

User manual

American English for Australia



Permobil VoltPro

CE

Dear Permobil User

We congratulate you on your choice of off-board battery charger. Our goal is for you to continue to feel satisfied with your choice of both vendor and product.

Before you begin using your new off-board battery charger, it is important that you read and understand the contents of these operating instructions, and in particular the safety instructions.

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1 Introduction

This user manual covers the functions of your off-board battery charger, model numbers 616273 & 616350.

This product is intended for use with Permobil's power wheelchairs. It is not intended for use by children without supervision, including cleaning and maintenance of the product. It is not a toy for children to play with.

Children aged 8 and above must be instructed on the usage of this product and may only use it under supervision.

Please read and follow all instructions and warnings in all manuals supplied with your power wheelchair and its accessories. Incorrect use may both injure the user and damage the wheelchair. In order to reduce these risks, thoroughly read the user manual and all manuals supplied, in particular the safety instructions, their warning texts, and cautionary markings before using these products.

If this product is to be used by persons that lack experience or knowledge of this type of product, or by persons with reduced physical, sensory, or mental capabilities, then these users must either be instructed on the usage of this product or be under supervision while it is being used.

All information, pictures, illustrations and specifications are based upon the product information available at the time these operating instructions were created. Pictures and illustrations used in these operating instructions are representative examples and not intended to be exact depictions of the relevant parts.

We reserve the right to make changes to the product without prior notice.

1.1 Warranty

Product Warranty Information sets forth the conditions of the warranty. For further information about applicable warranties, see <https://permobilus.com/support/warranties/>.

1.2 Standards and regulations

This product fulfills the following requirements:

- Electrically powered wheelchairs, scooters and their chargers – Requirements and test methods (EN 12184).
- Relevant subsections of IEC 60335.
- Relevant subsections of the wheelchair standard series ISO-7176.

1.3 Technical support

In the event of technical problems, contact Permobil.

1.4 Reporting incidents

If an incident occurs, please contact Permobil by phone or e-mail.

1.5 Scrapping and recycling

Contact Permobil for information about scrapping agreements in force.

1.6 Scope of delivery

Included in this delivery is off-board battery charger **A**, charging connector holder **B** and screw **C** to attach the charging connector holder. The plug shown on power cable **D** is an example. The actual plug will correspond to the requirements of your market. Charging connector **E** will connect to your power wheelchair.

1.6.1 The charging connector holder

You can attach charging connector holder **B** to the housing of battery charger **A** with screw **C** using an appropriate tool. Then charging connector **E** can be inserted into charging connector holder **B** between charging sessions.

If you have trouble attaching the charging connector holder, ask your service technician to do this for you.

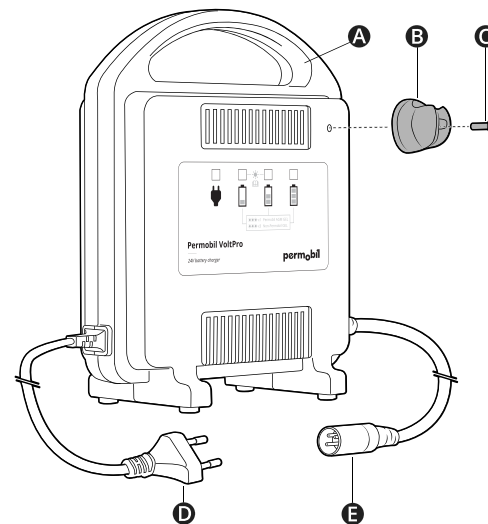


Figure 1. Overview

2 Safety

Important safety instructions. Save these instructions.

2.1 Types of warning signs

The following types of warning signs are used in this manual:



WARNING!

Indicates a hazardous situation which, if not avoided, could result in serious injury or death as well as damage to the product or other property.



CAUTION!

Indicates a hazardous situation which, if not avoided, could result in damage to the product or other property.



IMPORTANT

Indicates important information.

2.2 Warnings and precautions



WARNING!

Explosive gases

The battery can emit explosive gases while charging. Do not expose to flames and sparks. Provide adequate ventilation during charging. Disconnect the charger from the power outlet before connecting or disconnecting the battery. Read the instructions before charging.

**WARNING!****Acid leakage**

Make sure that the battery charger setting matches the type of batteries that are installed in your power wheelchair. If the wrong charger setting is used, the batteries can be exposed to overcharging which increases the risk of overheating. If the batteries overheat, they can leak hydrogen gas and acid.

**WARNING!****High voltage shock**

Do not place the charger in direct sunlight while charging. If you do, this can cause degradation of the plastic housing which increases the risk of breakage. If the plastic breaks, this can expose electric parts and give you a high voltage shock.

**WARNING!****High voltage shock**

Do not allow the power plug to become wet and do not expose the charger to excessive amounts of water. If you do, you can experience a high voltage shock.

