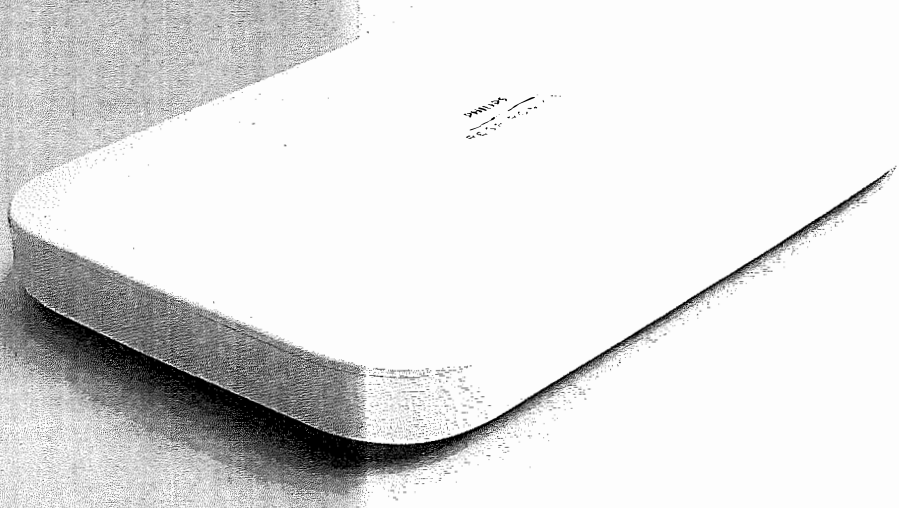
PHILIPS

RESPIRONICS

PAP battery kit

Lithium ion battery with integrated uninterruptible power supply (UPS)



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RESPIRONICS

Li Ion Battery Pack

Instructions For Use - EN

1 Intended Use

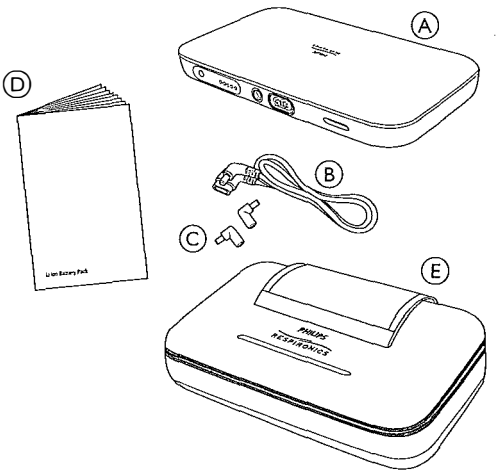
The Lithium Ion (Li Ion) Battery Pack is an accessory intended to supply power to specified Philips Respironics sleep therapy and noninvasive ventilation devices. The Li Ion Battery Pack is intended to be used in home, hospitals, and institutions.

The Li Ion battery Pack is compatible with the following Philips Respironics sleep therapy devices and noninvasive ventilation devices:

- DreamStation CPAP and BiPAP sleep therapy devices
- System One CPAP and BiPAP sleep therapy devices
- Dorma sleep therapy devices
- BiPAP AVAPS and BiPAP S/T noninvasive ventilation devices

The Li Ion Battery Pack is referred to as "the battery pack" throughout the remainder of these instructions.

2 Package Contents



Ⓐ Battery pack

Ⓑ Cable

Ⓒ Adapters

Ⓓ Instructions for Use

Ⓔ Carry case

3 ⚠ Warnings and Cautions

Warnings

A warning statement highlights a scenario where personal injury may occur.

• This Instructions for Use document does not cover operation of your DreamStation, Dorma, System One, BiPAP AutoSV, BiPAP AVAPS, or BiPAP S/T therapy device. When using the battery pack with a therapy device, refer to the individual Instructions for Use provided with each therapy device.

• Periodically inspect the power cord for damage or signs of wear. Discontinue use and replace if damaged.

• Before use, inspect the battery pack for any damage such as a cracked or broken enclosure. Inspect the cables to ensure that no bare wires are showing. If you notice any unexplained changes in the performance of the battery pack, discontinue use and contact Philips Respironics.

• To avoid strangulation hazards, ensure that all cords connected to the battery pack are properly routed.

• This product contains small parts which can cause choking hazards.

• Do not submerge the battery pack in water or any other liquid.

