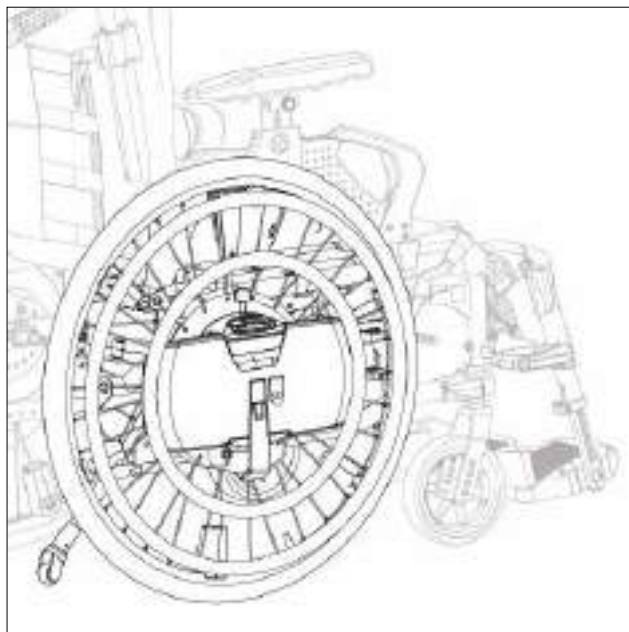


Power assist



USER MANUAL

EN

WheelDrive

Generation 2019

Empulse

9008027G

English

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1 Introduction

Congratulations for choosing Sunrise Medical for the power assist of your manual wheelchair. The high-quality mobility products distributed by Sunrise Medical are designed to enhance independence and make your everyday life easier.

1.1 This user manual

This user manual will help you to use and maintain your WheelDrive Power assist safely.

Read this entire user manual carefully before using the product.

If you are visually impaired, this document can be viewed in PDF format at www.SunriseMedical.eu or alternatively is available on request in large text.

1.2 For further information

Please contact your local, authorised Sunrise Medical dealer if you have any questions regarding the use, maintenance or safety of your wheelchair. In case there is no authorised dealer in your area or you have any questions, contact Sunrise Medical either in writing or by telephone.

For information about product safety notices and product recalls, go to www.SunriseMedical.eu

1.3 Symbols used in this manual

Note!

Pointing out possible problems to the user.

⚠ Caution!

Advice for the user to prevent damage to the product.

⚠ Warning!

Warnings for the user to prevent personal injury.

Not following these instructions may result in physical injury, damage to the product or damage to the environment!

Symbols in illustrations

Each illustration includes icons and numbering to indicate what needs to be done and in which order.



Step 1, 2 etc.

An arrow, as part of an illustration, indicates that the component in question moves or needs to be moved in the direction indicated.

2 Safety

Please note all safety instructions before starting to use the power assist.

⚠ Warning!

Always follow the instructions given next to the warning symbols! Not following these instructions may result in physical injury, damage to the wheelchair or damage to the environment. Where possible, the warnings have been placed in the applicable paragraphs.

2.1 Temperature

⚠ Warning!

Avoid physical contact with the motors in the power assist system. The motors are continuously in motion during use and can become warm. After use, the motors will cool down slowly. Physical contact may cause burns.

⚠ Caution!

Ensure that the power assist is not exposed to direct sunlight for extended periods of time, because this can increase surface temperatures significantly.

2.2 Electromagnetic radiation

The power assist has been tested for compliance with the relevant requirements regarding electromagnetic radiation (EMC requirements). This implies the power assist can be used under normal circumstances.

Note!

It cannot be excluded that electromagnetic radiation emanating from mobile telephones, medical apparatus and other sources, may have an influence on the power assist.

It cannot be excluded that the power assist will interfere with the electromagnetic fields of, for example, shop doors, burglar alarm systems and/or garage door openers.

⚠ Caution!

Do not use the power assist near strong electrical interference fields, such as products with very strong magnets.

In case you experience strange behaviour in a particular environment, switch off your power assist or leave that environment as soon as possible. If the strange behaviour remains, please contact your dealer.

2.3 Moving parts

⚠ Warning!

The power assist has moving and rotating parts. Be careful: contact with moving parts may result in serious physical injury or damage to the power assist.

2.4 Entrapment points

Possible entrapment points when the battery pack is removed.

⚠ Caution!

If the battery pack is removed some openings occur, see figure 1. Do not put fingers or any other objects in the opening to prevent finger entrapment and possible damage to the power assist.

2.5 General safety guidelines and instructions

Sunrise Medical accepts no liability whatsoever for damage or injury caused by failure to (strictly) adhere to the safety guidelines and instructions or else due to carelessness during the use, service and cleaning of the power assist. Depending on the specific use circumstances, additional safety instructions may be required. Please contact your dealer immediately if you observe a potential danger during the use of the product.

The power assist is suitable for indoor and outdoor use (EN 12184 class B).

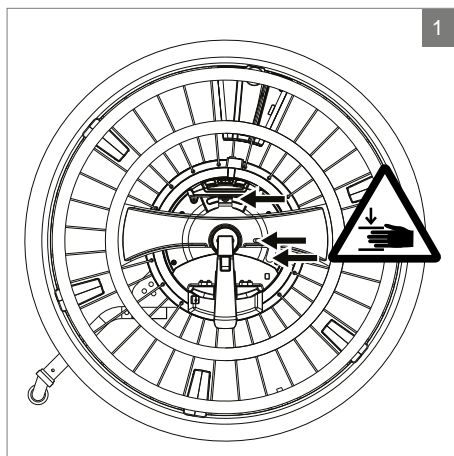
⚠ Warning!

Only use the power assist as intended and as prescribed in this manual. Do not adjust or change the product if not promptly described. Do not use parts or add-ons which are not clearly marked as compatible with the power assist.

To avoid accidents and other problems, it is very important to pay attention to the safety instructions as described in the user manual of the manual wheelchair which the power assist will be used with.

The power assist should only be used for transport of users with a maximum user weight of 130 kg.

Only use the power assist in situations you would normally use a manual wheelchair as well. With the power switched off, the power assist behaves just like a manual wheelchair.



In order to have enough battery capacity it is advised to charge the batteries, when the power assist is not being used.

It is advised to mount a smoke detector in the charging area.

Disconnect batteries in case of longer storage without usage.

When not using the power assist always engage the parking brake of your wheelchair.

Do not use the power assist in combination with a wheelchair puller or hand bike. The power assist is not designed for the speeds of these applications.

It is advised never to use the power assist on a slope with an angle of more than 6°, above this angle the power assist can be insufficient.

While driving on a steep slope (more than 3°) and taking obstacles it is advised to use the large rim. In case of emergency you can propel and brake manually.

In case of possible technical malfunctioning, please contact your dealer.

⚠ Caution!

Never open the batteries or electronic housings.

Do not connect any other equipment to the power assist.

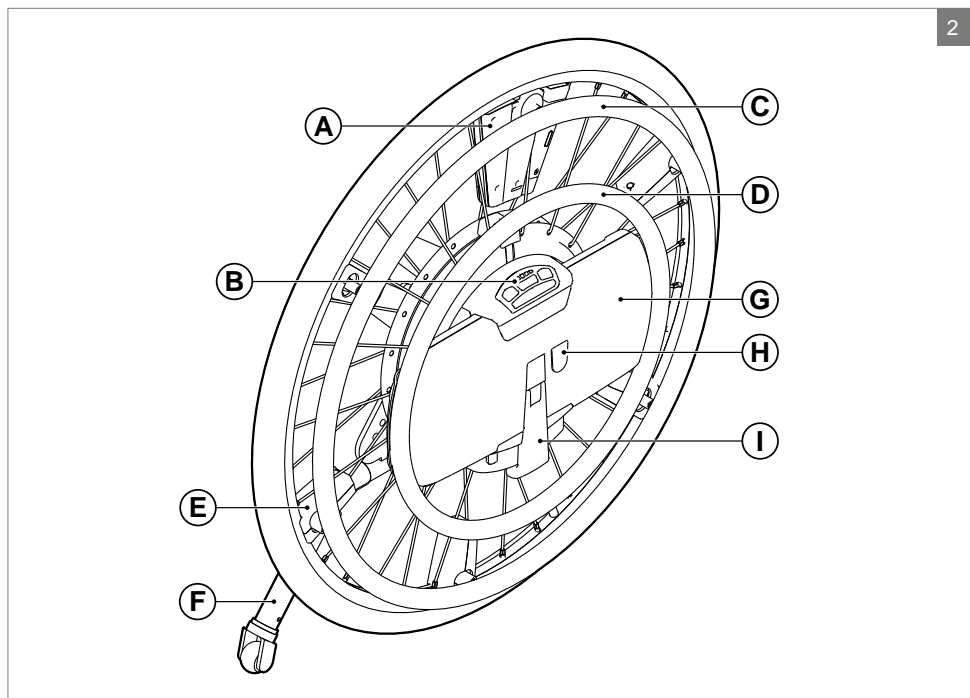
Do not drive faster than 6 km/h with the power assist without connected batteries to prevent potential damage to the system.

Driving through deep puddles is not considered as normal use and may cause damage to the motors and other electronics.

Never clean the power assist using a hose or pressure washer.

It is best to charge the batteries daily.

The power assist should be cleaned with a damp cloth only.



