Tel.: +49 40 52 100 - 0
Fax: +49 40 52 100 - 318
Internet: www.schuelkemayr.de

10. Technical data

10.1 Specifications for SOMNOcomfort

	SOMNOcomfort 2	SOMNOcomfort 2e	SOMNOcomfort 2 with SOMNOaqua	SOMNOcomfort 2e with SOMNOaqua
Product category according to 93/42/EEC	IIa			
Dimensions WxHxD in cm	21 x 9 x 27		21 x 14 x 27	
Weight	approx. 1.7 kg		approx. 1.9 kg (without water)	
Temperature range – operation – storage	+5 °C to +35 °C –40 °C to +70 °C If the unit runs at +40 °C , the air output can heat up to 42 °C .			
Adm. humidity for operation and storage	≤ 95 % rF (no condensation)			
Air pressure range	600 - 1100 hPa (allows operation at altitudes of up to 4000 m)			
Diameter of breathing tube connection (mask) in mm	19.5 (suitable for 22 mm standard cone)			
Electrical connection	100-240 V AC +10/-15 %, 50–60 Hz with WM 24480 power supply or 12-24 V DC +25/-15 % with WM 24469 DC adapter			
Power consumption during – operation – standby	230 V 0.1 A 0.02 A	115 V 0.2 A 0.03 A	24 V 0.9 A 0.02 A	12 V 1.8 A 0.24 A
Classification as per prEN 60601-1:2004 – type of protection from electric shock – level of protection from electric shock – protection against damaging ingress of water – operating mode	Protection class II Type B IPX1 Constant operation			
Electromagnetic compatibility (EMC) as per EN 60601-1-2 – radio interference suppression – radio shielding	Test parameters and limit values can be obtained from the manufacturer if required. EN 55011 B EN 61000-4 parts 2 to 6, part 11			
Mean sound pressure level/operation at distance of 1m from unit in patient position	approx. 27 dB (A) at 10 hPa (corresponds to an acoustic power level of 35 dB (A))			
CPAP operating pressure range	4 to 18 hPa	4 to 20 hPa	4 to 18 hPa	4 to 20 hPa
pressure accuracy	±1 hPa (1mbar = 1 hPa ≈ 1cm H ₂ O)	±1 hPa (1mbar = 1 hPa ≈ 1cm H ₂ O)	±1 hPa (1mbar = 1 hPa ≈ 1cm H ₂ O)	±1 hPa (1mbar = 1 hPa ≈ 1cm H ₂ O)
Flow at max. speed at: 18 hPa 14 hPa 12 hPa 9 hPa 6 hPa 5 hPa 4 hPa 0 hPa Tolerance	120 l/min 130 l/min 140 l/min 150 l/min 155 l/min 160 l/min 175 l/min 175 l/min ±15 l/min		120 l/min 130 l/min 140 l/min 150 l/min 155 l/min 160 l/min 175 l/min 175 l/min ±15 l/min	
Flow at max. speed at: 20 hPa 15 hPa 10 hPa 5 hPa 0 hPa Tolerance		115 l/min 125 l/min 145 l/min 160 l/min 175 l/min ±15 l/min		115 l/min 125 l/min 145 l/min 160 l/min 175 l/min ±15 l/min
Heating of respiratory air	2.5 °C		depending on heating level	

	SOMNOcomfort 2	SOMNOcomfort 2e	SOMNOcomfort 2 with SOMNOaqua	SOMNOcomfort 2e with SOMNOaqua
Short-term constant pressure level measured as per prEN ISO 17510:2004 at: 18 hPa 14 hPa 9 hPa 5 hPa 4 hPa Long-term constant pressure level prEN 17510-1:2004	$\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$		$\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$	
Short-term constant pressure level measured as per prEN ISO 17510:2004 at: 20 hPa 15 hPa 10 hPa 5 hPa Long-term constant pressure level prEN 17510-1:2004:		$\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$		$\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$
Finefilter separation level to 1 μm to 0.3 μm	$\geq 99,5 \%$ $\geq 85 \%$			
Fine filter service life	≤ 250 hours with normal room air			



Subject to design modifications.

