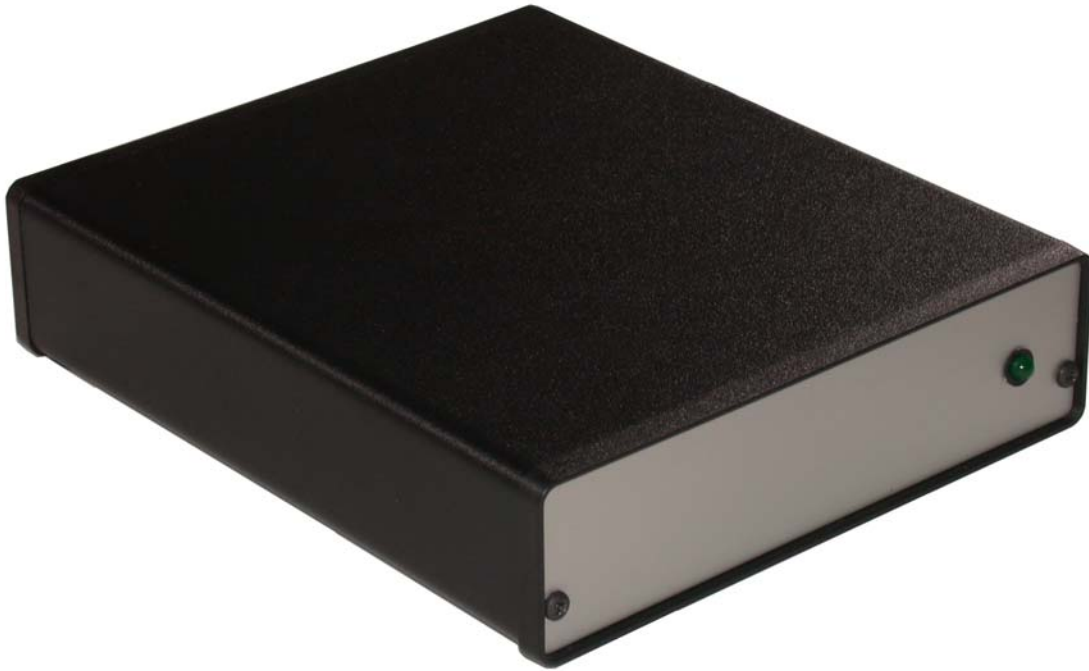


**RICHARDSON
PRODUCTS
INCORPORATED**

User's Manual

PowerTech Vent Power Center

Patented US 6,222,282 B1



PowerTech Vent Power Center Patented Technology United States Patent No. US 6,222,282 B1

⚠ DANGER Warning misuse of this product can cause serious injury or death **⚠ DANGER**

Do not remove case or open the product in any way.

Opening the Product will Void the Warranty!

INTENDED USE:

The PowerTech Vent Power Center is a life support device and a restricted medical device. The PowerTech Vent is suitable for services in the homecare, institution, and transportation settings as a source of continuous or intermittent power for a ventilator. However, it is mandatory that the ventilator AC wall adapter be accessible at all times in the event of an emergency. The PowerTech Vent Power Center is intended to supply a ventilator with safe, filtered voltage. The ventilator is intended for operation only by a Respiratory Therapist or other properly trained qualified personnel, and only under the direction of a physician and in accordance with the applicable state laws and regulations.

Do not use this product away from reliable sources of electricity! (Example: An operating 110VAC wall outlet). Richardson Products Incorporated does not recommend the PowerTech Vent Power Center be used outside of its intended use.

If you have any questions please feel free to contact us:

Richardson Products Incorporated.

9408 Gulf Stream Road Frankfort, Illinois 60423

Internet Address: WWW.RICHARDSONPRODUCTS.COM

Email Address: RPI@RICHARDSONPRODUCTS.COM

Introduction

Congratulations on your purchase of the PowerTech Vent Power Center. This product is manufactured from the highest quality electronic components available. If you have purchased any of the option packages available for The PowerTech Vent, please refer to their instruction manuals for further assistance. The PowerTech Vent Power Center is the world's first portable power supply specifically designed to power a ventilator from your wheelchair's batteries. It connects to all electronic power wheelchairs to provide safe, clean, regulated, and stable DC power to your portable ventilator.

Before beginning the installation process please be sure you have received all of the components. Identify all of the components and associated hardware that comprise the PowerTech Vent. Becoming familiar with the associated components will aid in installing the PowerTech Vent Power Center. Remember to carefully follow the installation instructions in this manual.

The Power Center ships with the following components:

1 PowerTech Vent Power Center

Fuse Replacement

PowerTech Vent Power Center Fuse Specifications

Digikey Part Number: F126-nd 8amps@250Volt Fast Acting

Radio Shack Part Number: 270-1014 8amps@250Volt Fast Acting

PowerTech Vent and PowerTech II Battery Cable Fuse Specifications

Digikey Part Number: F955-nd 10amp@250Volt Fast Acting

RPI Part Number: H217010 10amps@250volt Fast Acting

You may order replacement fuses directly from Richardson Products Inc. or feel free to contact the following distributors and arrange for delivery.