3 Product description

The power assist is a unique product giving manual wheelchair users additional power assistance, by just using one of the rims on the power assist wheels. The large Assist rim can be used as a conventional wheelchair push rim to manually propel the wheel. In case the power assist is switched on, the motor of the power assist will give power assistance while driving. The amount of support that is provided is dependent on the selected profile and the force applied to the rim. The smaller Drive rim provides continuous support and can be used to move forwards or backwards – in this case no manual propulsion is required. The power assist is very intuitive to use, but some practise and training is required for safe usage.

3.1 Main parts

The main parts of the power assist are illustrated (figure 2).

- A. Sensor box
- B. Profile buttons
- C. Assist rim
- D. Drive rim
- E. Support blocks
- F. Anti-tip
- G. Battery pack
- H. Charge connector
- I. Wheel handle

3.2 The user

The power assist is developed for users of manual wheelchairs with a fluctuating or decreasing condition and/or strength in body or limbs.

The user must be able to estimate and correct the results of actions taken when operating the wheelchair. The user of the power assist should have experience with a manual wheelchair and must be able to use, drive, brake and handle a manual wheelchair without support.

Both left and right wheels work independently from each other. The power assist is not intended for one hand operation.

The user must be familiar with the contents of the user manual before driving the wheelchair. In addition, the user of the wheelchair must have been given thorough instruction in using the wheelchair by a qualified specialist before he or she participates in traffic. The first sessions in the wheelchair with the power assist should be held under the supervision of a trainer/advisor. Please contact your dealer in case of questions.

⚠ Warning!

The user of the power assist is responsible for complying with the applicable local safety regulations and guidelines. Contact your dealer for information about regulations applicable to your usage conditions.

Driving with the power assist under the influence of medicines that can affect your ability to drive is not permitted.

Driving with the power assist without sufficient eyesight is not permitted.

No more than one person is to be seated in a wheelchair with the power assist at a time.

Do not allow young children to drive unsupervised in a wheelchair with the power assist.

3.3 The wheelchair

The power assist is compatible with most common wheelchair frames in the market. The installation can be done with a number of standard parts, supplied with the power assist wheels. For each wheelchair frame model a different setting is needed. Once a wheel is set for a certain frame, it cannot be put directly onto another frame; an adjustment to the settings is required.

3.4 User environment

This power assist has been designed for both indoor and outdoor use (and as such is classified as a class B system according EN12184 (2014)). When driving the wheelchair with power assist outdoors, it is advised to drive on paved roads, pavements, footpaths and bicycle paths. Adjust the speed to suit the environment.

⚠ Caution!

Do not use the power assist when temperatures are below -10°C or above +40°C.

Only drive on firm surfaces. Avoid loose gravel, sand, mud, snow, ice or deep puddles.

Drive carefully on roads which are slippery as a result of rain, ice or snow!

Clean the system after driving in wet weather by drying the product with a cloth or towel.

Do not drive through puddles of water – the power assist is so called splashing water proof (normal outdoor rain conditions). Never submerge any part containing electronics in liquids.

Prevent the power assist from coming into contact with sea water: sea water can cause corrosion and may damage the system.

Prevent the power assist from coming into contact with sand: sand can come into the moving parts of the system, causing unnecessary fast wear of these parts

⚠ Warning!

It is advised to select a low driving profile when driving indoors, on pavements and in pedestrian areas.

Take extra care when driving at higher speeds.

Do not drive off obstacles higher than 50 mm.

Overcome obstacles only by driving backwards, if possible.

Do not attach any weights to the power assist system or wheelchair frame without the approval of a qualified specialist. This may negatively affect the stability of the product.

It is advised to use fully charged batteries when driving up a slope (less charged batteries can supply less power than fully charged batteries). For taking slopes at least 2 LEDs of the battery indicator should be on.

It is advised to use the Assist rim when driving up or down a slope. Before you use the Drive rim on slopes, make sure you are familiar with the use of the Drive rim e.g. by learning on slight slopes. In case you want to use the Drive rim on slopes, make sure that you make the correct power setting before you start to take the slope.

Beware that in difficult situations you should be able to take over to the Assist rims.

Take special care when driving down slopes of any kind. Adjust your speed to maintain safe control.

When descending with Assist rims, the system will reach and keep a maximum speed of ~15 km/h. Exceeding this speed is not possible.

This speed is settable by an authorized person.

Beware that each power assist wheel is a few cm wider than a standard manual wheel; be careful taking narrow doors and hallways.

3.5 Software adjustment options

The electronics of the power assist are programmed to an average usage/driving profile – several parameters are available that can be adjusted to influence the driving behaviour. Please contact your dealer about possible adjustments.

⚠ Warning!

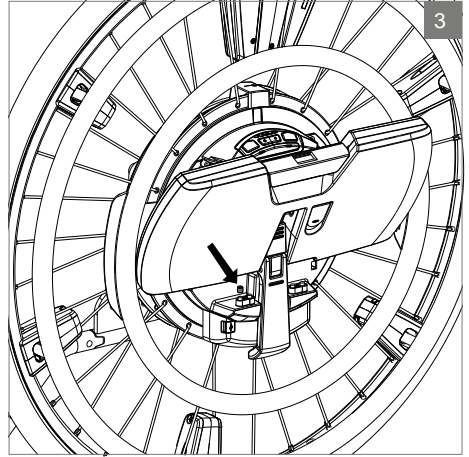
Only an authorized person is allowed to make any adjustments and program the power assist.

Incorrect programming can lead to unsafe situations.

4 Use of the power assist

4.1 First use

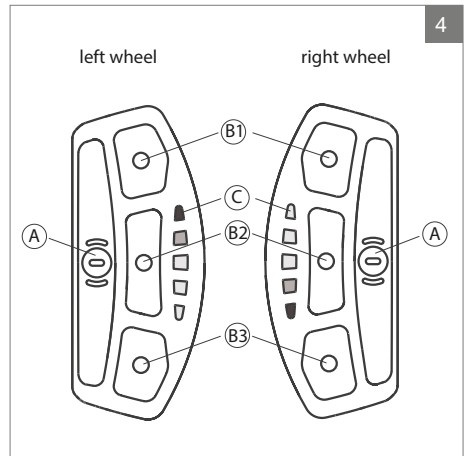
One battery pack contact is protected with a small rubber part to prevent discharge. Take out the battery pack and remove this part before activating the power assist (figure 3).



4.2 Activating the power assist

In order to use the power assist, both wheels (left and right) should be turned on (figure 4)

- A. Power On/Off button
- B. 3 Profile buttons, button 1 is the first button pointing to the front of the wheelchair
- C. Battery indicator




A. Power On/Off button

Switch the power assist on by pushing the Power On/Off button on the user interface. You will hear one short beep. Switch it off again by pushing the Power On/Off button a second time. You will hear one longer beep.

B. Profile buttons front, middle and rear

The power assist has 3 driving profiles: I, II, III, Each profile and support level -with specific driving characteristics- can be selected by pushing the appropriate button on the user interface. When choosing profile I, the orange LED below button B1 will light up. When choosing profile II, the orange LED's below button B1 and B2 will light up. When choosing profile III, all 3 LED's will light up.

An appropriate driving profile and speed should be chosen depending on the user's needs and safety.

Driving profile	Signal 	Recommended use area	Energy consumption
I=front (B1)	One beep	Indoors, many obstacles	Low
II=middle (B2)	Two beeps	Indoors, limited number of obstacles	Medium
III=rear (B3)	Three beeps	Outdoor areas and inclines	High

Note!

Selection of the same driving profile on both power assist wheels normally gives the best driving experience.

When turning on the power assist the driving profile will start at profile I.

C. Battery indicator (see next paragraph)

4.3 Charging the batteries

Only use the supplied battery chargers to charge the battery packs (figure 5). The battery pack include electronics to control the charging process – it will stop the charging process when the batteries are fully charged; overloading is not possible.

Each wheel has a separate battery. Both battery packs need to be charged separately. Both chargers can be used for both battery packs. Batteries can be charged when they are mounted on the power assist. Batteries can also be taken off for charging.

To prevent you from getting into a situation where no power assist is available, it is strongly recommended to charge both batteries every day. Each battery pack has a charge connector with a black cover. Open the cover and insert the plug with the flat side to the right (figure 6).

In case the power assist is switched ON, the charging level of the main battery is indicated via the battery indication LEDs on the user interface (figure 7).

Please note that batteries can discharge differently (max 10%).

⚠ Warning!

In case all battery indication LEDs are off when the power assist is turned on, this might be due to a system error. Please contact your dealer.

