# UNAcare



## UNAwheel Mini Basic & Active

User Manual

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### Preface

The UNAwheel Mini power add-on is a quality product offering versatile use in everyday life. Its defining characteristics are:

- Compact design
- Compatible with almost all wheelchairs
- Powerful
- Classy

Before using the power add-on, please read this user manual thoroughly. The design is subject to technical alterations without notice.

### Compliance

The UNAwheel and corresponding off-board charger comply with the applicable sections of standard EN 12184 for electric wheelchairs and meet *the currently applicable EC directive for medical devices*, 93/42/EEC. The UNAwheel is a Class I medical device.

The declaration of conformity was therefore created by UNAcare Pte. Ltd. with sole responsibility.

In regard to the climate and splash-proof test, the UNAwheel Mini fulfills the requirements for indoor and outdoor use.

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### 1 Introduction

This user manual is intended for users and owners of the UNAwheel Mini. It contains all the information necessary to safely and successfully use the UNAwheel Mini.

#### 1.1 Intended use

The UNAwheel Mini is intended to be used as a wheelchair power add-on. It should be connected to a wheelchair through either its Basic or Active adapter and used according to the instructions in this manual. Using the UNAwheel Mini in any other way than described in this manual can lead to injury or product damage.

#### 1.2 Warranty & Contact

UNAcare provides two warranty periods upon purchase of the UNAwheel Mini:

- 1 year or 1000 km (600 miles) for the UNAwheel's battery, display and controller.
- 2 years or 2000 km (1200 miles) for the UNAwheel's motor, frame and adapters.

Product damage resulting from unintended use can void the warranty. For more information about the warranty conditions or questions regarding this document, please see our contact information:

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#### 1.3 Icons & Symbols used in this manual

**AWARNING** Risk of serious or deadly injury or severe product damage.

**ACAUTION** Risk of injury or product damage.

**NOTICE** Useful information unrelated to safety.

#### 1.4 Safety

Carefully read the following safety instructions before installing, using, transporting, storing or maintaining the UNAwheel Mini and its adapters.

#### 1.5 **Use**

#### AWARNING

- Before use, check all connections, battery level, brake function of the UNAwheel and wheelchair parking brakes, display, and the central adapter. Never travel when anything listed above is not working correctly.
- Make sure the brakes are working correctly before using the product on a slope.
- Risk of toppling! Your wheelchair with connected UNAwheel represents a threewheeled means of transport. When turning corners, crossing obstacles and travelling perpendicular to slopes a three-wheel vehicle tends to tip over more easily than a four-wheel vehicle. Adjust your driving behaviour and your speed accordingly.
- Turn corners only at low speeds adapted to the driving conditions in order to avoid toppling the wheelchair and UNAwheel.
- Become familiar with the product on level ground before using it on a slope. This prevents potentially dangerous situations such as toppling and collision.
- Never go perpendicular to slopes, cross obstacles only in forward direction.
- Do not drive faster than 6 km/h (4 mph) on public roads.
- Do not use the product without assistance on slopes.
- Do not use product while going downhill or uphill if battery level is less than 50%.
- The product is splash-proof, but not waterproof. Do not use the product during rain and avoid mud and puddles.
- In the (unlikely) event of the battery pack overheating or catching on fire, you
  must ensure that the battery pack does not come into contact with water or other
  liquids. The only suitable extinguishing agent that is recommended by the battery
  manufacturers is sand.
- The wheelchair user must decide in each case whether it is safe to travel the intended trip based on factors such as driving experience and physical strength. Particular importance in or near the following hazardous areas, the navigation of which is left to the judgement and risk of the UNAwheel user:
  - Quay walls, berths and marinas, paths and areas near water, bridges and dykes without railings
  - Narrow footpaths, gradients (e.g. ramps and driveways), narrow paths along slopes, mountain paths

- Narrow and/or steep/inclined paths along main and side roads or near precipices
- Paths covered with leaves, snow or ice
- Ramps and lifting equipment on vehicles.