• Do not use any accessories, detachable parts, or materials not recommended by Philips Respironics. Do not connect the battery pack to any equipment not listed in this Instructions for Use document. Incompatible parts or accessories can result in degraded performance.

• Use only power cords and power supplies supplied by Philips Respironics for this battery pack. Use of power cords not supplied by Philips Respironics may cause overheating or damage to the battery pack and may result in increased emissions or decreased immunity of the equipment or system.

• Use only approved cables and accessories with your battery pack. Misuse may affect electromagnetic compatibility (EMC) performance and should be avoided. The device should not be used while stacked or in close approximation to other non-approved devices.

• Do not attempt to modify the battery pack in any way.

Cautions

A caution statement highlights a scenario where damage to the battery pack or other equipment may occur.

• Do not place the battery pack in or on any container that can collect or hold water.

• Ensure that the therapy device is properly secured if it is being used in a portable environment.

• Do not expose the battery pack to extreme temperatures (see the ***Specifications*** section for temperature specifications). If the battery pack becomes very hot or very cold, allow it to come to room temperature before using.

• There are no user-serviceable parts inside of the battery pack; therefore, do not attempt to disassemble or repair it.

• Do not use any cleaning products other than the products listed in this document. Use of other products may damage or shorten the life of your battery pack.

• Medical electrical equipment needs special precautions regarding EMC and needs to be installed according to the *EMC Information* section. Contact your home care provider regarding EMC installation information.

• Mobile RF communications equipment can affect medical electrical equipment.

• Do not touch the pins or connectors.

4 Symbols

The following symbols may appear on the battery pack and accessories:

Note: If the battery pack will be used for airline travel, please consult the airline restrictions (e.g., number of spare batteries permitted). Please familiarize yourself with airline rules.

Symbol	Description	Symbol	Description
Li-ion	Li Ion battery		Caution, consult accompanying documents.
	Separate collection for electrical and electronic equipment per EC Directive 2012/19/EU.		For Airline Use. Complies with RTCA/DO-160G section 21, category M.
	Consult accompanying instructions for use.	IP22	Drip Proof Equipment

5 Before Use

How to Contact Philips Respironics

Should you experience trouble with this equipment or require assistance setting up, using, or maintaining the battery pack, please contact your home care provider. If you need to contact Philips Respironics directly, call the Philips Respironics Customer Service department at 1-800-345-6443 or 724-387-4000. You can also use the following address:

Respironics, Inc.

1001 Murry Ridge Lane

Murrysville, PA 15668, USA

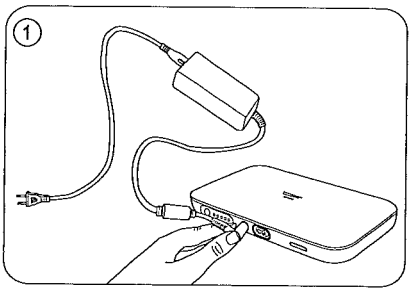
Preparing the Battery Pack for First Use and Recharging

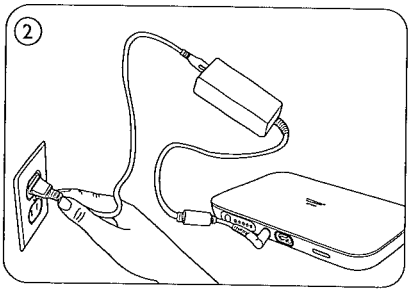
1. Remove the battery pack, adapters, and cables from the packaging.

Note: Retain your packaging in case you ever need to return your battery pack to Philips Respironics.

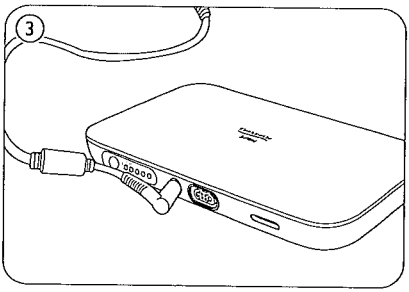
Note: A power supply is not included in the package with your battery pack. Use the power supply provided with your therapy device.

2. Plug the power supply provided with your therapy device into an AC outlet. (1)
3. Plug the other end of the power supply into the battery pack. The battery pack will begin to charge automatically. (2)





4. The battery pack LED display will momentarily light up to show the charge level. The first time it is turned on, the battery pack will not be fully charged. (3)



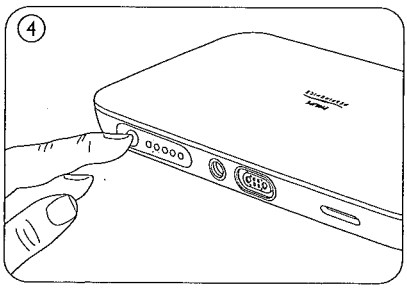
Note: Before using the battery pack for the first time, you must plug it in until it is fully charged. This may take up to 3 hours.