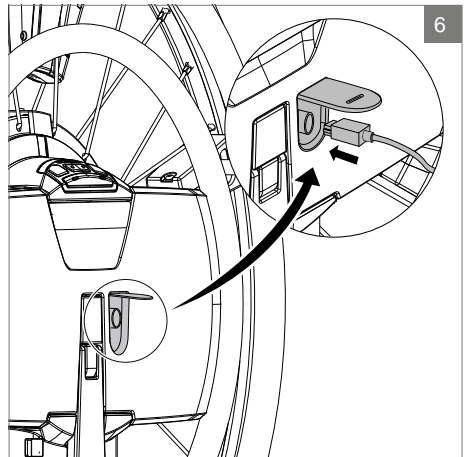
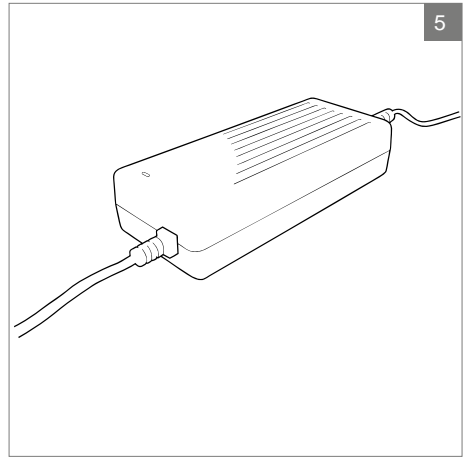
During charging the LED on the charger will turn red.

When the battery is fully charged, the LED indicator of the charger will turn green. Now you can disconnect the plug. Please pull at the plug itself, not the cord.

After disconnecting the plug, close the black connector cover to prevent water and dirt coming in.

The charger plug is not properly connected when the red light on the charger flashes.

Remove the plug from the battery and reinsert it. If the light keeps flashing please contact your dealer.



Battery indication	Filled is on White is off
80% - 100% full	5 LEDs on
60% - 80% full	4 LEDs on
40% - 60% full	3 LEDs on
20% - 40% full	2 LEDs on
10% - 20% full Almost empty	1 LED blinking slowly Beeping 2 times
Less than 10% Auto power off forthcoming	1 LED blinking quickly Beeping 2 times

During charging, the LEDs that are not ON, indicate the charge status by lighting the remaining LED's stepwise as shown in figure 8.

⚠ Caution!

Only use an original battery charger, distributed by the manufacturer, to prevent dangerous situations.

Never subject the charger to humidity – only use it indoors.

Never charge the battery packs at temperatures below 10°C or above 30°C.

Do not store batteries at temperatures higher than 30°C (this will reduce the service life significantly).

Charge the battery pack completely before long-term storage, and check the charge level every 3 months. Even not-used batteries will discharge slowly; prevent the batteries to become completely empty (deep discharge of the batteries will damage the batteries).

Remove the charger when batteries are completely charged.

Never pull the cable to remove the battery charger from the mains or charge connector.

Always attach the black connector cover if no battery charger is connected, to prevent water and dirt coming in.








⚠ Warning!

In case the batteries are completely empty the power assist will shut down automatically to prevent deep-discharge (and damaging) of the batteries. The wheels continue to run, but power assistance is not available anymore.

During charging the batteries of the power assist, no power assistance is available.

Do not drive with the power assist during charging the batteries if they are attached to the wheels.

Check your battery levels before starting a ride.

Step 1	 8
Step 2	
Step 3	
Step 4	
Step 5	
Step 1	
Etc.	

4.4 Using the batteries

Removing the battery pack

Place your fingers under the handle and pull it upward. This will unlock the battery pack (figure 9).

Placing the battery pack

Place your fingers under the handle and position the battery pack to the contacts of the electronic housing. Push the battery pack against the wheel until the battery pack audibly and perceptibly clicks into the electronics housing. Check if the battery is fully fixed in the electronics housing (figure 10).

⚠ Warning!

Make sure the wheel hub and battery pack are clean and dry when inserting the battery pack!

With the battery pack removed, some openings are visible - do not push your fingers in any openings to prevent possible injuries or damages.

4.5 Driving - using the rims

Assist rim (A in figure 11)

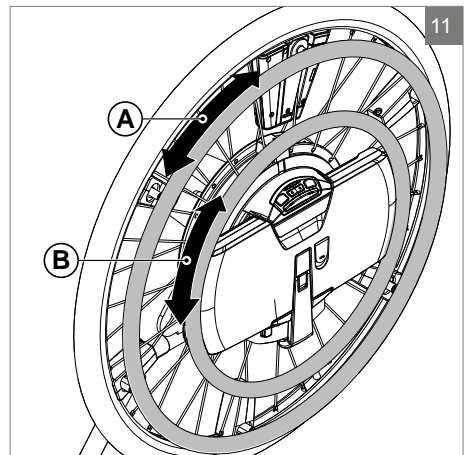
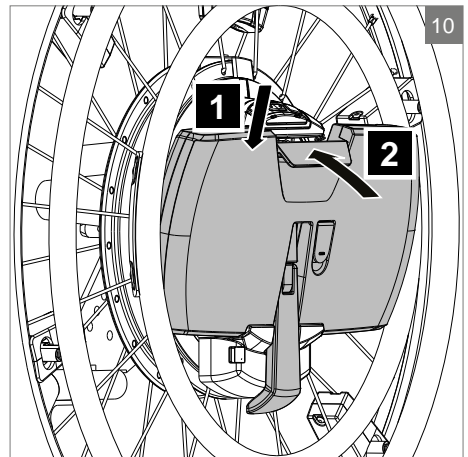
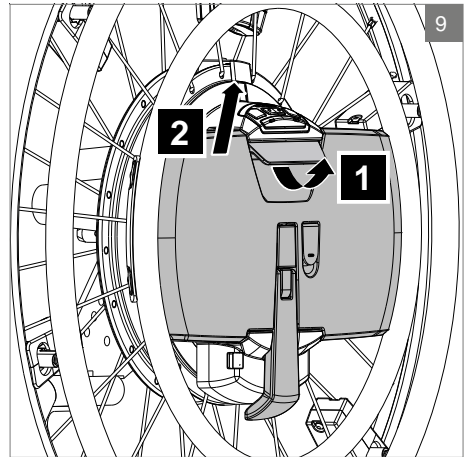
This rim works the same as the rims on a manual wheelchair. By using these Assist rims the motor supports the forward and backward movement. The support level is dependent on the selected profile and force applied to the rim.

Assist rim usage

When applying more force on the Assist rims, the system will give more support. When less force is applied on the Assist rim, the system will give less support. In this way the required speed can be controlled.

Braking with the Assist rim

Braking with the Assist rim is comparable with braking with a manual wheelchair. When the system is on, the power assist offers additional motor support when moving the rim backwards. The user is part of the braking system.



⚠ Warning!

While using the Drive rim, beware not to put your fingers too far inwards between the spokes of the wheel. Pay attention with clothes that can get caught in the spokes.

If you do not feel secure, it is advised to use power assist spoke protection. Only use the original spoke guard that is developed for the WheelDrive.

Before driving, be sure the tyres are sufficiently inflated (up to 6-10 bar).

Before driving, be sure the batteries are sufficiently charged.

Always use the Drive rims in a smooth and uniform way to get the best driving experience.

⚠ Warning!

The Assist rim is connected to a sensor. Do not use the Assist rim to lean on, for making a transfer from or to your wheelchair.

Drive rim (B in figure 11)

This rim works differently than the Assist rim. When using these rims the motor will give continuous support. As long as the Drive rim is pushed forward, the wheelchair will move forward. If the Drive rim is pushed backwards, the wheelchair will move backwards. When the Drive rim is released, the motor support will stop. The wheelchair will not immediately stop, but gradually brake on the motor. If the system is turned off, the Drive rims have no function.

Drive rim usage

The Drive rim can be pushed forward and backwards until an end position; in this position the speed is maximum. If the Drive rim is carefully pushed forward, the speed increases according to how far the rim is pushed forward.

Braking with the Drive rim

By pushing the rim carefully backwards, the speed decreases. This way you can break with the Drive rim. By moving the rim even more backwards, the wheelchair will drive backwards. The acceleration and maximum speed differs per driving profile.

The system automatically stops accelerating when the maximum speed setting is reached, and tries to keep the maximum speed constant at this value.

4.6 Obstacles and slopes

Take extra care when taking obstacles (such as thresholds, curbs and narrow doors and hallways) and when driving on slopes. Only use the power assist in situations where you would feel safe with a normal manual wheelchair without Power assist. Make sure that you first exercise with both rims to get familiar with their functions before taking obstacles and slopes.

It is advised to use the Assist rim for taking obstacles and slopes. This way you have the best control for driving and braking.

Taking obstacles

The power assist is certified for taking obstacles up to 50 mm. Obstacles higher than 25% of the front wheel diameter should be taken by backward driving. Low obstacles can be taken by forward driving. The size and construction of the front wheels of your wheelchair are of great influence on taking obstacles. Drive carefully towards the obstacle with the front wheels. Select the appropriate profile and then take a short run up (15-20 cm) to climb the obstacle. Make sure the wheelchair does not keep accelerating after climbing an obstacle.

Warning!

Do not drive off/over of high obstacles (higher than 50 mm).

Obstacles higher than 25% of the front wheel diameter should be taken by backward driving.

Driving down a curb

1. Choose the place where the curb is at its lowest.
2. Drive straight down the curb with your front wheels at a right angle to it.
3. Propel the Assist rim slowly forward. Drive down the curb carefully and as slowly as possible without changing direction.

Pushing the wheelchair to take an obstacle

An obstacle can be taken by an attendant pushing the wheelchair. Put the power assist off before pushing.

Driving up a curb

1. Choose the place where the curb is at its lowest.
2. Drive straight up to the curb at a right angle to it (15-20 cm in front of the curb).
3. Propel the Assist rim forward. Drive up the curb without changing direction.
4. Maintain speed until all of the wheels are on the sidewalk. If mounting the sidewalk is not possible, find a place where the curb is lower.