	SOMNOaqua
Product class as per 93/42/EEC	II a
Dimensions WxHxD in mm	140 x 100 x 121
Weight (without water)	300 g
Temperature range – operation – storage	+5 °C to +35 °C –40 °C to +70 °C
Humid operation and storage	$\leq 95 \%$ relative humidity
Ambient pressure range	600 to 1100 hPa
Electrical connection	24 V DC
Power consumption	15 VA
Classification as per EN 60601-1 – level of protection from electric shock	type B
Max. permitted capacity	300 ml
Max. permitted operating pressure	20 hPa
Max. permitted flow (free-flowing)	200 l/min
Max. mask temperature	37 °C
Gas leakage – at 20 hPa (SOMNOcomfort 2e) – at 18 hPa (SOMNOcomfort 2)	negligible
Humidifier output at heating level 6: Flowrate = 20 l/min Flowrate = 30 l/min Flowrate = 40 l/min at 23 °C and 65 % relative humidity	6.3 mg/l 6.8 mg/l 9.0 mg/l



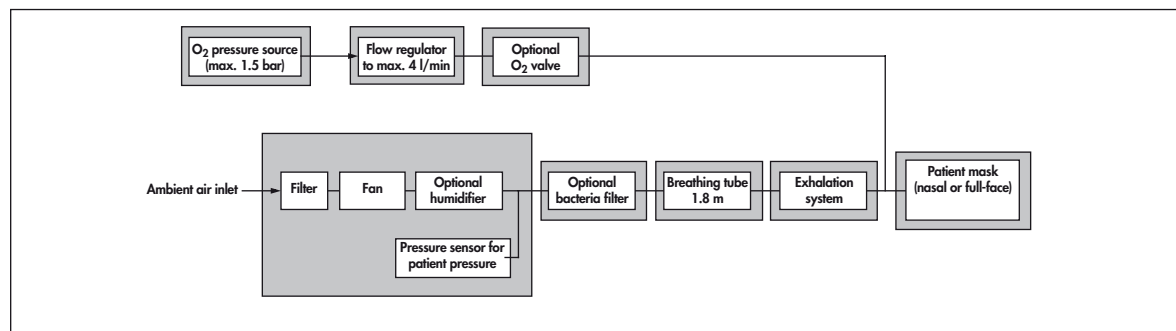
Subject to design modifications.