**WARNING!****Incompatible with non-rechargeable batteries**

Only charge lead acid rechargeable batteries with your battery charger. If you charge non-rechargeable batteries with your battery charger, the batteries can explode and cause bodily harm.

**WARNING!****Overheated battery charger**

Do not cover the charger. If you do, the charger can become overheated which can damage the charger and/or melt the plastic housing. If the housing becomes damaged the electronics can become exposed and give you a high voltage shock.

**WARNING!****Overheated battery charger**

If the charger becomes overheated, you can get burned.

**WARNING!****Check for damaged parts**

Before each use, check that the battery charger and its cables and contacts are not damaged. Do not use a damaged charger. If you do, you can experience a high voltage shock.

**CAUTION!****Care and maintenance**

Service and other work on the battery charger should be carried out by qualified service technicians. In case of doubt, always contact a qualified service technician or Permobil. Faulty service can cause the function and safety of the product to deteriorate.

Only use spare parts approved or recommended by Permobil. Failure to do so can lead to changes that can impair the function and safety of the product. It can also void the warranty.

**IMPORTANT****Incorrect voltage supply**

Only connect the battery charger to a power outlet with the recommended voltage. If the charger is connected to the incorrect voltage supply, e.g. when travelling between countries, the wheelchair cannot be charged.


**IMPORTANT****Transporting the charger**

Do not transport this off-board battery charger on your power wheelchair. If you do, the vibrations that occur during driving can negatively affect your charger's performance.

2.3 Labels and symbols

Information shown on the warning label:

| | |
|-----------------------|----------------------------------------------------------------------|
| Item number: | The internal Permobil item number including revision number. |
| S/N: | The product's serial number. |
| Input: | The operating voltage that the battery charger needs to function. |
| Output: | The power output produced by the charger. |
| Battery: | The battery capacity and types that this charger is compatible with. |
| 80% ≤ 8 hours: | The charger will recharge the batteries to 80% in 8 hours or less. |
| Permobil Inc.: | The manufacturer's address. |

| | |
|-----------------------------------------------------------------------------------|-------------------------------|
| Symbol on the warning label: | Meaning of the symbol: |
|  | Read the instructions manual |

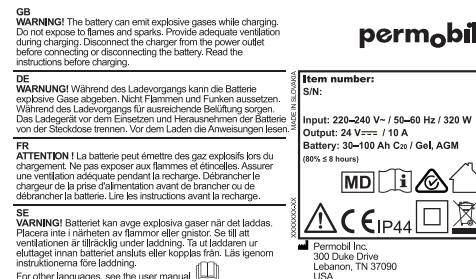










Figure 2. An example of the warning label.

| | |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Caution |
|  | CE certification symbol |
| IP44 | Environmental protection rating IP44 specifically means that this product is protected from tools and small wires > 1 mm and that it is protected from water spray from any direction, i.e. splash-proof. |
|  | Class II electrical equipment |
|  | Recycling symbol |
|  | Medical device symbol |
|  | Read the instructions manual |

| | |
|-----------------------------------------------------------------------------------|--------------------------------------------|
|  | RCM, Australian regulatory compliance mark |
|  | For indoor use only |

The assignment of the charging connector pins must be as shown:

1. Positive
2. Negative
3. Inhibit (tied to negative)

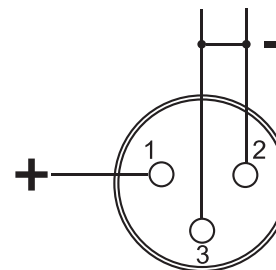


Figure 3. The charging connector pins.

3 Operation

A discharged battery should become fully charged in approximately 12 hours. Results can vary depending on the size of your battery and how much charge is left in your battery when you start charging.

Occasional use of the wheelchair prior to full charge is acceptable if the need is urgent.

3.1 Charging instructions

To charge your power wheelchair:

1. Connect the charging connector of the battery charger to the wheelchair.
2. Connect the power cable from the battery charger to a suitable power outlet.

When charging is complete:

1. Disconnect the battery charger's power cable from the power outlet.
2. Disconnect the charging connector from your wheelchair.

3.2 LED lights

If the battery charger is correctly connected to a power outlet:

- LED **A** will illuminate green.
- LEDs **B**, **C**, and **D** will flash during the battery charger's start-up and then they will turn off until the batteries begin charging. The number of times the LEDs flash indicate the charger setting. If the LEDs flash once, the charger is set for Permobil AGM GEL batteries. If the LEDs flash three times, the charger is set for MK GEL batteries.