Driving on slopes

⚠ Warning!

When driving up or down a slope always use an anti-tip device.

It is advised to use the Assist rims when driving up/down a slope, since you have direct control for driving and braking.

It is advised to use fully charged batteries when driving up a slope (less charged batteries can supply less power than fully charged batteries). For taking slopes at least 2 LEDs of the battery indicator should be on.

Only drive on slopes where you would feel comfortable doing so (even) with a manual wheelchair without Power assist.

Avoid sudden, jerky movements; always drive carefully and with the highest concentration.

Avoid making emergency stops on a slope.

For your safety: avoid changing direction on a slope whenever possible.

Do not drive on slopes with loose gravel or a sandy surface, as one of the driving wheels could slip/spin.

If you notice a significant decrease in speed when driving up a slope, try to take a route which is less steep.

Take special care when driving down slopes of any kind. Adjust your speed to maintain safe control.

The stopping distance on slopes can be significantly greater than on level grounds.

When descending without using the rims, the motor can start generating energy and charging the battery when braking on the motor is activated.

When descending with a too high speed, the power assist can shut down automatically due to over-voltage. The wheels continue to run, but power assistance is not available anymore.

Driving up slope with Assist rim

1. Propel the Assist rim slowly forward.
2. When releasing the Assist rim, the motor brakes and prevents rolling back.
3. The Assist rim can now be propelled forward again.
4. Repeat steps 1-3 until the complete slope is taken.

⚠ Warning!

When pushing back yourself e.g. from a table the brake function as described above might get active: To avoid this always push back only with a very low speed.

Driving down slope with Assist rim

When driving down slope with the Assist rims and you want to slow down, you can push back the Assist rims softly. The motor will brake and keep the speed constant.

⚠ Warning!

When the absolute speed limit is reached, the user can notice a difference between both wheels. This may cause the Power assist diverge from its direction.

When driving down slope use both Assist rims to correct the driving direction. Using only one of the Assist rims might result in braking on one side and cause an unexpected turn.

Driving down slope with Drive rim

Driving down slope with the Drive rim offers a max speed of 6 km/h which can make it more easy to drive a constant speed.

4.7 Mounting and dismounting a power assist

Power assist is designed to fit most common manual wheelchair frames and can be installed without making adjustments to the wheelchair frame itself. In some cases re-adjustment of front wheels is required after replacing manual wheels for the power assist.

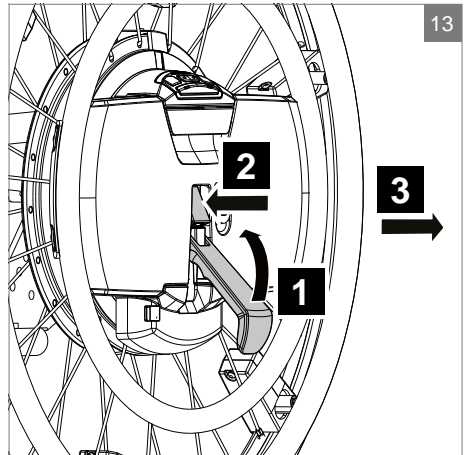
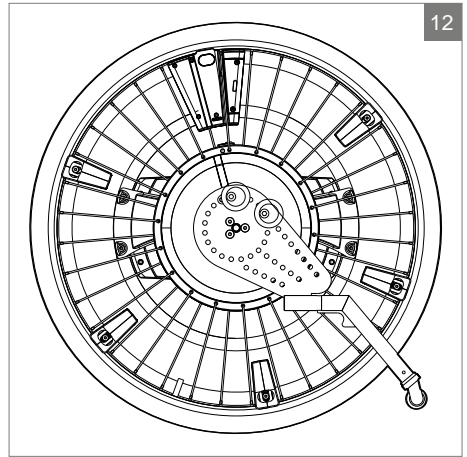
The power assist wheels can be taken off for transport or changing them for manual wheels. The power assist is mounted on a wheelchair frame by making use of a quick release axle. The size and setting of the quick release axle is dependent on the brand and type of your manual wheelchair frame and determined by your dealer.

At the rear side of a power assist wheel there is an anti-tip plate in which 2 cone-shaped supports are screwed (figure 12). The position of the supports is dependent on the brand and type of your manual wheelchair frame and determined by your dealer.

Dismounting of a wheel (figure 13)

By rotating the wheel handle upwards, the wheel handle will be placed in the correct position. Unlock the axle by pushing the unlock button just above the handle with your thumb. Now the wheel can be removed from the chair. The easiest way to do this is by lifting the chair a little bit.

1. Pull the wheel handle vertically up.
2. Push the button to release the quick release axle.
3. Pull the wheel handle to dismount the wheel.



⚠ Warning!

Due to the weight the power assist wheel might require effort to mount. If you do not feel secure mounting the wheel, due to the weight of the wheel, ask an attendant to mount the wheel.

Never pull at the Drive rim to take off the wheel. (figure 14 and 15)

Never use the Drive rim for carrying the power assist in any way – this can damage the Drive rim.

Do not use the Drive rim, but only the tire or the Assist rim for mounting and dismounting a wheel.

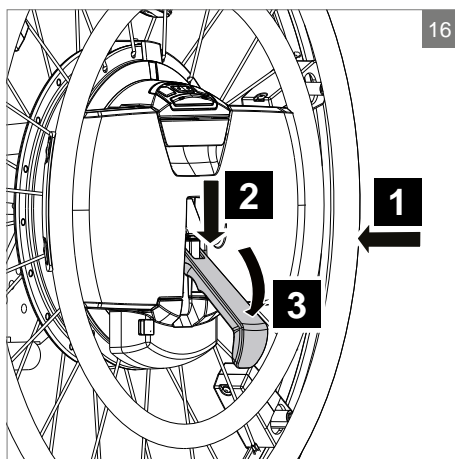
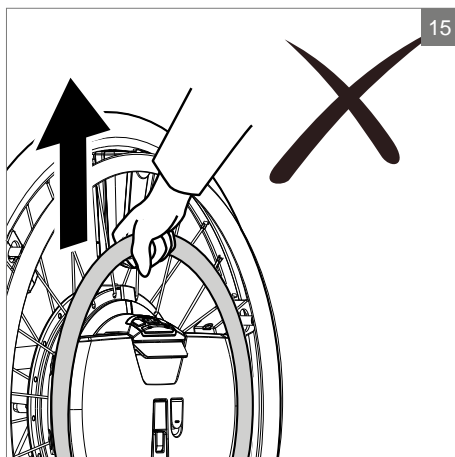
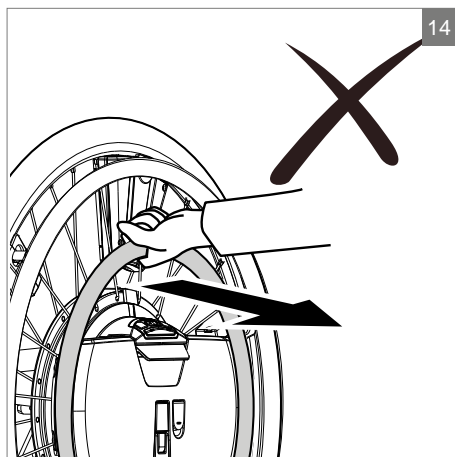
The power assist wheels must never be removed, when a person is sitting in the wheelchair.

Do not mount the power assist wheels on a wheelchair with more than 4 degrees camber.

Mounting a wheel (figure 16)

To mount a wheel, the wheel handle has to be pulled upwards, in the open position.

1. Position the axle in the hole of the adapter sleeve on your wheelchair, and unlock the axle by pushing the unlock button just above the handle with your thumb, and release the button again. The cone-shaped supports will guide the wheel into the right position. Check if the wheels cannot be pushed further into the bus on your wheelchair, then check by pulling at the handle without pushing the unlock button that you cannot pull back the wheel anymore.
2. Push the wheel handle down vertically.
3. Then turn the handle downwards.



See the sticker to close the wheel handle (figure 17)

⚠ Warning!

During the mounting process always check that the wheel cannot be pulled out anymore.

Using the power assist is only permitted with the power assist correctly placed and locked.

Place the power assist wheels according to the identification on the left or right side respectively (figure 18 and 19).

⚠ Caution!

Make sure the wheel handle is fully closed, level with the battery pack. If the wheel handle is not completely closed the power assist cannot be switched on.

