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SYMBOLS

Display Screen

	Elevation
	Ramp Start Pressure
	Humidifier Setting
	Hours of Use
	Number of nights with more than 4 hours usage

Control Buttons

	Pressure On / Off
	Ramp
	Humidifier On / Off

REMstar Plus Device

	Attention, consult accompanying documents
	DC Power
	Type BF Applied Part
	Class II (Double Insulated)
	European CE Declaration of Conformity

Intended Use

The Respirationics REMstar Plus System is a CPAP (Continuous Positive Airway Pressure) device designed for the treatment of adult Obstructive Sleep Apnea only.

The REMstar Plus is to be used only on the instruction of a licensed physician. Your home care provider will make the correct pressure settings according to your physician's prescription.

Several accessories are available to make your OSA treatment with the REMstar Plus CPAP System as convenient and comfortable as possible. To ensure that you receive the safe, effective therapy prescribed for you, use only Respirationics accessories.

IMPORTANT!

Read and understand the entire user's manual before operating this system. If you have any questions concerning the use of this system, contact your home care provider or doctor.

Contraindications

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

- Bullous Lung Disease
- Pneumothorax
- 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 positive airway pressure therapy may be temporarily contraindicated if you exhibit signs of a sinus or middle ear infection. Not for use with patients whose upper airways are bypassed. Contact your physician if you have any questions concerning your therapy.

Specifications

Device Size	Dimensions: Weight:	9 1/2" x 6 7/8" x 4 1/2" (24 x 17 x 12 cm) 4.0 lbs. (1.8 kg)	
Product Use, Transport, and Storage	Temperature: Humidity: Atmospheric Pressure:	Operation 41 to 95° F (5 to 35° C) 15 to 95% Non-condensing 82.8 to 102 kPascals	Transport & Storage -4 to 140° F (-20 to 60° C) 15 to 95% Non-condensing 50 to 102 kPascals
Standards Compliance	This device is designed to conform to the following standards: IEC 60601-1-1 General Requirements for Safety IEC 60601-1-2 Electromagnetic Compatibility EN ISO 8185 General Requirements for Humidification Systems US Deviations (UL 2601-1) Canada Deviations (C22.2 601.1)		
Mode of Operation	Continuous		
Power Requirements	AC Power Consumption: DC Power Consumption:	100 to 240 VAC, 50/60 Hz, 1.0 A max. 12 VDC, 3.0 A max.	
Type of Protection Against Electric Shock	Class II Equipment		
Degree of Protection Against Electric Shock	Type BF Applied Part		
Degree of Protection Against Ingress of Water	IPX0 - Ordinary Equipment		
Pressure Range	4 to 20 cm H ₂ O (in 1 cm increments)		

Warnings & Cautions

CAUTION!

- *US federal law restricts this device to sale by or on the order of a physician.*

WARNING!

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

- *The instructions in this manual are not intended to supersede established medical protocols.*
- *This device is intended for adult use only.*
- *This device is not intended for life support.*
- *CPAP devices have the potential to allow rebreathing of exhaled air. To reduce this potential, observe the following:*
 - *Use Respirationics circuit accessories.*
 - *Do not wear the mask and headgear for more than a few minutes while the device 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.

- *Do not use this device if the room temperature is warmer than 95° F (35° C). If this device is used at room temperatures warmer than 95° F. (35° C), the temperature of the airflow may exceed 106° F (41° C). This could cause irritation to your airway.*
- *This equipment is not suitable for use in the presence of a flammable anaesthetic mixture in combination with oxygen or air, or in the presence of nitrous oxide.*
- *To avoid electrical shock, disconnect the power cord before cleaning. DO NOT immerse the device in any fluids*
- *Contact your doctor if symptoms of sleep apnea recur.*

CAUTION!