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- The product's maximum load is 100 kg or 220lbs (incl. a wheelchair).
- Do not use the product at temperatures colder than -5°C (23°F) or warmer than 40°C (104°F).
- The product's driving characteristics can be influenced by electromagnetic fields as emitted by mobile phones or other radiating devices.
- If you have any metal constructions in your spinal cord use product cautiously.
- When the UNAwheel is switched on, never reach into the wheels of your wheelchair
- Distance between user's body and handlebar, when it's in max turned position, should be no less than 5 cm (2").
- Distance between user's legs and adapter, should be no less than 1 cm (1/2").
- Do not use the product on slippery surfaces or on coarse ground such as gravel.
- Traverse obstacles (such as kerbs) in forwards travel only. The maximum permitted obstacle height is 3 cm (1.5 inch). Travel slowly and carefully forwards until the wheels of your UNAwheel come into contact with the obstacle and then carefully travel over the obstacle. You may require the help of another person.
- Switch off the product and apply the brakes when on an elevator, lifting platform, when attach and detach.
- You must not use the UNAwheel on escalators or moving walkways.
- Do not throw or drop the product.
- Never leave the UNAwheel unattended, even if it is switched off.
- Especially when device is not in use, do not expose your UNAwheel to strong sunlight for long periods of time, if possible. This could cause the motor and battery to heat up and in an extreme case, not be able to operate. Plastic parts also age quicker under intense sunlight. In the event of overheating caused by sunlight or excessive use: leave the UNAwheel until it has cooled down.
- If used intensively, the motor and the central tube can heat up. Do not touch these parts (risk of burning). Leave the UNAwheel until it has cooled down. Heat can also cause oil or grease to escape at various points.
- The UNAwheel is only intended for transporting persons with limited mobility and must not be misused, for example by children playing with it or as a drive for transporting mobile goods.

#### NOTICE

- The maximum speed allowed on public roads depends on local traffic regulations.
- Speed above 6 km/h (3.7 mph) may only be driven on private property.
- The product can generate electromagnetic fields that might cause interference in other devices. For this reason, switch off the product when it is not in use.
- If you hear unusual noises or notice unusual vibrations during travel, it is possible that parts of the UNAwheel or wheelchair have become loose. It is also possible that foreign matter has entered the device during travel. In these cases, contact your specialist dealer.

#### 1.6 Storage & Transport

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- Always store and transport the product in its original case.
- Make sure the product's handlebars are removed during transport.
- Store the product charged.
- The temperature during transport and storage must be between -10°C (14°F ) and 40°C (104°F).
- The product must be switched off during transport.

#### 1.7 Charging

#### **A**CAUTION

- Charge the product in a dry environment, at a temperature between 10°C (50°F) and 30°C (86°F).
- Switch off the UNAwheel Mini during charging.
- Never let the battery fully discharge. Damage resulting from a completely discharged battery voids the warranty.
- When the UNAwheel Mini is not used for a longer period of time, its battery must be charged and discharged once in 6 months to maintain the batteries' capacity.
- Avoid dust and dirt from affecting the function of the battery charger. To clean the charger, use a dry piece of cloth.
- Place the charger on its rubber feet on level ground.
- The charger may only be opened by authorized personnel.

#### 1.8 Maintenance

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- Make sure the product is checked and serviced at least once a year by an authorized dealer.
- Ensure all screws are firmly retightened after making any adjustments.

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- Do not disassemble the product in ways other than described in this document.
- Be careful of your fingers while assembling or adjusting the product.
- Switch off the UNAwheel Mini before attaching or detaching it to an adapter.

#### 1.9 Cleaning

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- Never use a water hose or high-pressure cleaning apparatus to clean the product.
- Avoid direct contact of water with the product's motor, battery and any electronics.

#### **A**CAUTION

• Do not use any scouring agents to clean the product.

### 2 The UNAwheel

#### 2.1 **Description**

The UNAwheel Mini is a wheelchair power add-on that provides wheelchair users with an easy-to-use power boost. It is designed for people who are unable to walk but who are able to independently move in a wheelchair. Thanks to its quick and easy adjustment possibilities for standard fittings and its modular design, the UNAwheel Mini can be used by patients with a wide variety of walking impediments.

The UNAwheel Mini is the lightest power add-on on the market. Despite its portable size, it is powerful enough to drive its users around both indoors and outdoors.

The UNAwheel Mini features two adapters, which allow it to be connected to both Basic and Active wheelchair types (figure 1).



Figure 1: The UNAwheel Mini with its Basic adapter (left) and Active adapter (right).

### 2.2 **Technical specifications**

Total weight	5.3 kg (11.7 lbs)
Motor	Electric, 250W DC
Battery	LG 153.6 Wh (air transportation compatible)
Suspension	Dual; spring and soft solid tire
Braking type	Electric
Public roads speed	Max. 6 km/h (3.7 mph)
Private territory speed	Max. 16 km/h (10 mph)
Climbing capability	Max. inclination of 14%
Range*	Max. 15 km (9.3 miles)
Weight of user	Max. 100 kg (220 lbs), incl. a wheelchair

\* Dependent on terrain, temperature, and user weight.