4.8 Storage

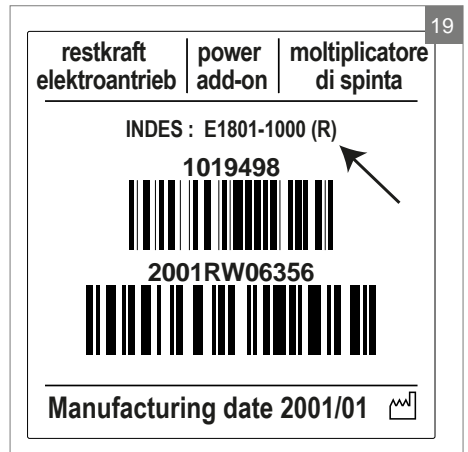
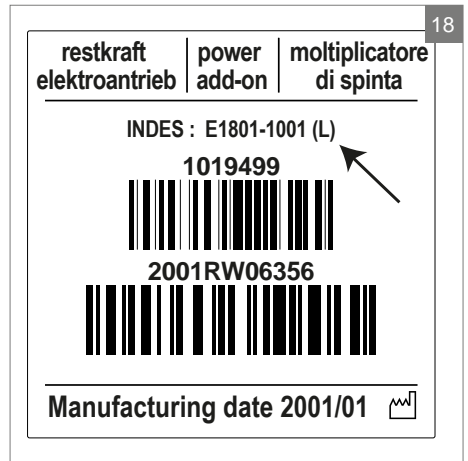
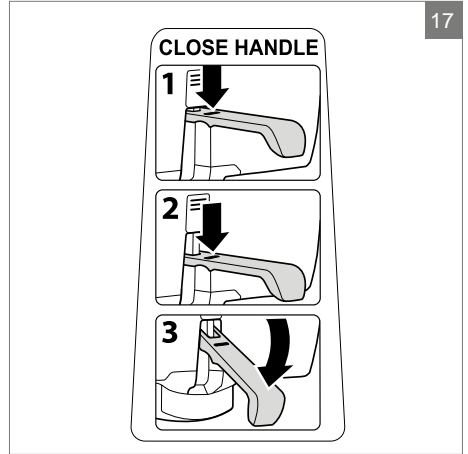
When the power assist is not in use, it must be stored in a dry place where it will not be exposed to weather conditions.

Note!

During storage, the ambient temperature should not be lower than -15°C or higher than $+30^{\circ}\text{C}$ ($+40^{\circ}\text{C}$ is the maximum allowed temperature for the used batteries).

⚠ Caution!

When not using the batteries: It must be avoided that the batteries will get discharged deeply – deep discharge will damage the batteries. Therefore charge the batteries every 3 months to their full capacity.



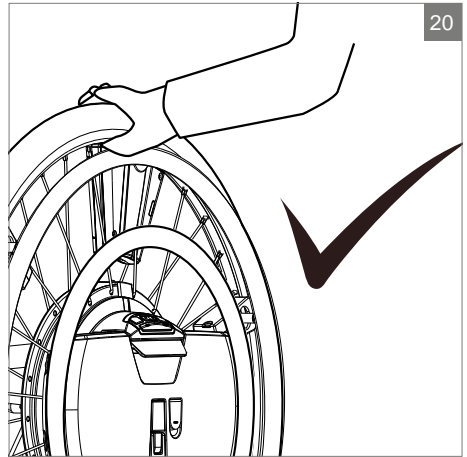
4.9 Lifting the power assist wheels

⚠ Caution!

In order to mount or lift the power assist wheels, only hold them at the tyre or Assist rim (figure 20). Never use the Drive rim, the wheel handle or battery pack handle for lifting the wheel (figure 21 and 22). This may cause severe damage to the sensor system.

⚠ Warning!

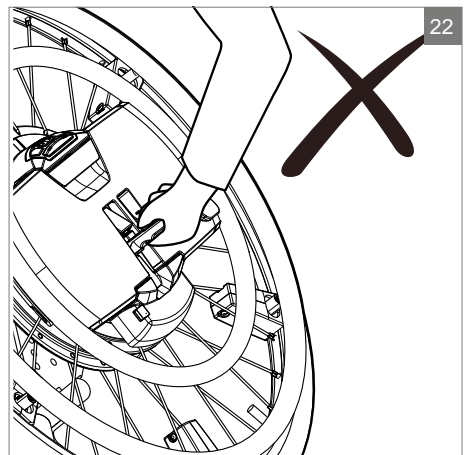
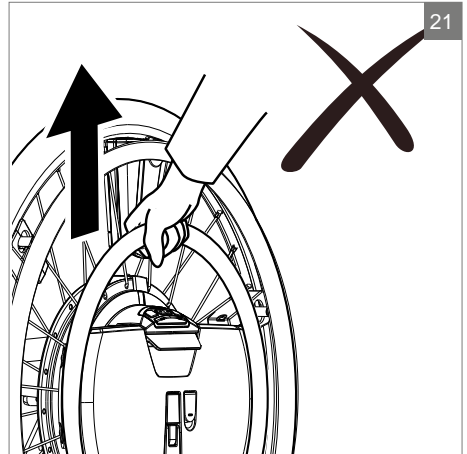
If you do not feel secure lifting the power assist wheel due to the weight of it, ask an attendant to lift the wheel.



4.10 Safety functionalities

For your safety, several safety functionalities are implemented in the system. Most of them will not be noticed, but some can become obvious in case of unintended use. These intentional functionalities are described here.

1. When the wheel handle is in open position at startup, no support is possible. The system will detect this situation, give 1 beep.
2. A continuous Power assist request during about $\frac{3}{4}$ wheel rotation will disable the Power assist functionality (e.g. when the Assist rim is blocked). Pushing one of the profile buttons once will enable the function again.
3. Limitation of speed is settable (with a maximum of 15 km/h). At this point the Power assist stops accelerating and will maintain the speed. Exceeding this speed is not possible.
4. If during the activation of the system the Drive and/or Assist rim has a displacement from the initial rest position, both of the rims must be placed to the initial rest position first, before the function can be used. System will give 4 beeps when not OK.
5. In case you are charging the main batteries, the motor is disabled.



6. To save energy and to avoid possible unintended activations, the power will be switched off automatically after approximately 15 minutes of not using the power assist.

5 Anti-tip settings

For your own safety the power assist is equipped with a so-called anti-tip device. This will prevent you from tipping-over backwards.

⚠ Warning!

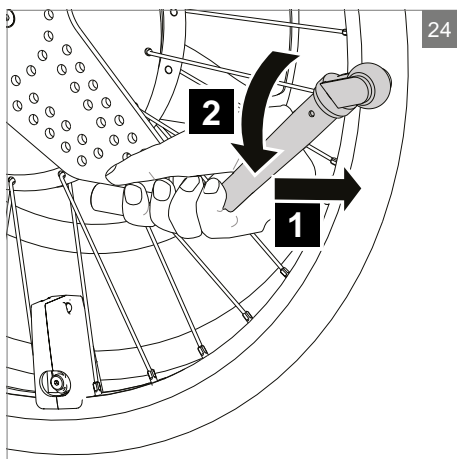
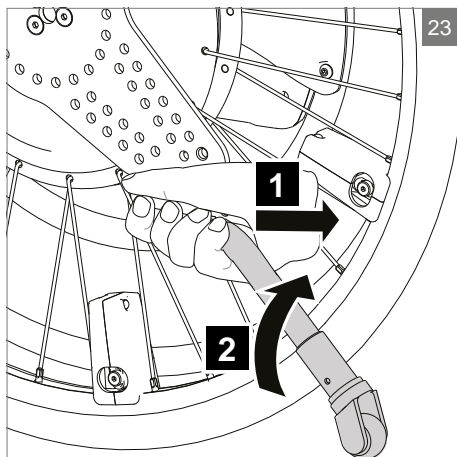
Always use the anti-tip device in its protective position when driving with the power assist.

For transportation or driving down a curb you can temporarily rotate the anti-tips in an upwards position. This can be done by pulling the anti-tip backwards, and rotating it upwards (figure 23)

By again pulling the anti-tip backwards, and rotating it downwards, the anti-tip can be set back to its protective (safe!) position (figure 24).

⚠ Warning!

The anti-tip device is important for your safety and prevent you from tipping backwards in case of a high acceleration. If the anti-tip blocks other parts of your own wheelchair please contact your dealer



6 Transport

6.1 Transport without occupant

Observe the following if you want to transport a wheelchair with power assist.

⚠ Warning!

Please check the manual of your wheelchair for proper instructions on transportation.

Never use the Drive rim for carrying the power assist in any way – this can damage the Drive rim

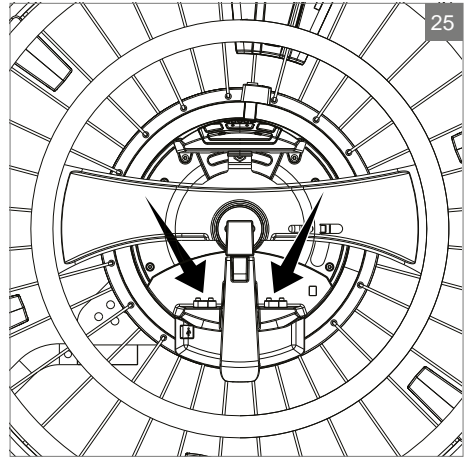
The power assist must always be switched off when being transported.

The battery pack of the power assist can be removed when transporting the system and storing securely.

In case the power assist is transported unattached from a wheelchair, the wheels must be secured against moving during transport to avoid any danger for the occupants, and to avoid any damage to the power assist.

⚠ Caution!

When transporting the wheels without battery, make sure to securely pack the wheels and protect the battery connector points against damage (see figure 25).



6.2 As a passenger seat in a car

Observe the following if you want to use a wheelchair with power assist as a passenger seat in a car.

⚠ Warning!

Please strictly follow the instructions of the owner manual of your wheelchair to ensure safe transportation.