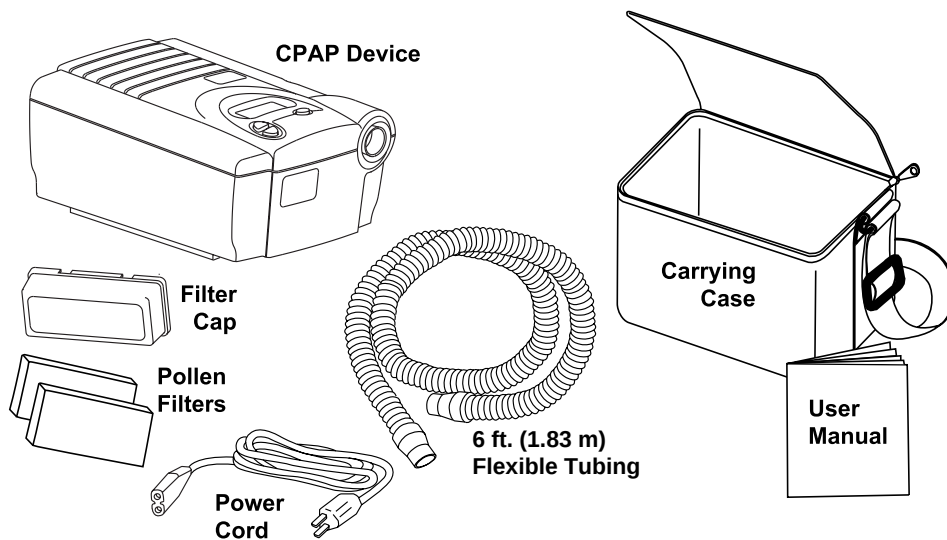
Indicates the possibility of damage to the device.

- *If you notice any unexplained changes in the performance of this device, if it is making unusual or harsh sounds, if it has been dropped or mis-handled, if the enclosure is broken, or if water has entered the unit, discontinue use and contact your home care provider.*
- *Tobacco smoke may cause tar build-up within the REMstar Plus that may result in the REMstar Plus malfunctioning.*

Additional warnings and cautions are located throughout this manual as they apply.

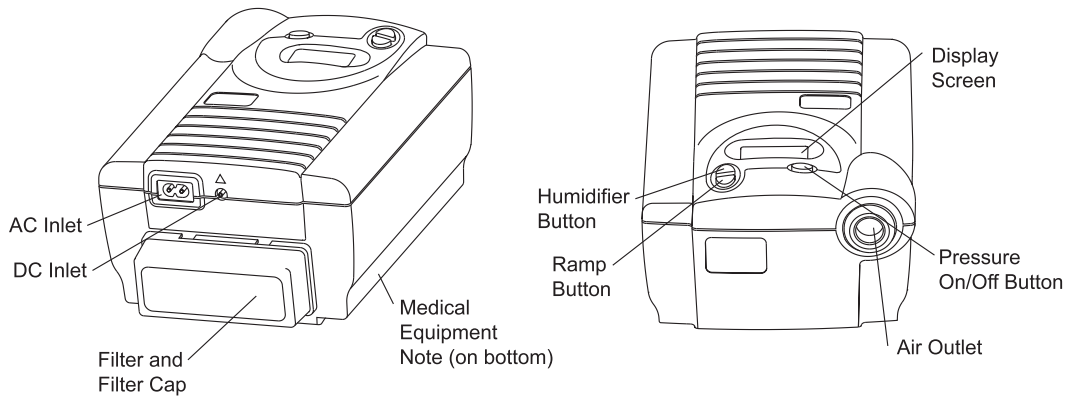
Unpacking the System

After unpacking the system, check to make sure you have everything shown here:



IMPORTANT! *If any of the above parts are missing, contact your home care provider.*

System Features



AC Inlet Connect the AC power cord here.

Air Outlet Connect flexible tubing here.

DC Inlet Connect the optional DC power cord here.

Display Screen All System settings, total operating time, and therapy hours will be displayed here. Displays the pressure and elevation settings.

Filter Cap & Filter The *pollen filter* screens out normal household dust and pollens. The filter cap is designed to reduce the noise from the CPAP device.

Humidifier Button This button turns the REMstar heated humidifier on/off and allows the heat setting to be adjusted. The humidifier is an optional accessory that may be purchased separately.

Medical Product Note For ease at airport security stations, there is a note on the bottom of the REMstar Plus stating that it is medical equipment. It may help if you also take this manual with you when you travel.

Pressure On / Off

Button This button turns the airflow on or off.

Ramp Button This button starts the ramp cycle.

First Time Setup

WARNING! Do not use the REMstar Plus System until an appropriate professional adjusts the settings! To order any accessories not included with this System, contact your home care provider.

