The REMstar LX CPAP Systems are intended for the treatment of adult Obstructive Sleep Apnea only.

This instruction sheet has been created for the home care provider to assist in setting up the REMstar LX Systems.

System Contents

- REMstar LX or REMstar Plus LX CPAP Device
- Pollen Filters
- User Manual
- Optional Ultra-Fine Filter
- Power Cord

Electrical Requirements

100-120 VAC / 230-240 VAC, 50/60 Hz, 1.0 A max.
12 VDC, 3 A DC max.
Type of protection against electric shock: Class II Equipment
Degree of protection against electric shock: Type BF Applied Part
Degree of protection against harmful ingress of water: Ordinary Equipment (IPXO)
Mode of Operation: Continuous
Device Fuses:

Line Voltage | Fuse Type
-------------|----------------
115 VAC (100-120VAC) | T 800 mA, 250 V, 5 x 20 mm
230 VAC (230-240VAC) | T 315 mA, 250 V, 5 x 20 mm
DC Cord Fuse (not included): 3 A, Time Delay, Type MDL

EMC Interference: Meets CISPR II, Class B Emissions Requirements

Note: REMstar Plus LX devices are equipped with a time meter; REMstar LX devices are not. Some REMstar LX Systems may also include one or more of the following accessories: headgear, 6 ft. (1.83 m) flexible tubing, exhalation port, nasal mask, humidifier, carrying case.

Contraindications

Studies have shown that the following pre-existing conditions may contraindicate the use of CPAP therapy for some patients:

- Bullous Lung Disease
- Pneumothorax
- Pneumocephalus
- Pathologically Low Blood Pressure
- Pneumocephalus has been reported in a patient using nasal Continuous Positive Airway Pressure. Caution should be used when prescribing CPAP for susceptible patients such as those with: cerebral spinal fluid (CSF) leaks, abnormalities of the cribriform plate, prior history of head trauma, and/or pneumocephalus. (Chest 1989, 96:1425-1426)

The use of CPAP therapy may be temporarily contraindicated if a patient exhibits signs of a sinus or middle ear infection. Should your patient have any of these conditions, a physician will determine if CPAP therapy is appropriate.
WARNINGS & CAUTIONS

WARNING!
Indicates the possibility for injury to the user or the operator.

- This device is intended for adult use only.
- This device is not intended for life support.
- Most CPAP devices have the potential to induce rebreathing of exhaled air.
  To reduce this potential, observe the following:
  - Use only Respironics circuit accessories.
  - Do not wear the mask and headgear for more than a few minutes while the unit is not operating.
  - Do not block or try to seal the vent holes in the exhalation port.

As with most CPAP devices, at low CPAP pressures, some exhaled gas (CO₂) may remain in the mask and be rebreathed.

- Under certain conditions, the temperature of the air flow from this device can be as much as 18° F (10° C)
  higher than the air temperature in the room. Caution should be exercised if the room temperature is warmer
  than 90° F (32° C).

- This equipment is not suitable for use in the presence of a flammable anesthetic mixture in combination with oxygen or air.

- This equipment is not suitable for use in the presence of nitrous oxide.

- To avoid electrical shock, disconnect the power cord before cleaning.
  Do not immerse the REMstar LX into any fluids.

- To avoid electrical shock, disconnect the electrical supply before changing the fuses. For continued
  protection against risk of fire, replace fuses with those of the same type and rating only.

CAUTION!
Indicates the possibility of damage to the device.

- U.S. federal law restricts this device to sale by or on the order of a physician.
- Should the noise level of the REMstar LX change to include unusual or harsh sounds during operation,
  discontinue use and contact Respironics.
- Discontinue using the REMstar LX if any of the parts are damaged. Replace any damaged
  parts before continuing use.
- Tobacco smoke may cause tar build-up that may result in the REMstar LX malfunctioning.

System Features

![Diagram of REMstar LX Features]

- DC Power Connector
- Time Meter
- Signal Light
- Pressure & Elevation Display
- Ramp Button
- Pressure On/Off Button
- Air Outlet
- AC Power Connector
- Filter Cap
- AC Voltage Selector
To use the REMstar LX System, the following accessories are required in order to assemble the circuit.