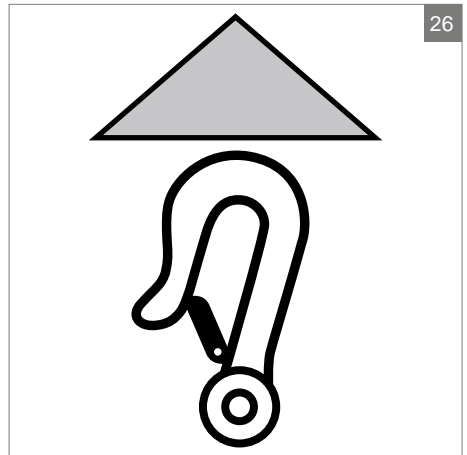
The WheelDrive wheels fitted to the SOPUR Easy-Life manual folding wheelchair demonstrated integrity and satisfied the dynamic test requirements of ISO 7176-19:2008+A1:2015 as amended.

The power assist must always be switched off when being transported.

Check if your wheelchair has been crash tested according to ISO 7176-19 (2008), and reduce the maximum user weight with the weight of power assist (20 kg). A wheelchair is not primary designed to be used as seat in a motor vehicle during transport. Transfer to a regular car seat if possible.

⚠ Caution!

Do not attach any fastening materials to the power assist wheels as this can damage the parts, resulting in improper driving behaviour. Only use the designated hooks at your wheelchair frame (figure 26).



6.3 Special shipping requirements

A wheelchair with power assist may be transported by road, rail, sea or air and the batteries conform to IATA regulations.

⚠ Caution!

Before you travel, please contact the appropriate carrier. The travel operator will be able to supply details of any special requirements/instructions.

A certificate of conformity IATA 2.3.2.2 has been drawn to inform the operator about the type of battery in your power assist. Download the certificate on www.SunriseMedical.eu or request a copy from your retailer. The battery type is also mentioned in chapter 9 Technical specifications.

For information about dimensions and weight of the power assist please refer to chapter 9 Technical specifications.

Ensure that any detachable parts are secured with your mobility aid or separately packed and labelled so they do not get lost during loading and unloading.

We recommend to check in the batteries individually packed and duly protected against damage and short circuiting. Clearly mention 'non-spillable battery' on the transport packaging. Do not travel with damaged or defect batteries.

Take this user manual with you. The carrier will need to refer to the following sections:

- 6.1 Transport without occupant.
- Remove / placing the battery pack (see 4.3 Using the batteries)
- 4.6 Mounting and dismounting a power assist

7 Maintenance

Note!

The power assist should be serviced by your dealer once a year or, in the case of intensive use, every six months.

All required maintenance that must be performed by the user is described in this section.

Repairs must be carried out by an authorized person; please contact your dealer if a repair is needed.

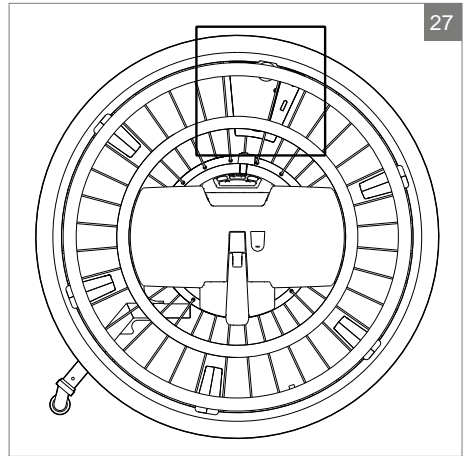
7.1 Maintenance plan

The lifespan of the power assist is very dependent on its usage and maintenance.

- Charge the batteries daily
- Ensure that the batteries are always fully charged. Not using the batteries for an extended period of time can damage them. Do not use the power assist if the batteries are almost run down and never if the batteries are completely empty. This can seriously damage the batteries and you may run the risk of coming to an unintended standstill.
- If the capacity of the batteries is continually decreasing so that the wheelchair can only be used for short trips, this means that the batteries are reaching the end of their lifespan. The batteries then need to be replaced.
- Periodically check for low-bat warning of the sensor box (see paragraph 8.1). Preventively we advice to re-new the AA batteries every 6 months.

⚠ Warning!

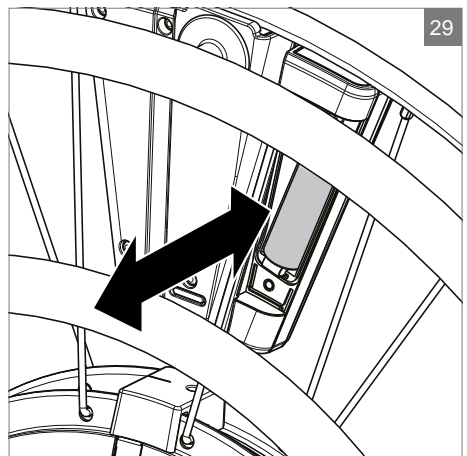
Batteries contain acids. Damaged batteries are a serious health hazard.



27



28



29

Replacing the sensor box AA batteries (figure 27)

Both battery compartments of the sensor box can be opened with a PH1 (Philips) screwdriver (2 screws per compartment) (figure 28 and 29) .

⚠ Caution!

Always replace both AA batteries at the same time.

The polarity is clearly indicated in the battery compartment – incorrect polarity can damage the electronics.

Note!

Periodically check for low-bat warning of the sensor box (see paragraph 8.1). Preventively we advice to re-new the AA batteries every 6 months. Only use non-rechargeable high quality batteries.

7.2 Tyres

Check the tyre pressure at least weekly (and inflate the tyres if necessary); air pressure must be between 6-10 bar. Tyres that are not inflated to the appropriate level will have a negative effect on the performance of the power assist. Moving the wheelchair will require more energy then, making more demands on the batteries. Furthermore, wear on the tyres when driving with soft tyres is unnecessarily high.

To avoid negative impact on driving behavior, make sure both wheels have same pressure.

⚠ Caution!

Never exceed the maximum tyre pressure that is mentioned on the tyre.

Tyres should only be replaced by a qualified specialist – please contact your dealer.

In case of a flat tire while using the power assist make sure to drive slowly, and try to inflate the tyres again, or let the tires be repaired/ replaced by a qualified specialist as soon as possible. Using the power assist with flat tires can damage the tyres and rims.

⚠ Caution!

Do not use massive tyres!

See technical information for appropriate tyre type.

7.3 Cleaning

Clean the power assist with a wet towel and a non aggressive detergent monthly.

First, wipe the dirty parts clean using a wet sponge. Preferably use clean water or a mild soap solution. Wipe the parts dry using a soft dry cloth.

⚠ Caution!

Ensure that the controller is switched off while cleaning. If one of the rims is accidentally touched, the wheelchair can start to move. Take care with water since you deal with an electronic system.

Never use abrasive or aggressive cleaning agents. These can scratch the wheelchair. Do not use organic solvents such as thinner, petrol or white spirit.

The product should be disinfected before re-use by a different user to prevent cross contamination.

7.4 Decommissioning the power assist

If your power assist has become redundant or needs to be replaced, it can usually be taken back by your dealer. If this is not possible, please ask your local authority about the possibilities for recycling or environmentally friendly disposal of the materials.

Various different plastics and metals were used in the manufacture of the power assist. Furthermore, the power assist contains electronic components that should be disposed of as electronic waste. The batteries should be disposed of as chemical waste.

8 Troubleshooting

If the power assist is not working as you would expect, please check the following points:

1. Check section paragraph 4.9 Safety no image functionalities.
2. Turn the wheelchair off and then back on again.
3. Check if the wheel handle is closed.
4. Check if the Assist rim and Drive rim are at their rest position at power on.
5. Check whether the batteries are charged. Recharge them if needed.
6. Check if the sensor box AA batteries have sufficient capacity. During the first use of the Assist rim after starting up a system notification will be given see paragraph 7.1. Replace the AA batteries if needed.
7. Use below problem solving tables to find the cause of the problem related to:
 - A. Switching on
 - B. Driving support
 - C. Driving behavior
 - D. Charging
 - E. Battery
 - F. Installing WheelDrive on chair
 - G. Anti-tip

If, after taking all of the above steps, a problem still persists, contact your dealer.