5. Once the battery pack is fully charged, it is ready to use with your therapy device.

Indicators and Buttons

Push Button

The push button is located on the LED display of the battery pack. Push the button in completely to check the charge level. (4)



LED Display

The battery pack uses five green LED lights to indicate the battery pack charge level. The LEDs will be in one of three modes: steady ●, blinking ☼, or off ○.

Discharging	
LED	**Battery Pack Charge**
●●●●●	81%-100%
●●●●○	61%-80%
●●●○○	41%-60%
●●○○○	21%-40%
●○○○○	11%-20%
☼○○○○	1%-10%
○○○○○	0%

Charging	
LED	**Battery Pack Charge**
☼○○○○	0%-20%
●☼○○○	21%-40%
●●☼○○	41%-60%
●●●☼○	61%-80%
●●●●☼	81%-99%
●●●●●	100%
○○○○○	See *Troubleshooting* section below.

Troubleshooting

1. If you are attempting to charge your battery pack after it is completely depleted, it may take a few moments for the LEDs to light up. If your battery pack is plugged in and no lights are displayed, wait 3 to 5 minutes and press the button again.

2. If the LEDs still do not light up after attempting Step 1, your battery pack may have been damaged or may need to be replaced. Contact Philips Respironics.

6 Operation

Using the Battery Pack with a Therapy Device

After charging, your battery pack is ready to use. It can either be disconnected from the power supply and used as an external battery pack (standalone mode), or remain plugged into the power supply and outlet for a continuous, fully charged battery pack (uninterruptible power supply (UPS) mode).

Note: The first time you charge your battery pack, it must be charged in accordance with the ***Before Use*** section. After the first charge is completed, the battery pack will charge while connected in UPS mode.

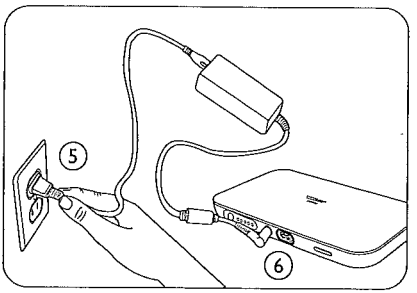
Uninterruptible Power Supply Mode

To use the battery pack in UPS mode, keep it plugged into the power source and connected to an outlet. This will allow you to use the battery pack continuously without losing any charge.

Note: In order for your therapy device to detect what power is available, it is important to connect the components in the proper order.

1. Plug the power supply into an AC outlet. (5)

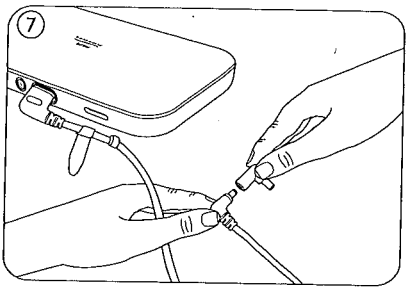
2. Plug the other end of the power supply into the battery pack (6) and wait for the LEDs to stop blinking.

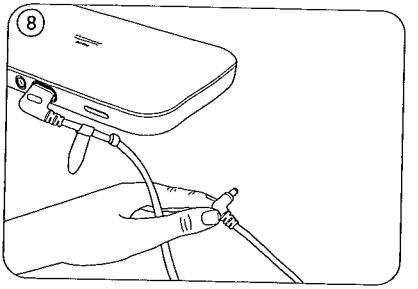


3. Connect the therapy device cable to the battery pack. The therapy device cable should correspond to the therapy device you are using.