10.2 Specifications for SOMNObalance

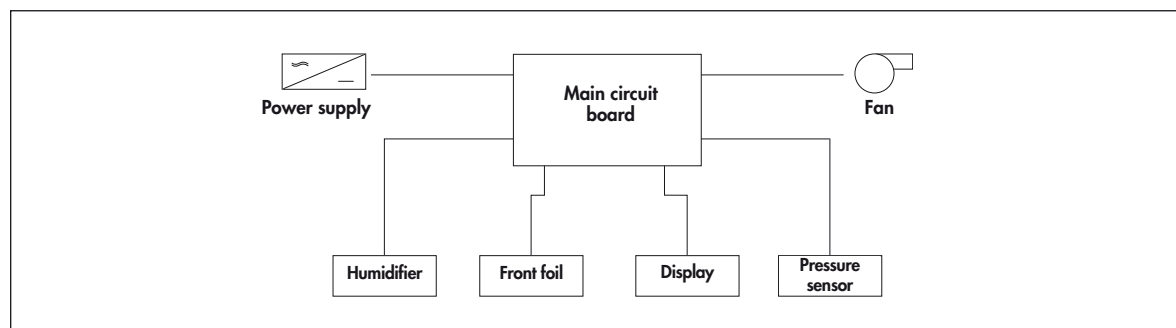
	SOMNObalance	SOMNObalance e	SOMNObalance with SOMNOaqua	SOMNObalance e with SOMNOaqua
Product category according to 93/42/EEC	IIa			
Dimensions WxHxD in cm	21 x 9 x 27		21 x 14 x 27	
Weight	approx. 1.7 kg		approx. 1.9 kg (without water)	
Temperature range – operation – storage	+5 °C to +35 °C –40 °C to +70 °C If the unit runs at +40 °C , the air output can heat up to 42 °C.			
Adm. humidity for operation and storage	≤ 95 % rF (no condensation)			
Air pressure range	600 - 1100 hPa (allows operation at altitudes of up to 4000 m) automatic altitude compensation			
Diameter of breathing tube connection (mask) in mm	19.5 (suitable for 22 mm standard cone)			
Electrical connection	115-230 V AC +10/-15 %, 50–60 Hz with WM 24480power supply or 12-24 V DC +25/-15 % with WM 24469 DC adapter			
Power consumption during – operation – standby	230 V 0,1 A 0,02 A	115 V 0,2 A 0,04 A	24 V 0,9 A 0,2 A	12 V 1,8 A 0,4 A
Classification as per prEN 60601-1:2004 – type of protection from electric shock – level of protection from electric shock – protection against damaging ingress of water – operating mode	Protection class II Type B IPX1 Constant operation			
Electromagnetic compatibility (EMC) as per EN 60601-1-2 – radio interference suppression – radio shielding	Test parameters and limit values can be obtained from the manufacturer if required. EN 55011 B EN 61000-4 parts 2 to 6, part 11			
Mean sound pressure level/operation at distance of 1 m from unit in patient position	approx. 27 dB (A) at 10 hPa (corresponds to an acoustic power level of 35 dB (A))			
CPAP operating pressure range	4 to 18 hPa	4 to 20 hPa	4 to 18 hPa	4 to 20 hPa
pressure accuracy	±1 hPa (1 mbar = 1 hPa ≈ 1 cm H ₂ O)	±1 hPa (1 mbar = 1 hPa ≈ 1 cm H ₂ O)	±1 hPa (1 mbar = 1 hPa ≈ 1 cm H ₂ O)	±1 hPa (1 mbar = 1 hPa ≈ 1 cm H ₂ O)
Max. CPAP pressure with malfunction	< 40 hPa			
Flow at max. speed at: 18 hPa 14 hPa 12 hPa 9 hPa 6 hPa 5 hPa 4 hPa 0 hPa Tolerance	120 l/min 130 l/min 140 l/min 150 l/min 155 l/min 160 l/min 165 l/min 175 l/min ±15 l/min		120 l/min 130 l/min 140 l/min 150 l/min 155 l/min 160 l/min 165 l/min 175 l/min ±15 l/min	
Flow at max. speed at: 20 hPa 15 hPa 10 hPa 5 hPa 0 hPa Tolerance		115 l/min 130 l/min 145 l/min 165 l/min 175 l/min ±15 l/min		110 l/min 125 l/min 145 l/min 160 l/min 170 l/min ±15 l/min

	SOMNObalance	SOMNObalance e	SOMNObalance with SOMNOaqua	SOMNObalance e with SOMNOaqua
Heating of respiratory air	2,5 °C	2,5 °C	depending on heating level	
Short-term constant pressure level measured as per prEN ISO 17510:2005 at: 18 hPa 14 hPa 9 hPa 5 hPa 4 hPa Long-term constant pressure level prEN 17510-1:2005	$\Delta p = 0,7 \text{ hPa}$ $\Delta p = 0,6 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$		$\Delta p = 0,7 \text{ hPa}$ $\Delta p = 0,6 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$	
Short-term constant pressure level measured as per prEN ISO 17510:2005 at: 20 hPa 15 hPa 10 hPa 5 hPa Long-term constant pressure level prEN 17510-1:2005		$\Delta p = 0,7 \text{ hPa}$ $\Delta p = 0,6 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$		$\Delta p = 0,7 \text{ hPa}$ $\Delta p = 0,6 \text{ hPa}$ $\Delta p = 0,5 \text{ hPa}$ $\Delta p = 0,4 \text{ hPa}$ $\Delta p = 0,1 \text{ hPa}$
Finefilter separation level to 1 μm to 0.3 μm	$\geq 99.5 \%$ $\geq 85 \%$			
Fine filter service life	≤ 250 hours with normal room air			

10.3 Pneumatic diagram



10.4 Electrical block diagram



10.5 Safety distances for SOMNOcomfort 2 and SOMNOcomfort 2e

Recommended safety distances between portable and mobile HF telecommunications equipment (e.g. mobile phones) and SOMNOcomfort 2/SOMNOcomfort 2e or SOMNOaqua			
Nominal output of HF equipment in W	Safety distance dependent on transmission frequency in m		
	150 kHz - 80 MHz	80 MHz - 800 MHz	800 MHz – 2.5 GHz
0.01	0.1	0.04	0.07
0.1	0.37	0.11	0.22
1	1.2	0.35	0.70
10	3.7	1.11	2.21
100	11.7	3.5	7.0