A - Switching on					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
A1. WheelDrive does not switch on	NA	NA	NA	A1.1. No battery / incorrect battery placement	Place battery OR remove and place again
	NA	NA	Red cap on battery contacts of controller	A1.2. Transport protection cap on battery contacts of controller	Remove protection cap from battery contacts of controller
	NA	all led's can go on/off very fast < 0.5 sec	NA	A1.3. Empty battery	Charge battery
	NA	NA	NA	A1.4. Battery contacts are dirty, broken or battery is defect	Clean battery contacts with moist cloth. Try battery from other wheel. If that one does work, battery is defect. Contact your dealer
	NA	NA	NA	A1.5. User interface defect	
	NA	NA	NA	A1.6. Controller defect	
A2. WheelDrive on and directly off	ON + OFF	normal ON led's	Wheel handle not closed	A2.1. Wheel handle not closed properly	Close wheel handle and turn on the WheelDrive
			NA	A2.2. Wheel handle detection not working correctly	Open the wheel handle and close again, then turn on the WheelDrive
A3. WheelDrive switches on and gives beep code	3	normal ON led's	NA	A3.1. Assist rim not centered during startup	Check if something is causing the hand rim displacement, if yes: remove it. Restart WheelDrive & do not touch the hand rims for 3 seconds during startup
	4	normal ON led's	NA	A3.2. Drive rim not centered during startup	Check if something is causing the hand rim displacement, if yes: remove it. Restart WheelDrive & do not touch the hand rims for 3 seconds during startup
	5	normal ON led's	Battery led bar is not steady. It will drop down for a moment when high capacity of battery is asked.	A3.3. No communication between battery and controller	Clean battery contacts with moist cloth. Try battery from other wheel. If that one does work, battery is defect. Contact your dealer
	5 long	normal ON led's	check function of Assist rim	A3.4. Batteries sensorbox low	Replace batteries in sensorbox.
	6	NA	Drive rim and profile buttons not working	A3.5. Drive rim sensor has an error	Contact your dealer

B - Driving Support					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
B1. Assist rim not working (Drive rim is working)	0	NA	3/4 rotational input is applied on the Assist rim	B1.1. Assist rim function has been disabled because a 3/4 rotational input is detected.	Check if something is causing the 3/4 rotational input on the Assist rim, if yes remove it and restart the WheelDrive
	NA	NA	NA	B1.2. Problem with sensor box batteries	Place or replace batteries in sensor box
	NA	NA	NA	B1.3. Bad contact cable to motor	
	NA	NA	NA	B1.4. Assist rim (sensor) damaged/defect	
	NA	NA	NA	B1.5. Sensor box defect	
	NA	NA	NA	B1.6. Controller defect	
B2. Drive rim not working (Assist rim is working)	NA	NA	movement of both hand rims at the same time	B2.1. Drive rim support has been turned off because movement of both hand rims was detected at the same time	Check if anything unintended is triggering movement of the hand rims and remove it. Restart the WheelDrive.
	NA	NA	Drive rim makes a scratching sound	B2.2. Drive rim damaged or bent	Contact your dealer
	NA	NA	NA	B2.3. User Interface broken	Contact your dealer
	6 beeps	NA	NA	B2.4. Wiper not touching the sensorfoil	
	6 beeps	NA	NA	B2.5. Drive rim sensor foil damaged/defect	
	NA	NA	NA	B2.6. Controller broken	

B - Driving Support					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
B3. Not sufficient support or does not speed up	NA	NA	affect both rims	B3.1. Wrong profile selected/ settings	Change profile
	NA	NA	affect both rims	B3.2. Handbrake is activated	Release brakes
	NA	NA	affect both rims	B3.3. Low tire pressure	Inflate tires
	NA	NA	affect both rims	B3.4. Battery almost empty	Charge battery
	NA	NA	affect only Assist rim	B3.5. Assist rim obstructed, damaged or bad calibration	Check if movement is obstructed by something and remove it, for calibration contact your dealer
	NA	NA	affect only Drive rim. It can make a scratching sound	B3.6. Drive rim obstructed or damaged	Check if movement is obstructed by something and remove it
	NA	NA	NA	B3.7. User Interface defect	Contact your dealer
	NA	NA	NA	B3.8. Sensor box defect	Contact your dealer
	NA	NA	NA	B3.9. Controller defect	
B4. Hard to move Dive/ Assist rim or cannot be moved at all.	NA	NA	NA	B4.1. Drive rim is blocked, damaged or bent	Check if movement is obstructed by something and remove it
	NA	NA	NA	B4.2. Assist rim is blocked, damaged or bent	Check if movement is obstructed by something and remove it

C - Driving Behavior					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
C1. Driving not straight (right and left wheel are giving a clearly different support)	NA	NA	NA	C1.1. Different profile button selected (I II III) left and right	Select same profile button left and right
	NA	NA	NA	C1.2. Tire pressure difference left and right	Inflate tire(s) so pressure left and right is equal
	NA	NA	NA	C1.3. Battery of one wheel almost empty	Charge almost empty battery
	NA	NA	NA	C1.4. Height of front wheels chair is not the same	Contact your dealer
	NA	NA	NA	C1.5. Different software version left and right	
	NA	NA	NA	C1.6. Different profile settings programmed left and right	
	NA	NA	NA	C1.7. Motor function is bad	
C2. Jerky (fast-slow-fast-slow) driving	NA	NA	NA	C2.1. Motor controller software version 1.82 installed.	
	NA	NA	NA	C2.3. Controller defect	
	NA	NA	NA	C2.4. Motor defect	
C3. Automatic slowing down or cannot speed up more	NA	NA	NA	C2.1. Automatic braking is activated & support is disabled because maximum speed setting is reached.	Slow down

C - Driving Behavior					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
C4. Self driving (no input is given by user to the rims and wheeldrive starts to move)	NA	NA	NA	C3.1. Unintended input given	Check if movement is created by something touching the rims, remove it
	NA	NA	NA	C4.2. Sensor foil defect	
	NA	NA	NA	C4.3. Drive rim center position not aligned well	
	NA	NA	NA	C4.4. Drive rim bracket is jammed/ stuck/ broken	
C5. Pinging noise during ride because of broken spoke	NA	NA	NA	C4.1. Broken spoke	Contact your dealer
C6. Rattling noise during driving	NA	NA	small movement battery noticeable	C6.1. Battery is rattling because battery holding screws settings are not optimal	
	NA	NA	NA	C6.2. Anti-tip bolt came loose	
	NA	NA	NA	C6.3. Anti-tip is bend against the tire	
	NA	NA	NA	C5.1. WheelDrive is scratching/abrading along the frame	Contact your dealer

D - Charging					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
D1. Does not charge	NA	NA	no light on charger	D1.1. No power	Check wall socket on power
	NA	NA	no light on charger	D1.2. Bad plug connection	Check correct and firm connection of plug in wall socket, plug in charger and plug in battery
	NA	NA	red flashing light on charger	D1.3. Bad plug connection	Remove plug from battery and connect in again
	NA	NA	NA	D1.4. Charger defect	Try charger from other wheel. If that one does work. Charger is defect. Contact your dealer for replacement
	NA	NA	NA	D1.5. Battery defect	Try battery from other wheel. If that one does work, battery is defect. Contact your dealer for replacement
D2. Charger can not be plugged in	NA	NA	NA	D2.1. Battery port is defect	Try battery from other wheel. If that one does work, battery port is defect. Contact your dealer for replacement
	NA	NA	NA	D2.2. Charger plug is defect	Try charger plug from other wheel. If that one does work, charger plug is defect. Contact your dealer for replacement
D3. WheelDrive beeping during charging	continuous	NA	only when switched on	D3.1. Wheel rotation is detected during charging	Do not move the wheel during charging to prevent damage to the charger cable and connector
D4. Charging time is significantly longer or shorter than usual	NA	NA	takes longer	D4.2. Charger defect	Try charger from other wheel. If that one does work. Charger is defect. Contact your dealer for replacement
	NA	NA	takes shorter	D4.3. Battery end of life or defect	Try battery from other wheel. If that one does work, battery is defect. Contact your dealer for replacement

E - Battery					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
E1. Battery empty fast	NA	NA	NA	E1.1. Low tire pressure	Inflate tires
	NA	NA	NA	E1.2. Battery end of life or defect	Try battery from other wheel. If that one does work, battery is defect. Contact your dealer for replacement
	NA	NA	NA	E1.3. Profile setting on Sport	Driving with profile setting: 'sport' takes more battery power compared to the other profiles. Re-programming can be done by your dealer
	NA	NA	NA	E1.4. Controller defect	
	NA	NA	NA	E1.5. Motor defect	
E2. Battery housing broken	NA	NA	NA	E2.1. Battery housing is cracked	
E2. Battery cannot be placed/or removed	NA	NA	NA	E2.1. Dirt around battery contacts	Remove dirt
	NA	NA	NA	E3.2. Battery holding screws settings are wrong	
	NA	NA	NA	E3.3. Wheel handle deformed	
	NA	NA	NA	E3.4. Drive rim bracket is deformed	
E3. Battery falls out WheelDrive when mounted (battery handle does not snap)	NA	NA	NA	E3.1. Battery housing or handle is deformed	Try battery from other wheel. If that one does fit, battery needs replacement. contact your dealer
	NA	NA	NA	E4.2. Setting of battery holding screws is wrong	
	NA	NA	NA	E4.3. Drive rim is deformed	

F - Installing WheelDrive on chair					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
F1. Cannot place the WheelDrive (the axle can not be placed completely in the frame adaptor)	NA	NA	the axle can not be placed completely in the adaptor	F1.1. Handbrake is activated	Release handbrake
	NA	NA	axle can only be placed half way in	F1.2. Frame adaptor and/or axle is dirty	Clean frame adaptor and axle
	NA	NA	the axle can not be placed completely in the adaptor	F1.3. Bumper(s) interfere with frame	Rotate the wheel so the bumpers are on the right position. When bumper installation is too tight, contact your deal for adjustment
	NA	NA	axle can only be placed in the adaptor for 1 cm	F1.4. Axle is not in release mode	Push release button
	NA	NA	axle can only be placed half way in	F1.5. Axle is bended	Check if axle is bended. When it is, contact your dealer
F2. Cannot remove the WheelDrive from the frame	NA	NA	NA	F2.1. Handbrake is activated	Release handbrake
	NA	NA	NA	F2.2. Axle is not in release mode	Push release button
	NA	NA	NA	F2.3. Frame adaptor and/or axle is dirty	Clean frame adaptor and axle
	NA	NA	NA	F2.4. Axle broken or bended	
	NA	NA	NA	F2.5. Bumper installation too tight	
F3. Wheel handle cannot be opened	NA	NA	NA	F3.1. Wheel handle is deformed/ bended	