### 3 Installation

#### 3.1 Delivery contents

The UNAwheel Mini is delivered in two packages:

- A travel case containing the UNAwheel Mini and its charger.
- A box containing all parts of the Active Adapter. OR
- A box containing all parts of the Basic Adapter.

#### 3.2 Requirements

To determine which of the two adapters is compatible with your wheelchair, see the following requirements:

Active adapter	Basic adapter
<ul> <li>The wheelchair should have a rigid or foldable metal frame and undetachable leg supports.</li> </ul>	<ul> <li>The basic wheelchair should have swing-away and detachable leg supports.</li> </ul>
<ul> <li>The wheelchair's front tubes should have a vertical straight part of 40 mm (1-1/2") at a height of 270 - 350 mm (10-1/2 - 14 inch) above the ground.</li> </ul>	<ul> <li>The wheelchair's frame should have a horizontal straight part of 50 mm (2") under its cushion (or up to 100 mm (4") to the rear) at a height of 210</li> <li>290 mm (8-1/4" - 11-3/8") above the ground.</li> </ul>
<ul> <li>The width between the centers of front tubes should be 300 - 355 mm (11-7/8" - 14") (up to 435 mm (17-1/8") with optional tubes).*</li> <li>* If the width is less than 300 mm (11-7/8"), the adapter's tubes can be cut to the desired width; min. 180 mm (7").</li> </ul>	<ul> <li>The width between the tubes should be 415 - 458 mm (16-3/8" - 18").*</li> <li>* If the width is less than 415 mm (16-3/8"), the adapter's tubes can be cut to the desired width; min. 180 mm (7").</li> </ul>
<ul> <li>The tubes should be round (Ø35 (1-3/8"), 32 (1-1/4"), 30 (1-1/8"), 25 (1") or 22 (7/8") mm) or oval (Progeo Ego, Quickie Helium).</li> </ul>	<ul> <li>The tubes should be round (Ø25 (1") or 22 (7/8") mm).</li> </ul>
• Total weight with user should be less than 100 kg (220 lbs).	• Total weight with user should be less than 100 kg (220 lbs).

#### 3.3 Active adapter

#### 3.3.1 Contents

The Active Adapter consists of the following parts:

- A Central adapter.
- B Curved tubes (x2).
- C Clamps for 22-30 mm (7/8" 1-1/8") frame (x2).
- D Clamps for 32-35 mm (1-1/4" 1-3/8") and oval frame (x2).
- **E** Spacers for 22 mm (7/8") frame (x2).
- **F** Spacers for 25 mm (1") frame (x2).
- **G** Spacers for 32 mm (1-1/4") frame (x2).
- H Spacers for Quickie Helium frame (x2).
- Spacers for Progeo Ego frame (x4).
- J Optional XL curved tubes (x2).

The following tools are required to install the adapter:

- Ruler.
- 2 mm Allen wrench.
- 3 mm Allen wrench.
- 4 mm Allen wrench.



#### 3.3.2 Attach the clamps

1 Disassemble the clamps by unscrewing their front two bolts. Use a 4 mm Allen wrench.



- 2 Place the two halves of the clamps around the front tubes of the wheelchair's frame. In case of 30 mm (1-1/8") or 35mm (1-3/8") tube diameter use one layer of cloth insulating tape to protect wheelchair frame, for other sizes use rubber spacers.
- 3 Lightly tighten the clamps by screwing on their two front bolts. You should still be able to slide the clamp up and down the tube.



- 4 Place the clamps approx. 33 cm (13") above the ground. Use a ruler.
- 5 Loosen the third bolt of the clamps. This allows you to take out and rotate the clamps' brackets.



- **6** Rotate the brackets to a position of approx. 15<sup>o</sup> relative to the floor. Make sure brackets face strongly to the front.
- 7 Tighten the bolts.



#### 3.3.3 Assemble the central adapter

- 1 Loosen the 4 bolts on the top part of the central adapter. Use a 4 mm Allen wrench.
- 2 Loosen the 4 bolts on the bottom part of the central adapter. Use a 3 mm Allen wrench.



- 3 Measure distance between centers of wheelchair tubes where clamps are mounted. For 300 - 355 mm (11-3/4" - 14") use standard curved tubes, for 355-435 mm (14" - 17-1/8") use optional XL curved tubes.
- 4 Insert the long ends of the curved tubes approx. 5 cm into the central adapter.



5 Lightly tighten all 8 bolts of the central adapter.

#### 3.3.4 Attach the central adapter

- 1 The following steps should be performed with the user seating in the wheelchair.
- 2 Insert the short ends of the central adapter's tubes into the clamp's brackets 1.
- 3 Adjust the width of the assembly if necessary (2).
- 4 Use the clamps' handles to tighten the brackets and secure the central adapter in place (3).