**WARNING!**
The REMstar LX CPAP System should only be used with the recommended patient circuit identified below.

**Recommended Patient Circuit**
- Resperionics Nasal Mask & Whisper Swivel® II Exhalation Port
  (or Resperionics mask w/integrated exhalation port such as Monarch® Mini Mask)
- Resperionics 6 ft. (1.83 m) Flexible Tubing (reusable or lightweight)
- Resperionics Headgear or Softcap™ (not shown)

**Alternate & Optional Circuit Accessories**
The Resperionics alternate accessories listed below can be used in place of the recommended accessories. The optional accessories can be added to the patient circuit. Refer to the table below for changes in the pressure/flow characteristics when using these accessories.

<table>
<thead>
<tr>
<th>Pressure/Flow Characteristics</th>
<th>Patient Circuit Accessory</th>
<th>Pressure Drop @ 30 lpm (cm H₂O)</th>
<th>Pressure Drop @ 60 lpm (cm H₂O)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended Patient Circuit</strong></td>
<td>Nasal Mask (disposable or reusable)</td>
<td>0.03</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>GoldSeal™ Nasal Mask</td>
<td>0.03</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Monarch® Mini Mask</td>
<td>0.20</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>Whisper Swivel or Whisper Swivel II (reusable)</td>
<td>0.02</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>6 ft. (1.83 m) Reusable Flexible Tubing</td>
<td>0.11</td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Alternate Accessories</strong></td>
<td>Spectrum® Disposable Full Face Mask</td>
<td>0.04</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Spectrum® Reusable Full Face Mask</td>
<td>0.04</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Plateau™ Exhalation Valve (reusable)</td>
<td>0.05</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>6 ft. (1.83 m) Disposable Circuit &amp; Exhalation Port</td>
<td>0.20</td>
<td>0.34</td>
</tr>
<tr>
<td><strong>Optional Accessories</strong></td>
<td>Resperionics Pass-over Humidifier</td>
<td>0.00</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>Fisher &amp; Paykel Heated Humidifier</td>
<td>0.13</td>
<td>0.53</td>
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<tr>
<td></td>
<td>Resperionics Oasis™ Humidifier</td>
<td>0.14</td>
<td>0.40</td>
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<td></td>
<td>24 inch Reusable Tubing (used with humidifier)</td>
<td>0.03</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>18 inch Disposable Tubing (used with humidifier)</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>18 inchReusable Tubing (used with humidifier)</td>
<td>0.00</td>
<td>0.10</td>
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<tr>
<td></td>
<td>Resperionics Pressure Valve</td>
<td>0.10</td>
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<tr>
<td></td>
<td>King™ Bacteria Filter (disposable)</td>
<td>0.74</td>
<td>1.65</td>
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<tr>
<td></td>
<td>Comfort Flap® mask accessory (reusable)</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**WARNING!**
Appropriate diagnostic pressures must be determined when alternate or optional accessories are in place. Resperionics reusable circuit accessories are washable but are for single patient use only. They are not intended to be used on multiple patients.

**Accessories**
The Resperionics DC Power Cord can be used to operate the REMstar LX System in a stationary recreational vehicle, boat or motor home. The REMstar LX CPAP System is not intended for use in a mobile environment. The Resperionics DC Battery Adapter Cable (when used with the Resperionics DC Power Cord) enables the REMstar LX System to be operated from a 12 VDC free-standing battery only. DC Power is not intended to be used as battery back-up. DO NOT connect the DC Power System while the REMstar LX is operating on AC power. System damage may occur.
CAUTION! If the REMstar LX System has been exposed to either very hot or very cold temperatures, allow it to adjust to room temperature before beginning the following setup procedures.

Voltage Setting

STEP 1 Make sure the voltage selector switch on the back of the REMstar LX is set correctly (115 V or 230 V).