Note to home care provider: Before beginning setup, be sure that you have available the REMstar Plus Home Care Provider Setup Instructions. It contains instructions for setting up the REMstar Plus.

WARNING! DO NOT connect any equipment to the REMstar Plus unless recommended by Respironics or your doctor.

WARNING! Respironics circuit accessories (i.e., nasal mask, exhalation port, tubing) are for single patient use only and are not intended to be used on multiple patients.

CAUTION! If the REMstar Plus has been exposed to either very hot or very cold temperatures, allow it to adjust to room temperature (approximately 2 hours) before beginning setup.

ATTENTION! Large elevation changes will affect the pressure being delivered by the REMstar Plus. Refer to the “Traveling with the System” section if you relocate or travel to areas with a significantly higher or lower elevation.

First Time Setup

Installing Filters

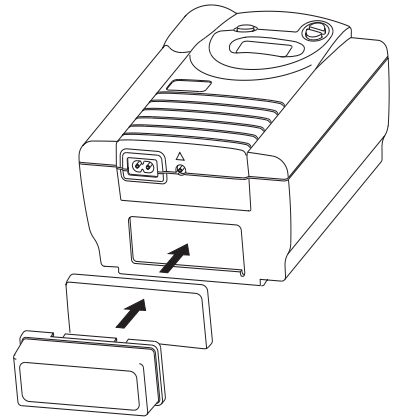
CAUTION!

1. Install the filter and filter cap.

The pollen filter must be in place at all times when the device is operating.

- a. Place one of the filters into the filter area on the back of the device. An extra filter is included for your convenience.

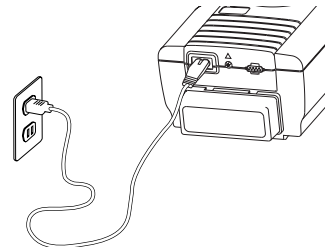
- b. Attach the filter cap. Position the cap so that the small opening on the cap is facing down. Insert the cap's bottom tabs into the openings below the filter area. Press down on the cap's top tabs and insert them into the openings above the filter area.



Power Cord

2. Connect the power cord.

Plug the socket end of the power cord into the AC inlet on the back of the device. Plug the pronged end of the power cord into an electrical outlet.



CAUTION!

Inspect the power cord often for any signs of damage. Replace a damaged cord immediately.

CAUTION!

This device is activated when the power cord is connected. The Pressure On / Off button turns only the blower on/off.

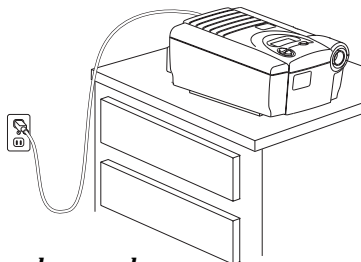
First Time Setup

3. Place the device on a firm, flat surface.

CAUTION!

Make sure the device is away from any heating or cooling equipment (e.g., forced air vents, radiators, air conditioners).

Also, make sure that bedding, curtains, or other items are not blocking the filter or vents of the device. Air must flow freely around the device for the System to work properly.



Device Settings

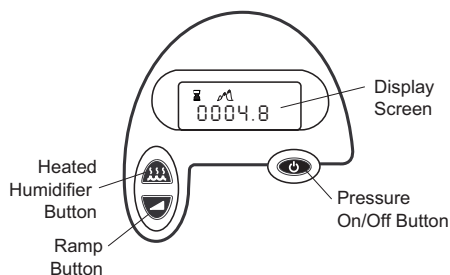
Once the power cord is plugged in, the hourglass symbol and the hours of use will be displayed. If the elevation setting is at M or Hi, the elevation symbol will also be displayed.

Display Screen: All device settings will appear here.

Pressure On/Off Button: Use this button to turn the airflow on or off. DO NOT turn the airflow on until the circuit tubing is connected.

Humidifier Button: Use this button when the optional REMstar® Heated Humidifier has been prescribed. This button will control the optional heated humidifier's output. Follow the instructions included with the humidifier.

Ramp Button: Use this button to start the ramp cycle (which lowers the airflow pressure). This will allow you to fall asleep more easily.



IMPORTANT!

When the device is in the Setup Menu, the humidifier and ramp buttons operate as up and down keys to change the settings and the pressure on/off button will take you to the next screen.