5 Position the hook of the central adapter 20.5 cm (8") above the ground, at a vertical angle of approx. 10°. Adjust the height by sliding the hook up or down in the central adapter or by clamps up or down the frame.



- **6** Tighten the two front bolts of each clamp. Use a 4 mm Allen wrench.
- 7 Tighten all 8 bolts of the central adapter.
- 8 Make sure adaper may be easily inserted and taken out of clamps by user himself.

#### 3.4 Basic adapter

#### 3.4.1 Contents

The Basic Adapter consists of the following parts:

- A Central adapter.
- B Clamps (x2).
- **C** Spacers for 22 mm (7/8") frame (x2).

The following tools are required to install the adapter:

- Ruler
- 3 mm Allen wrench.
- 5 mm Allen wrench.



#### 3.4.2 Attach the clamps

1 Loosen the two bolts of the clamps. Use a 5 mm Allen wrench.



- 2 Place the clamps on the bottom tube on the side of the wheelchair's frame. Position it about 10 cm (4") behind the front edge of the cushion. In case of 25mm (1") tube diameter use one layer of cloth insulating tape to protect wheelchair frame, for 22 mm (7/8") use rubber spacers.
- **3** Secure the clamps by tightening their two bolts.



#### 3.4.3 Attach the central adapter

- 1 Insert the central adapter into the clamps (1). Insert the two pins to secure it (2).
- 2 Position the central adapter's hook to be 27 cm (10-5/8") above the ground, at a vertical angle of approx. 5°. Use a ruler.
- 3 Tighten the bolts of the central adapter. Use a 3 and 5 mm Allen wrench.



### 4 Attach & Detach the UNAwheel Mini

Before attaching or detaching the UNAwheel Mini to its adapter, carefully read the safety instructions.

#### 4.1 Active Adapter

#### 4.1.1 Attach the UNAwheel Mini

- 1 When seated in the wheelchair, hold the UNAwheel Mini by its handlebar and pull it towards the wheelchair 1.
- 2 Insert the top cylinder of the UNAwheel's connector into the top hook of the central adapter (2).



3 Push the UNAwheel's handlebar forward. The connector will snap into place.



#### NOTICE

• After attaching the UNAwheel Mini, the front wheels of the wheelchair should be raised 20 to 40 mm (3/4" - 2") above the ground. If this is not the case, adjust the height of the central adapter accordingly.

#### 4.1.2 Detach the UNAwheel Mini

1 Push unit under the display a little and simultaneously press the handle on the central adapter forward.



2 Pull the handlebar towards you to detach the UNAwheel (1). Push the handlebar forwards to remove the UNAwheel (2).



#### 4.1.3 **Detach the central adapter**

- 1 Rotate the handles of the clamps to loosen them.
- 2 Remove the central adapter from the clamps.

#### 4.2 Basic Adapter

#### 4.2.1 Attach the UNAwheel Mini

- 1 When seated in the wheelchair, hold the UNAwheel Mini by its central tube under the display and slide its wheel underneath the wheelchair.
- 2 Insert the bottom cylinder of the UNAwheel's connector into the bottom hook of the central adapter.



3 Pull the UNAwheel's handlebar up. The connector will snap into place.



#### NOTICE

After attaching the UNAwheel Mini, the front wheels of the wheelchair should be raised 10 to 20 mm (3/8" - 3/4") above the ground. If this is not the case, adjust the height of the central adapter accordingly.

#### 4.2.2 Detach the UNAwheel Mini

1 Push the handle on the central adapter backward.



2 Push the UNAwheel's handlebar away from the wheelchair to detach the UNAwheel.

#### 4.2.3 **Detach the central adapter**

1 Push the buttons of the pins (1) and pull them out of the clamps (2).



2 Remove the central adapter.

### 5 Use the UNAwheel Mini

Before using the UNAwheel Mini, carefully read the safety instructions.

#### 5.1 Controls & Display

The UNAwheel Mini's controls and display can be found at the base of its handlebars.



- A Display
- B Throttle joystick
- C Brake joystick
- D Power/mode button
- E Light button
- **F** Speed mode forwards button
- G Speed mode backwards button

#### NOTICE

• The throttle and the brake joystick work the same way; the harder you push, the larger the effect.