- Some therapy devices require adapters to connect to the device cable. To use the adapter, connect it to the end of device cable and then plug the adapter end directly into your therapy device. (7)

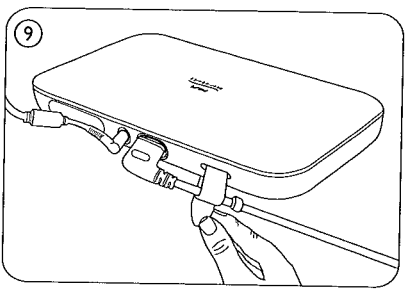
• For the majority of therapy devices, the white therapy device cable can be connected directly into the therapy device without the use of adapters. (8)

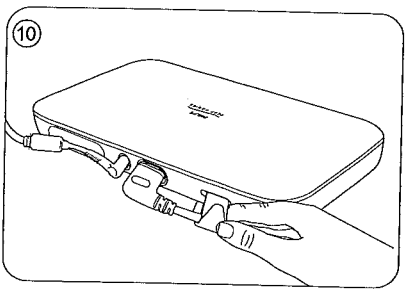




4. Insert the strap attached to the cable through the slot in the battery pack. Pull it through and under the battery pack. (9)

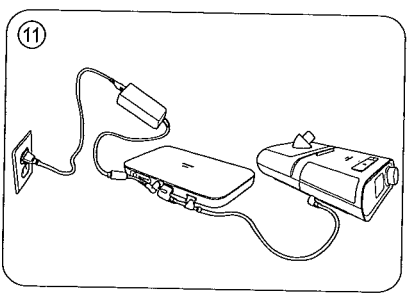
5. Wrap the strap around the therapy device cable, and secure it by pressing the hook side of the strap against the loop side. (10)





6. Connect the other end of the therapy device cable into the device.

7. The battery pack will automatically begin providing power to the therapy device. (11)

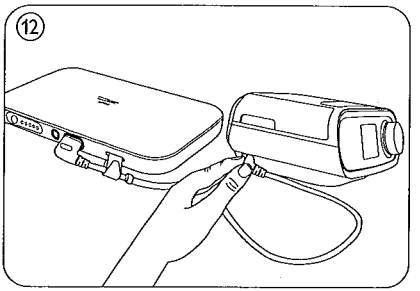


Standalone Mode

After the battery pack is charged, disconnect it from the power supply. It can now be used with your therapy device as an external battery pack.

1. Ensure that the battery pack is charged. To confirm, completely push in the push button located on the LED display of the battery pack. All of the LEDs should be steadily lit.

2. Complete Steps 2 through 6 of the *Uninterruptible Power Supply Mode* section. ⑫



Note: Humidification is disabled for DreamStation models. When the therapy device cable is connected to your DreamStation device, a message will appear on the device display indicating that humidification is not supported.

Disconnecting the Battery Pack

1. Disconnect the white therapy device cable from the battery pack.

2. Disconnect the power supply from the battery pack.

3. The battery pack may be stored in the carry case for use or storage.

Note: To maximize shelf life, charge the battery pack to 100% before storing it and ensure that all cables are disconnected.

7 Cleaning and Maintenance

Cleaning Instructions

Every two weeks of use, inspect your battery pack to see if it needs to be cleaned. You can use any of the following cleaning agents to clean your battery pack.

- Mild detergent
- Water
- 70% Isopropyl Alcohol (Rubbing Alcohol)
- DisCide Ultra Towelettes
- 10% household bleach solution (10% household bleach, 90% water)

1. To avoid electrical shock, ensure that the battery pack is disconnected from all outlets and power sources. Remove any cables attached to the battery pack.

2. Using one of the approved cleaning products from the list above, dampen a clean, soft cloth and gently wipe the outside casing of the battery pack.

3. Allow the battery pack to dry completely before reconnecting it to a power source, device, or cable.

Note: After cleaning, inspect the enclosure carefully for damage such as cracks or broken pieces.

8 Disposal

Dispose of the battery pack in accordance with local regulations.

9 EMC Information

Your battery pack has been designed to meet EMC standards throughout its service life without additional maintenance. There is always an opportunity to relocate your battery pack within an environment that contains therapy devices with their own unknown EMC behavior. If you believe your battery pack is affected by locating it closer to a therapy device, simply separate the battery pack and the therapy device to remove the condition.

Pressure Output

The battery pack is designed to provide power to your therapy device. If you suspect the pressure output is affected by EMC interference, relocate the therapy device to another area. If performance continues to be affected, discontinue use and contact your home care provider.

Guidance and Manufacturer's Declaration - Electromagnetic Emissions – This battery pack is intended for use in the electromagnetic environment specified below. The user of this battery pack should make sure it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment - Guidance
RF emissions CISPR 11	Group 1	The device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network.
Harmonic emissions IEC 61000-3-2 **(Note 1)**	Class A	
Voltage fluctuations/Flicker emissions IEC 61000-3-3 **(Note 1)**	Complies	
Emission of Radio Frequency Energy , RTCA/DO-160G Section 21	Category M	This device is suitable for use on board commercial airplanes inside passenger cabin.