First Time Setup

Device Settings

CAUTION!

4. **Verify/Change the device settings.** To start the setup menu, press the ramp button. (The airflow must be turned off.)

DO NOT use the REMstar Plus if the display is erratic. Contact your home care provider for further instructions.

- a. The elevation symbol and setting will be displayed:

Lo = less than 2,500 ft. (< 762 m)

M = 2,500 to 5,000 ft. (762m to 1524 m)

Hi = 5,001 to 7,500 ft. (1525 m to 2286 m)

*over 7,500 ft. = The airflow pressure may not be accurate.

Contact your home care provider to have your pressure setting adjusted.



To change the elevation setting, press the ramp or humidifier buttons. Press and release the pressure on/off button to go to the next setting.

- b. The Ramp Starting Pressure symbol and setting will appear. (This screen will not appear if your doctor has not prescribed ramp for you.)



To change the setting, press the ramp or humidifier buttons. Press and release the pressure on/off button to go to the next setting.

- c. The LED On/Off symbol and setting will appear. This setting allows you to have the lights behind the buttons turned on or off (when the airflow is turned on).



1 = on

0 = off

To change the setting, press the ramp or humidifier buttons. Press and release the pressure on/off button to go to the next setting.

- d. The number of nights with more than 4 hours will appear. Press the pressure on/off button to exit the settings. This screen is only for reference. Your home care provider may periodically ask you for this information.



The hour symbol and hours of use will appear. Also, if the elevation setting is M or Hi, the elevation symbol will appear.



First Time Setup

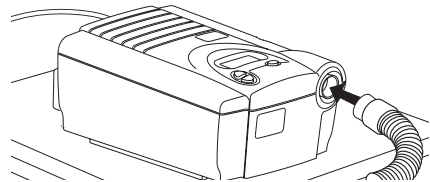
Assembling the Circuit

5. **Assemble the circuit.** To use the System, you will need the following accessories in order to assemble the recommended circuit.

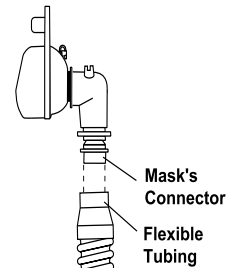
- **Respironics Nasal Mask with integrated exhalation port**
(or Respironics mask with separate exhalation port such as the Whisper Swivel®)
- **Respironics 6 ft. (1.83 m) Flexible Tubing**
- **Respironics Headgear** (for the mask; not shown)

WARNING! *If the REMstar Plus is used for multiple persons (e.g., rental devices) a low-resistance, main flow bacteria filter should be installed in-line between the REMstar Plus and the circuit tubing. Pressures must be verified when alternate or optional accessories are in place.*

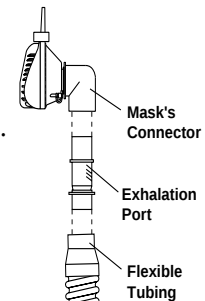
- a. **Connect the flexible tubing to the air outlet on the front of the REMstar Plus.**



- b. **If you are using a mask with a built-in exhalation port:** Connect the mask's connector to the flexible tubing



If you are using a mask with a separate exhalation port: Connect the flexible tubing to the exhalation port. Position the exhalation port so that the vented air is blowing away from your face. Connect the mask's connector to the exhalation port.



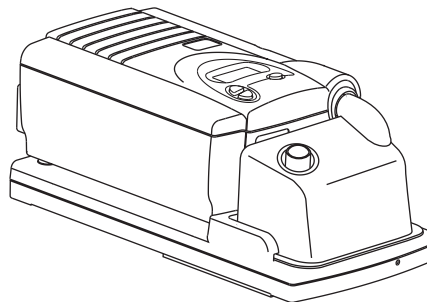
WARNING! *The exhalation port is designed to exhaust CO₂ from the circuit. Continuous flow is required for safe operation. Do not block or otherwise try to seal the air openings on the exhalation port.*

WARNING! *If you are using a full face mask (i.e., a mask covering both your mouth and your nose), the mask must be equipped with a safety (entrainment) valve.*

Contact your home care provider for additional information on the accessories available for the REMstar Plus System. When using optional accessories, always follow the instructions enclosed with the accessories.