While the batteries are charging, the LEDs **B**, **C**, and **D** will illuminate as described below:

- When LED **B** illuminates yellow, it means that the batteries are empty and are being charged.
- When LEDs **B** and **C** illuminate yellow, it means that the batteries are charged more than 50%.
- If LEDs **B** and **C** are flashing yellow, it means that there is an error. See chapter 4 *Troubleshooting*, page 27.
- When LED **D** illuminates green in addition to LEDs **B** and **C** that illuminate yellow, it means that the batteries are fully charged.

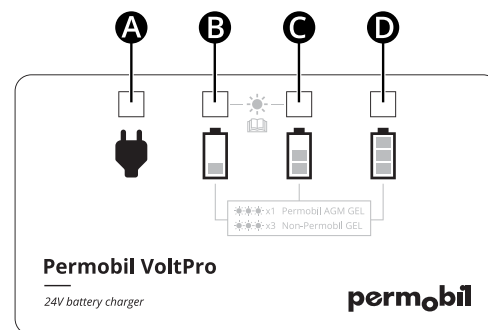


Figure 4. LED lights showing the battery levels.

3.3 Charging tips

Here are some recommendations that will help you reduce charging time, extend the life of your batteries, and maximize your wheelchair's performance:

- Always charge the batteries at room temperature in a well-ventilated area.
- Make sure that the battery charger setting matches the type of batteries that are installed in your power wheelchair.
- If possible, leave your power wheelchair connected to the battery charger and a power outlet after the batteries are fully charged. The automatic functions within the battery charger will ensure that the batteries are properly maintained.

If the wheelchair is used daily or several times per week:

- Regardless of how much the wheelchair has been used each day, you should always fully charge the batteries.
- To estimate the battery charging state, check the levels shown on the control panel's battery charge indicator or use the MyPermobil app. For more information about MyPermobil, go to <http://myp.permobil.com/>

If the wheelchair will be stored for more than two weeks:

- Before placing the power wheelchair in storage, charge the batteries fully and then turn off the wheelchair's circuit breaker. See the wheelchair's user manual for further information.
- At least once every month, fully charge the batteries for optimal maintenance of the batteries.

4 Troubleshooting

| Error indication | Possible cause | Remedy |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| LEDs B and C are flashing. | Error during charging. | Try charging again. If the error persists, contact Permobil. |
| | The battery charger has overheated. | Disconnect the charger and let it cool down. |
| LED A does not illuminate. | Not connected to a power outlet. | Check the power cable. |
| | Main power failure. | Check the mains in your house. |
| | The battery charger has an internal error. | Contact Permobil for repair. |
| Only LED A illuminates while the battery charger is connected to the wheelchair and a power outlet. | The battery charger does not detect the wheelchair's batteries. | Check that the charging connector is properly connected to the wheelchair. |
| | | Check the wheelchair's main circuit breaker. See the wheelchair's user manual for further information. |
| | | Contact Permobil for repair. |

5 Technical specifications

5.1 Electrical specifications

| Electrical specifications | |
|--------------------------------------------|------------------------------------------------------------------------------|
| Output current | 10 A \pm 8% |
| Output voltage | 24 V DC nominal (2x12 V batteries) |
| Mains input nominal voltage range | 220—240 V AC, 50—60 Hz |
| Input voltage tolerance range | 198—264 V AC, 47—63 Hz |
| Maximum output power | 300 W (10 A) |
| Insulation class | Class II |
| Temperature compensation of charge voltage | Yes |
| Efficiency (at 300 W load, input 230 V AC) | \geq 90% |
| Approved battery capacity range | (C ₂₀ -capacity) 30—100 Ah (C ₅ -capacity) 26—85 Ah |
| Dielectric withstanding voltage | 3750 V AC, 50 Hz |
| Approved battery types | Lead acid (Gel / AGM) (24 V) |
| Cooling | Convention cooling / fanless operation |

5.2 Material, dimensions, weight

| Material, dimensions, weight | |
|------------------------------|-------------------|
| Housing material | PC / ABS |
| Housing width | 206 mm (8.11") |
| Housing height | 251 mm (9.88") |
| Housing depth | 109 mm (4.29") |
| Power cable length | 1800 mm (70.87") |
| Charging cable (XLR) length | 2000 mm (78.74") |
| Product weight | 1.4 kg (3.09 lb.) |

5.3 Operating conditions

| Operating conditions | |
|----------------------|------------------------------------|
| Ambient temperature | -10°C to +50°C (+14° F to +122° F) |
| Relative humidity | 10% to 90%, non-condensing |
| Atmospheric pressure | 795 to 1060 hPa |

5.4 Storage and shipping conditions

| Storage and shipping conditions | |
|---------------------------------|--------------------------------------|
| Ambient temperature | -40° C to +65° C (-40° F to +149° F) |
| Relative humidity | 0% to 93%, non-condensing |
| Atmospheric pressure | 795 to 1060 hPa |

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