10.6 Safety distances for SOMNObalance and SOMNObalance e

Recommended safety distances between portable and mobile HF telecommunications equipment (e.g. mobile phones) and SOMNObalance/SOMNObalance e or SOMNOaqua			
Nominal output of HF equipment in W	Safety distance dependent on transmission frequency in m		
	150 kHz - 80 MHz	80 MHz - 800 MHz	800 MHz – 2.5 GHz
0,01	0,04	0,04	0,08
0,1	0,11	0,11	0,22
1	0,35	0,35	0,70
10	1,10	1,11	2,20
100	3,50	3,50	7,00

Additional technical specifications available from manufacturer WEINMANN upon request.

Subject to design modifications.

11. Service record

Manufacturer:	Weinmann	Serial number	_____
Unit type:	<input type="checkbox"/> SOMNOcomfort 2 <input type="checkbox"/> SOMNOcomfort 2e <input type="checkbox"/> SOMNObalance <input type="checkbox"/> SOMNObalance e	Commission date	_____
		Total operating hours	_____
		Operator	_____

Parameters set before servicing:

Pressure	_____ hPa	Softstart time	_____
Softstart initial pressure	_____ hPa	Humidity level	_____

Servicing check/Final test

Test step	Perform according to	Ok?
<input type="checkbox"/> Power supply cable	Chapter 5.2.2, Page 15	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> Power supply	Chapter 5.2.3, Page 16	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> Housing	Chapter 5.2.4, Page 16	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> Control panel and display	Chapter 5.2.5, Page 16	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> Functionality Measured pressure, comparison Target _____ hPa Actual _____ hPa	Chapter 5.2.6, Page 17	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> Functionality, humidifier	Chapter 5.2.7, Page 18	<input type="checkbox"/> yes <input type="checkbox"/> no

Servicing/repair

Measure taken	Perform according to	done
<input type="checkbox"/> Servicing every 2 years or 5000 operating hours (SOMNOcomfort 2 only)	Chapter 3., Page 10	<input type="checkbox"/>
<input type="checkbox"/> Servicing every 4 years or 10,000 operating hours / change of patient	Chapter 3., Page 10	<input type="checkbox"/>
<input type="checkbox"/> Replace main circuit board	Chapter 7.6, Page 25	<input type="checkbox"/>
<input type="checkbox"/> Replace front panel foil	Chapter 7.7, Page 26	<input type="checkbox"/>
<input type="checkbox"/> Replace fuse	Chapter 7.8, Page 27	<input type="checkbox"/>
<input type="checkbox"/> Replace display	Chapter 7.9, Page 27	<input type="checkbox"/>
<input type="checkbox"/> Replace baffle box	Chapter 7.10, Page 28	<input type="checkbox"/>
<input type="checkbox"/> Replace fan	Chapter 7.11, Page 30	<input type="checkbox"/>
<input type="checkbox"/> Replace housing, lower part	Chapter 7.12, Page 31	<input type="checkbox"/>
<input type="checkbox"/> Replace housing, upper part	Chapter 7.13, Page 31	<input type="checkbox"/>
<input type="checkbox"/> Perform final test	Chapter 5., Page 15	<input type="checkbox"/>

Cleaning, disinfection, sterilisation

Measure taken	see also	done
<input type="checkbox"/> Cleaning and disinfecting during repairs	Chapter 4.2, Page 13	<input type="checkbox"/>
<input type="checkbox"/> Cleaning and disinfecting: new patient	Chapter 4.3, Page 13	<input type="checkbox"/>
<input type="checkbox"/> Cleaning and disinfecting the humidifier: new patient	Chapter 4.5, Page 14	<input type="checkbox"/>

Notes:

Service performed according to servicing and repair instructions SOMNOcomfort 2/
SOMNOcomfort 2e/SOMNObalance/SOMNObalance e (WM 16988):

Company:

Date:

Signature:

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