#### 5.2 **Driving**

Use the UNAwheel Mini's controls in the following ways:

- Press the **Power/mode** button to power on the UNAwheel Mini.
- Repeatedly press the **Power/mode** button to select a mode (trip distance, total distance).
- Press the **Speed mode** ▲ or **Speed mode** buttons to select a speed mode.
  - 1 Slow backwards (max. 6 km/h or 3.7 mph)
  - 2 Public roads forwards (max. 6 km/h or 3.7 mph)
  - 3 Private territory forwards (max. 16 km/h or 10 mph)
- Push the **Throttle** joystick to start driving.
- Push the **Brake** joystick to slow down.
- Watch the display to check your speed and the battery level.
- Press the **Light** button to turn the headlight on or off.
- Hold the **Power/mode** button for 5 seconds to power off the UNAwheel Mini.

#### 5.3 Charging

When using the UNAwheel Mini on a daily basis, charge its battery when the display shows one or two bars of battery level. Only charge the UNAwheel Mini with the provided charger. Carefully read the safety instructions before charging your device.

- A Battery cable
- B On / Off lamp and charging indicator
- C Mains cable



#### 5.4 Driver training

- The safety and well-being of the driver is the top priority. To ensure this, it is essential to understand the UNAwheel's driving characteristics. Your UNAcare dealer or agent will help you in this regard with a complimentary device training session.
- Observe the information, safety instructions and hazard information from your wheelchair manufacturer. This also applies to driving with the UNAwheel.
- Never push throttle when starting up the device. This may result in the UNAwheel moving uncontrollably (risk of accident).
- Start your first driving attempts with caution and start your driving training on level ground.
- Take your driver training in areas without obstacles.
- Always adapt your speed to external conditions so that you are able to drive around any obstacles that suddenly appear or to stop your wheelchair, for example.
- Push throttle gently and without sudden movements. Avoid suddenly applying the throttle particularly during potentially hazardous situations that you wish to avoid. Brake the UNAwheel carefully in advance until it stops.
- When you release the throttle, the wheel of the UNAwheel automatically switches to freewheeling and the wheel is not braked! Brake using braking lever or push rims of the wheelchair.
- If the preset maximum speed is exceeded, the wheel automatically switches to freewheeling.
- Before using the UNAwheel to travel on a slope, practice operating the device on level ground.
- Always travel on slopes with a fully charged battery pack.
- You should exercise particular caution when travelling on slopes of any kind.
- Travel on slopes at reduced speed so that you are able to avoid any obstacles that appear suddenly or stop the UNAwheel in time. Never travel on slopes in freewheeling mode.
- Never travel across steep slopes or similar conditions. Unintentionally shifting the centre of gravity could result in the wheelchair tipping over on its side.
- The UNAwheel can traverse obstacles such as kerbs with a maximum height of 3 centimetres.
- Obstacles with a height of more than 3 cm (1-1/8") must not be traversed as there is a risk of device damage, falling and injury.
- Check the air pressure of the wheels of your wheelchair, this influence the driving performance and the range of the UNAwheel.

### 6 Maintenance

Service and repairs on the UNAwheel Mini may only be carried out by authorized dealers. Should any problems arise, please contact your power add-on supplier. Carefully read the safety instructions before carrying out any maintenance on your device.

#### 6.1 Inspection

The UNAwheel Mini must be inspected before every use. The checks listed in the following table must be carried out by the user at the indicated intervals.

Tyre condition	Every use
Battery level	Every use
Brake function	Every use
Error messages on the display	Every use
Throttle lever functionality	Every use
Brake lever functionality	Every use
Fixation of the central adapter	Every use
Fixation of the adapter on the wheelchair	Weekly
Charger functionality	Monthly

#### NOTICE

- Failure to carry out these inspections may lead to problems that void the warranty.
- Tyre change or repair can be carried out by your authorized dealer.
- If you have any problems carrying out this maintenance, please contact your authorized dealer.

#### 6.2 Cleaning

Use a damp cloth and mild cleaning agent to clean the UNAwheel's joysticks, display and charger. Use a damp plastic brush to clean the UNAwheel's adapters and wheel.

### 7 **Disposal**



This device, its battery pack and accessories are durable products. They might, however, contain substances that are hazardous to the environment, if the parts are disposed of in locations (e.g. landfills) that are not destined for the disposal of such materials according to the applicable statutory regulations.

The product is labelled in accordance with European Directive 2002/96/EC with a "crossed-out rubbish bin" symbol, reminding you that it must be recycled. Please protect the environment and return the product at the end of its service life to your local recycling centre.

As this product is not covered by the regulations of the WEEE Directive in all European countries, please inform yourself of the applicable waste disposal regulations in your country. Alternatively, return the UNAwheel to your authorised specialist dealer or UNAcare for proper and environmentally safe disposal.

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