Note: If you change the voltage setting, the fuses must also be changed. Fuses are available from Respironics. Refer to the patient instruction manual for instructions on changing the fuses. If the fuse blows immediately after replacement, the unit should be returned for servicing.

Pressure Setting Mode

STEP 2 Plug the pronged end of the power cord into an electrical outlet. Enter the pressure setting mode by simultaneously holding the ramp and pressure on/off buttons down while plugging the power cord in. Release the buttons when the unit turns on.

* The air flow will automatically turn ON and the display screen will show the current elevation setting.

Elevation Setting

STEP 3 Large elevation changes will affect the pressure being delivered by the REMstar LX. In areas with elevations less than 2,500 ft. (<762 m), the REMstar LX should be on the low setting. In areas with elevations between 2,500 and 5,000 ft. (762 m - 1524 m), the REMstar LX should be on the medium setting. In areas with elevations between 5,000 ft. and 7,500 ft. (1524 - 2286 m) the REMstar LX should be on the high setting.

*Refer to the diagram below for pressure adjustment for elevations over 7,500 ft. (>2286 m).

a. To change the elevation setting, press and release the ramp button until the correct setting is displayed.

b. Press and release the pressure on/off button to view the ramp time setting (step 4).

Pressure Adjustment for Elevation Change

For elevations above 7,500 feet, multiply the desired prescription pressure by the adjustment factor and change the unit's prescription pressure to that new setting. Maintain the 'high' elevation setting.
Ramp Settings

STEP 4 The minimum ramp pressure is factory set at 4 cm H₂O and cannot be changed. The ramp time can be set from 0 to 45 minutes (5 minute increments). The first time the ramp button is pressed, the pressure will reduce to 4 cm H₂O and then increase in a linear fashion over the set time period until the pressure setting is reached. After the first activation, each subsequent ramp will be for one-half of the set ramp time. The blower must be turned off with the Pressure On/Off button and then back on again to reset the ramp to the full time.

a. To change the ramp time setting, press and release the ramp button until the correct setting is displayed.

b. Press and release the pressure on/off button to view the pressure setting (step 5).

Pressure Setting

STEP 5 Method 1: Using the Display Screen

- To change the pressure setting, press the ramp button 1 time for each 0.5 cm increase (i.e., press the ramp button 4 times to increase the pressure 2 cm). Pressing the button when the setting is 20 cm will start the pressure setting over again at 4 cm.

Range: 4.0 - 20.0 cm H₂O
(0.5 cm H₂O increments)

Note: The vertical line to the left of the display screen indicates 0.5 cm H₂O.

Method 2: Using a Manometer

Optional: Pressure Verification Via Manometer

A water column manometer can be connected for additional pressure verification.

- Connect the patient circuit to the unit.

- Zero your manometer and connect the manometer at the patient mask.

- Read the pressure from the manometer. Note: The REMstar LX will require up to 40 seconds to stabilize the pressure after the last pressure setting change.

- To change the pressure setting, press the ramp button 1 time for each 0.5 cm increase (i.e., press the ramp button 4 times to increase the pressure 2 cm). Pressing the button when the setting is 20 cm will start the pressure setting over again at 4 cm.

Range: 4.0 - 20.0 cm H₂O (0.5 cm H₂O increments)

To exit the pressure setting mode, hold the pressure on/off button down and press the ramp button one time. Release the on/off button. You have now exited the pressure setting mode. The air flow will turn off, the pressure/elevation display will turn off, and the green signal light will turn on.

STEP 6 Verify the settings before delivering the REMstar LX System to the patient. Fill out the information form in the front of the user manual. Review the user manual with the patient.
MAINTENANCE & SERVICE

The REMstar LX System does not require routine servicing.

If the REMstar LX begins to function incorrectly, refer to the "Troubleshooting" section of the User Manual or contact Respironics, Inc. Repairs and adjustments must be performed only by trained personnel fully acquainted with this equipment. Service performed by unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage.

If you need technical assistance, call:
Respironics' Technical Service Department
1-800-345-6443 (within the U.S. and Canada) or 1-412-731-2100