DO NOT SUBSTITUTE OTHER MANUFACTURED FUSES.

Vendor Contact Information:

www.digikey.com

www.radioshack.com

Online Fuse Replacement Guide: <http://www.richardsonproducts.com/fuses.html>

Determining where to mount the Power Center.

WARNING: Critical Mounting Considerations

Some wheelchairs have the ability to recline; the PowerTech Vent Power Center should be located in an area in which it cannot be physically damaged by the reclining motion. The Power Center can become quite warm during normal operation. Special care must be taken to ensure the users safety. We recommend using Pulmonetics LTV Series Transport Pack Part #15096-001.

AS WITH ANY POWER SUPPLY, THE POWER CENTER CAN GET QUITE WARM UNDER NORMAL OPERATION. UNDER CERTAIN ELECTRICAL LOADS THE UNIT CAN BECOME AS HOT AS 135 DEGREES FAHRENHEIT. THE UTMOST CARE SHOULD BE EXERCISED IN DETERMINING THE PHYSICAL LOCATION OF THE POWER CENTER ON THE WHEELCHAIR. IT SHOULD BE PHYSICALLY IMPOSSIBLE FOR THE USER'S BODY TO MAKE PHYSICAL CONTACT WITH ANY PORTION OF THE POWER CENTER.

The Power Center must be located in an open air environment or in the recommended Pulmonetics LTV Series Transport Pack Part #15096-001.

Installing the PowerTech Vent Power Center

Only an authorized dealer or qualified service technician should perform this task. There are many different types of power wheelchairs available on the market today. Determine the best location for the Power Center and then take steps to properly mount it to the wheelchairs frame securely. Please note: Finding a proper location is critical, the users body should not be able to physically come in contact with the unit. The PowerTech Vent Power Center requires 24Volts for proper operation. This voltage can be access through the wheelchair's battery charging port.

Every PowerTech Vent Power Center ships with a factory standard XLR plug which can be connected directly to your wheelchair's charging jack. If you wish to purchase an adapter cable to draw power directly from your batteries in effort to free up your wheelchairs charging jack, please order factory part number RPI#060761.

Power Center Testing

CAUTION: This test should be preformed with a ventilator that is not in use.

1. Simply, plug the XLR cable into the wheelchair's charging jack.
2. Verify that the green light located on the front panel of the PowerTech Vent Power Center should illuminate immediately. If this does not occur please check all setup procedures of this manual. Do not proceed until you have successfully completed this initial test.
3. Next Unplug, the PowerCenter.
4. The green light located on the front panel of the PowerTech Vent Power Center should extinguish after a few moments.
5. CAREFULLY INSERT THE OUTPUT PLUG INTO THE VENTILATOR. THE GOLD PINS USED IN THE PLUG ARE VERY EASY TO BEND SO BE VERY CAREFUL.
6. Now, plug the XLR cable into the wheelchair's charging jack again.
7. Verify that the green light located on the front panel of the PowerTech Vent Power Center should illuminate immediately. If this does not occur please check all setup procedures of this manual.
8. Verify, that the external power indicator should light on the ventilator
9. Verify, that the charge status light should also indicate that the vent is charging.
10. Do not proceed until you have successfully completed this initial test.

Power Center Operation & Use

After all electrical connections have been made and the unit has been pre-tested for proper operation. Tidy up any loose wires or cables. Being neat is very important. It will help ensure that the user will not get snagged on a cable or wire while the chair is in operation. Please carefully examine your installation. Verify again that all cables are neatly stored and carefully tied to the frame of the wheelchair.

Patient Use

Call your Respiratory Therapist, Doctor, or other properly trained qualified personnel, for ventilator setup. This step should only be preformed under the direction of a qualified physician and in accordance with all the applicable state laws and regulations. Richardson Products Incorporated does not recommend the PowerTech Vent Power Center to be used outside of its intended use.

RPI'S FREQUENT ASKED QUESTIONS:

Why Use the PowerTech Vent Power Center with your ventilator?

All ventilators need some form of electrical power to operate. Most portable ventilators require 12Volts DC (Direct Current) to operate properly. It is our hope that the information provided here will help clarify many of your common questions. Richardson Products Inc. is the sole manufacturer of the PowerTech Vent Power Center. It is our sincere prayer that our revolutionary new product will have a significant positive impact in the lives of ventilator patients everywhere. The PowerTech Vent Power Center technology will allow ventilator patients to experience an unparalleled level of freedom and independence in the course of their daily life.

What is the PowerTech Vent Power Center and how safe is it to use?

The PowerTech Vent Power Center is a DC to DC converter specifically designed to power a portable ventilator from your power wheelchair's batteries. The PowerTech Vent Power Center provides safe, clean & stable electric power to your portable ventilator by converting your wheelchair's battery power. Wheelchair batteries have an enormous capacity to store energy. Most of this energy is unused, and therefore wasted. The PowerTech Vent Power Center allows you to tap into this vast store of DC power, and allows you to power any portable ventilator available. This eliminates the need for those big space wasting batteries and extra battery packs or medical battery backpacks.