Adding a Humidifier

The REMstar Heated Humidifier and REMstar Pass-over Humidifier are available from your home care provider. A humidifier may reduce nasal dryness and irritation by adding moisture (and heat if applicable) to the airflow.



CAUTION!

For safe operation, the humidifier must always be positioned below the circuit connection at the mask and the air outlet on the device. The humidifier must be level for proper operation.

Adding Oxygen to the System

Oxygen may be added at the mask connection. Please note the warnings listed below when using oxygen with this device.

WARNING!

When using oxygen with this System, the oxygen supply must comply with the local regulations for medical oxygen.

WARNING!

When using oxygen with this System, a Respirationics Pressure Valve (Part number 302418) must be placed in-line with the patient circuit.

WARNING!

When using oxygen with this System, turn the device on before turning the oxygen on. Turn the oxygen off before turning the device off. This will prevent oxygen accumulation in the device.

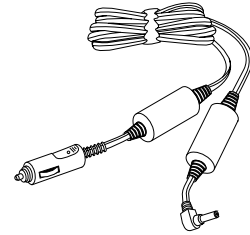
WARNING!

Oxygen accelerates fires. Keep the device and the oxygen container away from heat, open flames, any oily substance, or other sources of ignition. DO NOT smoke in the area near the device or the oxygen container.

Accessories

Using a DC Power System

You can also use this device in a stationary recreational vehicle, boat or motor home with a 12 volt DC power source. Do not operate this device while the vehicle is in motion. Contact your home care provider for additional information.



CAUTION!

Use only the Respironics DC Power System available from your home care provider. Use of any other system may cause damage to the device or your vehicle.

CAUTION!

DC Power is not intended to be used as battery back-up. DO NOT connect the DC Power System while the device is operating on AC power. System damage may occur.

Using an Ultra-fine Filter

An optional ultra-fine filter can be used in addition to the pollen filter for more complete filtration of very fine particles. The ultra-fine filter is recommended for people who are sensitive to tobacco smoke or other small particles.

Carrying Case

The carrying case holds the device and accessories. When traveling by airplane, the carrying case is for carry-on luggage *only*. Never check this device through the baggage department.

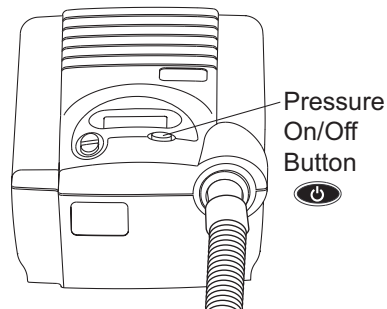
Connecting the Circuit

IMPORTANT!

1. Connect the circuit.

Before each use, examine the flexible tubing for any damage or debris. If necessary, clean the tubing to remove the debris. Replace any damaged tubing.

- a. Connect the mask to the headgear, following the instructions included with the headgear. Press the Pressure On/Off button on the top of the REMstar Plus to turn the airflow ON.
- b. Put on the mask and headgear, and breathe normally through your nose.



Adjusting the Circuit

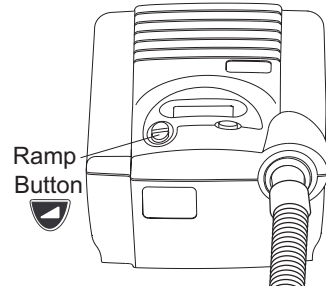
2. **Adjust the circuit.** Lie down on your bed and adjust the flexible tubing so it is free to move if you turn in your sleep. Adjust the mask and headgear until you have a comfortable fit and there are no airflow leaks into your eyes.

Routine Use

Using the Ramp Button

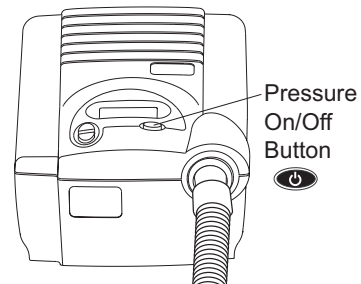
Pressing the Ramp button will reduce the air pressure when you are trying to fall asleep. The air pressure will gradually increase until your prescription pressure is reached. You also have the option of not using the ramp feature at all.

3. **Press the Ramp button on the top of the REMstar Plus.** You can use the Ramp button as often as you wish during the night.