G - Anti-tip					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
G1. Anti-tip does not stay upwards	NA	NA	NA	G1.1. Anti-tip bolt came loose	Contact your dealer
G2. Anti-tip damaged/ worn out	NA	NA	NA	G2.1. Anti-tip is bend	Contact your dealer
	NA	NA	Makes stripes on floor	G2.2. Anti-tip wheel is worn out/ damaged	Contact your dealer

Problem solving H - PowerTalk					
Problem	User Interface feedback		other notifications (and/ or check to make)	Possible cause	Actions for user
	Beeps	LED's			
H1. No USB connection with PC	NA	NA	NA	H1.1. USB cable defect	
	NA	NA	NA	H1.2. Wrong PC settings	
	NA	NA	NA	H1.3. Controller defect	

8.1 System notification

To help you to understand some particular behaviour and to solve simple problems, the power assist offers you the following signalling:

Signal overview				
Number of beeps	Beep sequence	LED's	when	Explanation
NORMAL BEEPS				
1	-	I on + battery led's burning	switching on	power switched on
1 long	—	all led's off	switching off	power switched off
1	-	I on	setting profile	profile 1 is selected
2	- -	II on	setting profile	profile 2 is selected
3	- - -	III on	setting profile	profile 3 is selected
WARNING BEEPS				
0			driving	assist rim will be de-activated when 270° input is given.
0			driving	drive rim de-activated when input from both rims is detected. Re-activation when signal is 0
0			waiting	power switched off when auto-off time is reached
1	—		switching on	power will be switched off when handle is open during system start
2	- -	fast blinking red battery led	switching on and driving	main battery low
3	- - -		driving	assist rim not centered during system start. Re-activation when signal is 0 at restart
4	- - - -		switching on	drive rim not centered during system start. Re-activation when signal is 0 at restart
5 long	— — — — —		switching on	batteries assist rim sensor low
continuous	—————		charging	wheel rotation detected during charging. Risk of damaging charger cable and connector
ERROR BEEPS				
1 long	—		driving	release handle is open during driving and system shut down
5 short	- - - - -		switching on and driving	no communication between battery & controller.(system takes more time to start)
6	- - - - -		switching on and driving	drive rim sensor foil has an error. Drive rim will be de-activated.
6	- - - - -		driving	wiper for drive rim is not touching foil

If the issue cannot be solved, please contact your dealer.

9 Technical specifications

9.1 CE declaration and requirements

CE This product complies with the COUNCIL DIRECTIVE 2017/745/EEC concerning medical devices. The product also meets the following requirements and standards. This has been verified by independent test organizations.

Standard	Definition/description
EU guideline 2017/745 EEC	Requirements as stated in Appendix 1 apply
EN 12183 (2014)	Manual wheelchairs - Requirements and test methods
EN 12184 (2014) Class B	Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods
ISO 7176-14 (2008)	Power and control systems for electrically powered wheelchairs and scooters - Requirements and test methods
EN 62304 (2006)	Medical device software – Software life-cycle processes
ISO 7176-21 (2009)	Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and scooters, and battery chargers

9.2 Technical information

Product	Model
Power assist right wheel	E1801-1000
Power assist left wheel	E1801-1001

Power assist	
Class 1 Medical device	Indoor and outdoor use (EN12184 class B)

Description	Unit	
Additional width in reference with manual wheel per side	mm (inch)	21,5 (0.8)
Total additional width in reference with manual wheel	mm (inch)	43 (1.7)
Total weight without batteries	kg (lbs.)	9,7 (1.5)
Weight of the batteries (set)	kg (lbs.)	3,6 (0.6)
Wheel diameter	inch	24
Maximum turning diameter is depending on type of wheelchair used	mm (inch)	+/- 1200 (39.4)
Maximum safe slope (rated slope)	Degrees	6

Description	Unit	
Distance range approx (ISO 7176-4)*		
Assist rim	km (mi)	20 (12.4)
Drive rim	km (mi)	12 (7.5)

Advised tyres	Size	Advised pressure
Schwalbe Marathon Plus 24x1	25-540	8 bar

Climbing capacity for obstacles (outdoor), driving backwards	mm (inch)	50 (2)
Maximum speed forward** (support until)	km/h (mi/h)	6 (3.7)
Operating temperature	°C	-10 and +40
Ingress Protection Rating	Splashing water proof IPX4	
Battery	NiMH, 24V, 3.8Ah	
Battery charge temperature	°C	+10 till +30
Battery storage temperature	°C	-15 till +30
Battery service life	500 charging cycles	
Maximum user weight	kg (lbs.)	130 (20.5)
Maximum camber angle wheelchair	°	4
Battery charger	N100-24, reference number Indes_SUP012	
Charging time (full-charge) approx	hours	2
AA batteries sensor box	A-brand Alkaline AA (LR6) battery, 2700mAh	

* Range dependent on user weight, condition of tyres, type of terrain, condition of battery and weather conditions

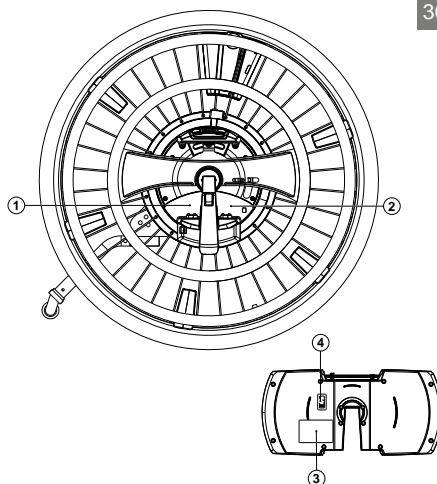
10 Labelling

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10.1 Markings on the power assist

For markings used on the power assist and battery see figure 30.

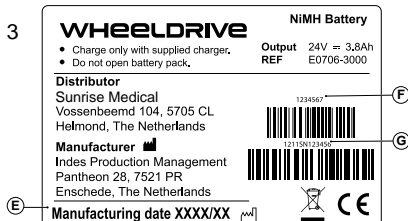
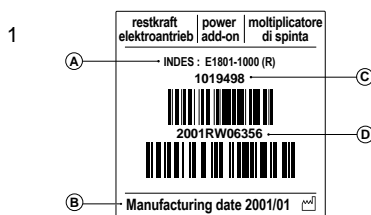
1. Power assist identification label
 - A. Article number
 - B. Date of manufacture
 - C. Left (L) or right wheel (R)
 - D. Serial number
2. Power assist manufacturer label
3. Battery identification label
 - E. Date of manufacture
 - F. Article number
 - G. Serial number
4. Firmware version label



Note!

Never remove or cover up the markings, symbols and instructions affixed to the power assist. These safety features must remain present and clearly legible throughout the entire lifespan of the power assist.

Replace or repair any markings, symbols or instructions that have become illegible or damaged immediately. Please contact your dealer for assistance.



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BMS SW xx.yy

11 Guarantee

THIS GUARANTEE DOES NOT AFFECT YOUR LEGAL RIGHTS IN ANY WAY.

Sunrise Medical* provides a guarantee, as set out in the warranty conditions, for products to its customers covering the following.

Warranty conditions:

1. Should a part or parts of the product require repair or replacement as a result of a manufacturing and/or material fault within 24 months, then the affected part or parts will be repaired or replaced free of charge. The warranty will only cover manufacturing defects
2. To enforce the warranty, please contact Sunrise Medical Customer Service with the exact details of the nature of the difficulty. Should you be using the product outside the area covered by the Sunrise Medical customer service agent, repairs or replacement will be carried out by another agency as designated by the manufacturer. The product must be repaired by a Sunrise Medical designated Customer Service agent, (dealer).
3. For parts, which have been repaired or exchanged within the scope of this warranty, we provide a warranty in accordance with these warranty conditions for the remaining warranty period for the product in accordance with point 1).
4. For original spare parts which have been fitted at the customer's expense, these will have a 12 months guarantee, (following the fitting), in accordance with these warranty conditions.
5. Claims from this warranty shall not arise, if a repair or replacement of a product or a part is required for the following reasons:
 - a. Normal wear and tear, which include but is not limited to the following parts where fitted; batteries, armrest pads, upholstery, tyres, brakes shoes, ferrules, etc.
 - b. Any overloading of the product, please check the EC label for maximum user weight.
 - c. The product or part has not been maintained or serviced in accordance with the manufacturer's recommendations as shown in the user instructions and/or the service instructions.
 - d. Accessories have been used which are not specified as original accessories.
 - e. The product or part having been damaged by neglect, accident or improper use.
 - f. Changes/modifications have been made to the product or parts, which deviate from the manufacturer's specifications.
 - g. Repairs have been carried out, before our Customer Service has been informed of the circumstances.
6. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical"

* Means the Sunrise Medical facility from which the product was purchased.

Additional Notes For Australia Only:

- i. For goods provided by Sunrise medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise Medical that cannot be excluded under Australian Consumer Law.
- ii. You are entitled to a replacement or refund for a major failure and for compensation for any foreseeable loss or damage.
- iii. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
- iv. The benefits to you given by this warranty are in addition to your other rights and remedies under a law in relation to the goods to which the warranty relates.

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