How do I find an approved ventilator?

Visit our website www.richardsonproducts.com under Ventilator Power Supplies.

How will I know if a low power condition occurs?

If a low power condition occurs you will know the moment you engage the joystick of your wheelchair. An audible alarm will sound from the ventilator if a low power condition occurs. This indicates that the batteries need to be recharged.

What happens if my wheelchair batteries completely fail or a power loss occurs?

In the unlikely event of a power failure, all quality ventilators have an emergency 1 hour battery backup reserve. So, if power were to ever fail, the Ventilator will automatically switch over to its internal 1 hour reserve battery.

What happens if I am not anywhere near civilization and I lose battery power?

Please see intended use section by visiting www.richardsonproducts.com under Ventilator Power Supplies.

If the PowerTech Vent Power Center is so safe, why does RPI recommend that I keep my AC wall adapter with me at all times?

We have done everything possible to ensure that the PowerTech Vent Power Center is manufactured from the highest quality electronic components. We think it's the best policy to always keep the AC wall adapter emergency power supply with the user at all times. We also believe that the user should keep the 12Volt DC cigarette lighter adapter with them at all times. This 3 fold system will help eliminate and reduce any chance of a potential power failure to the ventilator.

How quickly can I change from the PowerTech Vent Power Center to an alternate source of power in case of such an emergency?

The patented quick disconnect cable system provides a method so cable swapping can be performed in less than 5 seconds without affecting ventilator operation.

How will using this product save me money in battery costs?

The PowerTech Vent Power Center eliminates the need for ventilator batteries or and additional medical battery power packs. Therefore, the only batteries required are the wheelchair batteries.

What Type of Batteries will work best with the PowerTech Vent Power Center?

Use the largest battery possible. Using large batteries such as Group 27's. Basically you want to use the Largest batteries that will fit on board your wheelchair. Bigger Batteries mean more run time for the chair and ventilator.

Is it a problem to mix batteries of different chemistries, brands or ages?

The answer is a simple one. Never Mix Battery Types! Use the largest gel cell battery available that will fit in your wheelchair. Mixing battery types in a device is not recommended and can significantly increase the potential for leakage and reduced performance. The biggest problem is an imbalance in available energy between the installed batteries. So, always practice smart battery care and replace used batteries with new, fresh batteries of the same brand.

When should I replace my Wheelchair Batteries?

All gel cell and Lead Acid Batteries should be replaced every year with or without the PowerTech Vent Product. On average, deep cycle batteries get about 360 charges. After this, battery performance will deteriorate and the batteries will not hold a full charge. Great care/caution should be taken to keep a fresh set of batteries in a power wheelchair that is intended to operate a PowerTech Vent Power Center.

How long does it take to recharge my wheelchair batteries?

Charge your batteries overnight.

How long do batteries last powering my wheelchair and my ventilator?

There are several factors that impact battery run time. All wheelchairs are not the same, nor are the users that drive them. The most critical factor is the rate at which a device consumes power. Other factors affecting overall battery performance are environmental conditions, device usage patterns (continuous or intermittent) and battery size/chemistry. Most PowerTech Vent users will be able to use the system all day. On average the power center will supply approximately 8hrs-10hrs of continuous use for both the chair & vent used simultaneously. Remember using larger wheelchair batteries means more run time for the chair and ventilator.

Are lead-acid & gel cell batteries considered hazardous waste?

Yes. In the United States and many other countries, lead acid batteries are classified as hazardous waste. So, be sure to take your old batteries to a recycling center in your area.

How should I dispose of batteries?

Most people will not have to worry about replacing their batteries. When your wheelchair goes in for its annual maintenance checkup; The old batteries are usually replaced with new ones. If you decide to have your chair batteries replaced, be sure to take your old batteries to one of the many battery recycling centers located in your area. This will ensure that they are properly disposed of in accordance with all government and state law regulations.

What do I do if a Fuse Blows on the PowerTech Vent Power Center?

On Line Fuse Replacement Guide

<http://www.richardsonproducts.com/fuses.html>

What if I have a question, but can't find the answer in this User Manual?

Just call 1(815).464.3575 ext 201 between the hours 8:00am - 4:00pm central standard time. Our customer service experts can answer all your questions. Or email your questions to rpi@richardsonproducts.com and we'll get back to you within 24 hours.

Disclaimer

Richardson Products Incorporated shall not be held liable or assume any responsibility for damage that may occur to the PowerTech Vent Power Center or to the Ventilator. Therefore it is imperative for the qualified service technician to be sure of the proper installation of the portable ventilator being connected to the PowerTech Vent Power Center. If proper care is taken, the PowerTech Vent Power Center will provide a clean, stable power source for a properly connected portable ventilator.

RICHARDSON PRODUCTS INCORPORATED.

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