Turning the System OFF

4. **Press the Pressure On/Off button on the top of the REMstar Plus to turn the airflow OFF.**



IMPORTANT!



The humidifier button is active only when a Respirationics Heated Humidifier is connected or when the REMstar Plus is in the Setup Menu (refer to page 10).

Helpful Hints

- Make sure that bedding, curtains, or other items are not blocking the filter or vents of the REMstar Plus. Air must flow freely around the REMstar Plus for the System to work properly.
- If the airflow from the REMstar Plus feels cold, reposition the circuit tubing so that it runs under your bed covers to reduce heat loss while you sleep.

Traveling with the System

Packing the System

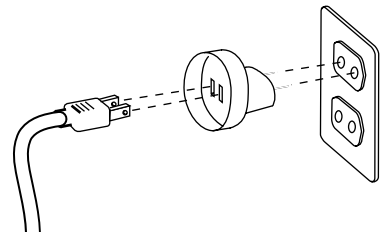
When traveling, the carrying case is for carry-on luggage *only*. The carrying case will not protect the system if it is put through checked baggage.

Security Stations

For convenience at security stations, there is a note on the bottom of the REMstar Plus stating that it is medical equipment. It may be helpful to bring this manual along with you to help security personnel understand the REMstar Plus.

Checking the Power Cord

If you are traveling to a country with a line voltage different than the one you are currently using, a different power cord or an international plug adapter may be required to make your power cord compatible with the power outlets of the country to which you are traveling. Contact your home care provider for additional information.



Changes in Elevation

Elevation changes can affect the pressure being delivered by the REMstar Plus. If you are traveling or moving to a new area, confirm the elevation. To verify/change the elevation setting:

1. Make sure the REMstar Plus is plugged in and the airflow is turned OFF.

2. Press the ramp button. The elevation symbol and setting will be displayed.

Lo = less than 2,500 ft. (< 762 m)

M = 2,500 to 5,000 ft. (762m to 1524 m)

Hi = 5,001 to 7,500 ft. (1525 m to 2286 m)

***over 7,500 ft. = The airflow pressure may not be accurate.**

Contact your home care provider to have your pressure setting adjusted.

3. To change the elevation setting, press the ramp or humidifier button. The main screen will display after 5-10 seconds.

Routine Maintenance

Cleaning the Filter

The filter should be cleaned at least once every two weeks under normal usage and replaced with a new one every six months.

CAUTION!

Operating the REMstar Plus with a dirty filter may keep the system from working properly and damage the REMstar Plus.

1. Remove the filter cap by gently pressing down on the two latches on the top of the filter cap.
2. Clean the filter.
 - a. Remove the filter by gently pulling around the edges of the filter. Rinse the filter in a steady stream of running water. Squeeze out the water and repeat. Air dry on a rack for 8 to 12 hours or in a clothes dryer for 15 to 20 minutes.
 - b. Insert the clean filter into the filter area on the back of the REMstar Plus. Replace the filter cap.

CAUTION!

Never install a wet filter into the REMstar Plus. We recommend that you clean the filter in the morning and alternate using the two filters provided with the System to ensure enough drying time for the cleaned filter.

Cleaning the System

Clean the mask and tubing daily.

WARNING!

To avoid electrical shock, unplug the REMstar Plus before cleaning. Do not immerse the REMstar Plus in any fluids.

1. Disconnect the flexible tubing from the REMstar Plus. Gently wash the flexible tubing in a solution of warm water and a mild detergent. Rinse thoroughly. Air dry.
2. Wipe the outside of the REMstar Plus with a cloth slightly dampened with water and a mild detergent. Let the REMstar Plus dry before plugging in the power cord.
3. Inspect the REMstar Plus and all circuit parts for any damage after cleaning. Replace any damaged parts.
4. For details on cleaning your mask and accessories, refer to the cleaning instructions packaged with the accessories.

Reordering

Contact your home care provider to order accessories or replacement filters.

Service

The REMstar Plus System does not require routine servicing.

CAUTION!

If you notice any unexplained changes in the performance of this device, if it is making unusual or harsh sounds, if it has been dropped or mishandled, if the enclosure is broken, or if water has entered the device, discontinue use. Contact your home care provider.

WARNING!