Notes:

(1) The battery pack uses the therapy device supplied ac/dc adapter for charging and does not connect directly to the ac mains. The presence of the battery pack in the connection does not affect overall compliance status.

Guidance and Manufacturer's Declaration - Electromagnetic Immunity – This battery pack is intended for use in the electromagnetic environment specified below. The user of this battery pack should make sure it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast Transient/burst IEC 61000-4-4 **(Note 2)**	±2 kV for power supply lines ±1 kV for input-output lines	±2 kV for supply mains ±1 kV for input/output lines	Mains power quality should be that of a typical home or hospital environment.
Surge IEC 61000-4-5 **(Note 2)**	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV for common mode	Mains power quality should be that of a typical home or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11 **(Note 2)**	<5% U_T (>95% dip in U_T) for 0.5 cycle at 45 degree increments 70% U_T (30% dip in U_T) for 0.5 seconds <5% U_T (>95% dip in U_T) for 5 seconds	<5% UT (>95% dip in U_T) for 0.5 cycle at 45 degree increments 70% U_T (30% dip in U_T) for 0.5 seconds <5% U_T (>95% dip in U_T) for 5 seconds	Mains power quality should be that of a typical home or hospital environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical hospital or home environment.

Notes:

(1) U_T is the ac mains voltage prior to application of the test level.
(2) The battery pack uses the therapy device supplied ac/dc adapter for charging and does not connect directly to the ac mains. The presence of the battery pack in the connection does not affect overall compliance status.

Guidance and Manufacturer's Declaration - Electromagnetic Immunity – This battery pack is intended for use in the electromagnetic environment specified below. The user of this battery pack should make sure it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz 6 Vrms Amateur Radio & ISM Bands between 150 kHz and 80 MHz	3 Vrms 150 kHz to 80 MHz 6 Vrms Amateur Radio & ISM Bands between 150 kHz and 80 MHz	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended 30 cm separation distance. Interference may occur in the vicinity of equipment marked with the following symbol:
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz	10 V/m	

10 Specifications

Battery Pack Service Life

Under normal conditions, the battery pack is expected to last 3 years.

The following factors can potentially reduce the life span of your battery pack:

- Not inspecting the battery pack for damage before using it or after cleaning
- Improper cleaning or storage
- Storing the battery pack in conditions outside of the temperature ranges listed in this document

Detailed Specifications

Environmental		
Operation conditions	Operating temperature:	5°C to 40°C (41°F to 104°F) ambient
	Relative humidity:	15% to 95%, non-condensing
	Atmospheric pressure range:	101.3 kPa to 76.7 kPa (0-7,500 feet above sea level)
Storage temperature		-20°C to 60°C (-4°F to 140°F)

Physical	
Dimensions	22 cm x 13 cm x 2.9 cm (approx. 8 5/8 in. x 5 1/16 in x 1 1/8 in)
Weight	1 kg (2.2 lbs)

Electrical	
Run time	> 14 hours (1)
Output voltage range	11.0-15.0 VDC
Battery technology	Lithium Ion
Capacity	90 Wh
Input voltage range	11.0-14.4 VDC
Output power (max continuous)	90W
Minimum life cycle	≥70% of rated capacity after 1,000 cycles
Recharge time	3-4 hours

Notes:

(1) Run time test conditions: CPAP mode, pressure 10 cm H2O, no heated humidification or heated tubing.

(2) Use of heated humidification or heated tubing significantly reduces the run time of the battery pack.

11 Limited Warranty

Respironics, Inc. warrants that the system shall be free from defects of workmanship and materials and will perform in accordance with the product specifications for a period of six months 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, water ingress, and other defects not related to material or workmanship. The Respironics, Inc. Service department shall examine any devices returned for service, and Respironics, Inc. reserves the right to charge an evaluation fee for any returned device as to which no problem is found after investigation by Respironics, Inc. Service.

This warranty is non-transferable by unauthorized distributors of Respironics, Inc. products and Respironics, Inc. reserves the right to charge dealers for warranty service of failed product not purchased directly from Respironics, Inc. or authorized distributors.

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.

Manufactured for:

Respironics Inc.
1001 Murry Ridge Lane
Murrysville, PA 15668 USA

REF 1126600

1126600 R03
IZ 5/12/2016

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