If the REMstar Plus malfunctions, contact your home care provider immediately. Never attempt to open the REMstar Plus's enclosure. Repairs and adjustments must be performed by Respironics authorized service personnel only. Unauthorized service could cause injury, invalidate the warranty, or result in costly damage.

Troubleshooting

The table below lists common problems you may have with the REMstar Plus System and possible solutions to those problems. If none of the corrective actions solve the problem, contact your home care provider.

Problem	Solution(s)
The pressure being delivered feels different.	Check the elevation setting to be sure it is set to your elevation. Change the elevation setting if necessary. If the elevation setting is correct, contact your home care provider or Respironics for directions on having the REMstar Plus serviced. Please have the device's serial number ready when you call.
The airflow from the REMstar Plus seems warm.	Replace or clean the filter. Make sure the REMstar Plus is away from bedding or curtains that could block the flow of air around the REMstar Plus. Make sure the REMstar Plus is away from heating equipment (e.g., forced air vents, radiators).
The noise level of the REMstar Plus has changed to include unusual or harsh sounds during operation.	Contact your home care provider or Respironics for directions on having the REMstar Plus serviced. Please have the device's serial number ready when you call.
The REMstar Plus will not turn on.	Make sure that the REMstar Plus is plugged into a working outlet. If you are using a DC battery, the battery may need to be recharged or replaced or the fuses may need to be replaced. Contact your home care provider or Respironics for directions on having the REMstar Plus serviced. Please have the device's serial number ready when you call.
Pressing the Ramp button does not reduce the air pressure.	Contact your home care provider. Ramp may not have been prescribed for you.
The REMstar Plus has been dropped into water or fluids have gotten into the enclosure.	Discontinue use. Disconnect the power cord from the AC wall outlet. Pour out the excess water and allow the REMstar Plus to dry out. If the device does not function properly, contact your home care provider.

Limited Warranty

Respironics, Inc.® warrants that the REMstar® Plus CPAP device shall be free from defects of workmanship and materials and will perform in accordance with the product specifications for a period of two (2) years from the date of sale by Respironics, Inc. to the dealer. If the product fails to perform in accordance with the product specifications, Respironics, Inc. will repair or replace, at its option, the defective material or part. Respironics, Inc. will pay customary freight charges from Respironics, Inc. to the dealer location only. This warranty does not cover damage caused by accident, misuse, abuse, alteration and other defects not related to material or workmanship.

RESPIRONICS, INC. DISCLAIMS ALL LIABILITY FOR ECONOMIC LOSS, LOSS OF PROFITS, OVERHEAD OR CONSEQUENTIAL DAMAGES WHICH MAY BE CLAIMED TO ARISE FROM ANY SALE OR USE OF THIS PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IN ADDITION, ANY IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR THE PARTICULAR PURPOSE ARE LIMITED TO TWO YEARS. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

To exercise your rights under this warranty, contact your local, authorized Respironics, Inc. dealer or Respironics, Inc. at 1001 Murry Ridge Lane, Murrysville, Pennsylvania 15668, 1-800-345-6443 (US and Canada only) or 1-724-387-4000.

For information on sleep disorders, contact the following organizations:

**American Sleep Apnea Association
2025 Pennsylvania Ave., N.W., Suite 905
Washington, DC 20006
Telephone: 1-202-293-3650
Fax: 1-202-293-3656
www.sleepapnea.org**

**National Sleep Foundation
729 Fifteenth Street, N.W., Fourth Floor
Washington, DC 20005
www.sleepfoundation.org**

IMPORTANT!

Fill in the information below when you receive the REMstar Plus CPAP system.

REMstar Plus Serial No.: _____ (Located on the bottom of the REMstar Plus)

System Prescribed for: _____

Date of Purchase or Rental: _____

Pressure Setting: _____ cm H₂O

Mask Type: _____

Mask Size: _____

If you have any questions concerning the System, contact:

• Home Care Company: _____

Telephone Number: _____

• Doctor: _____

Telephone Number: _____

• Respironics, Inc.

1001 Murry Ridge Lane

Murrysville, Pennsylvania

15668-8550 USA

Customer Service

Telephone Number: 1-800-345-6443 (US and Canada) or 1-724-387-4000

REMstar Plus CPAP systems are the subject of US patent #5,239,995. Other patents pending.

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