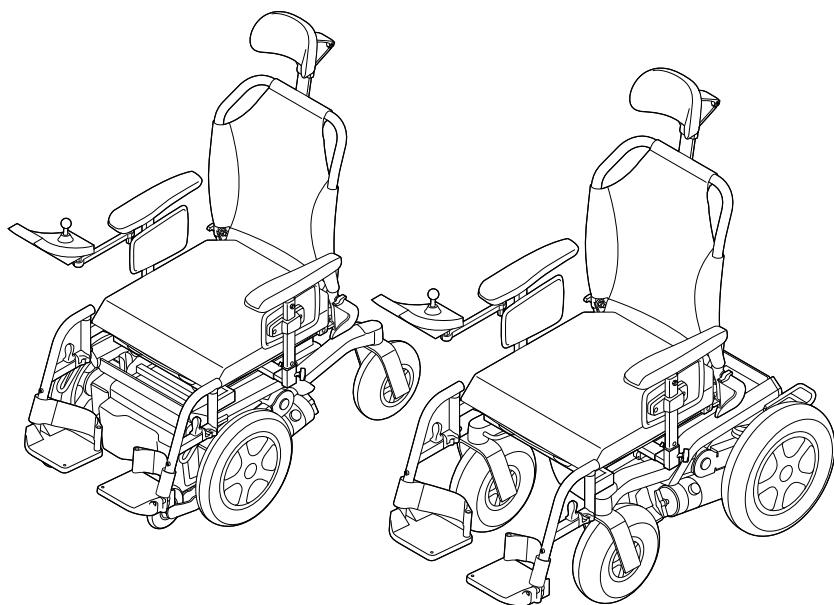


Powered Wheelchair



USER MANUAL

EN

Puma 20

QUICKIE®

9006395 I

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1 Introduction

Congratulations on choosing a Sunrise Medical wheelchair. Sunrise Medical's high-quality mobility products 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 wheelchair safely. This entire user manual for this wheelchair consists of three booklets:

- The general wheelchair user manual (this booklet)
- The user manual for the seating system
- The user manual for the controller

When necessary this general user manual refers to other manuals as shown below:

- Seating system: Refers to the user manual for the seating system.
- Controller: Refers to the user manual for the controller.
- Battery charger: Refers to the user manual for the battery charger.

Read this entire user manual (all of the booklets) carefully before using the product.
If one of the user manuals was not included with your wheelchair, please contact your dealer immediately.

In addition to this user manual, there is also a service manual for qualified specialists.

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.



Loosen by one turn with wing-nut



Tighten by one turn with wing-nut



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

⚠ 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 wheelchair's motors. The motors are continuously in motion during use and can reach high temperatures. After use, the motors will cool down slowly. Physical contact may cause burns.

Ensure that the wheelchair is not exposed to direct sunlight for extended periods of time. Certain parts of the wheelchair, such as the seat, the backrest and the armrests, can become hot if exposed to the sun for too long. This may cause burns or skin irritation.

2.2 Electromagnetic radiation

The standard version of your electric wheelchair has been tested for compliance with the applicable requirements regarding electromagnetic radiation (EMC requirements).

Note!

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

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

In some configurations it is possible that extreme electrical discharge situations (due to static electricity) may cause a fault message ('ISM over-current') flashing on the screen. If this occurs simply turn off your wheelchair for a few seconds and back on again to clear the fault.

In the unlikely event that such problems do occur, you are requested to notify your dealer immediately.

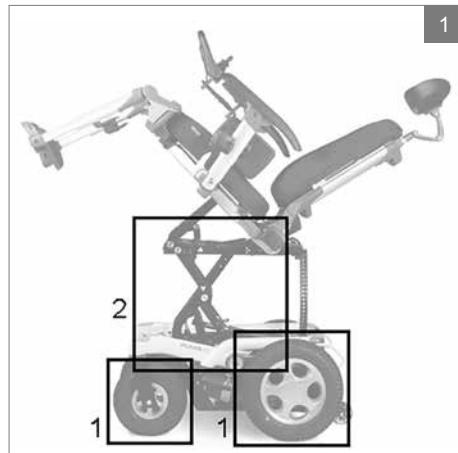
2.3 Moving parts

⚠ Warning!

Contact with the moving parts of the wheelchair should be avoided. A wheelchair has moving and rotating parts. Contact with moving parts may result in serious physical injury or damage to the wheelchair.

Moving/rotating parts (figure 1)

1. Wheels (turning and pivoting)
2. Electrical tilt adjustment



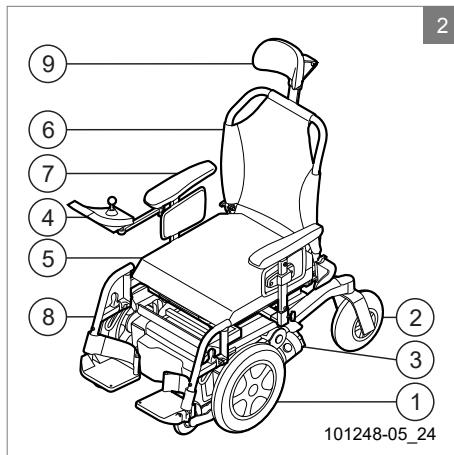
3 General description

Comfort is of paramount importance to many people who make use of a wheelchair. And this is exactly what this electrical driven wheelchair offers: an unknown degree of driving comfort. A distinctive feature is the unique independent suspension system, which absorbs not only shocks, but also vibrations.

3.1 Main components

See figure 2 and 3

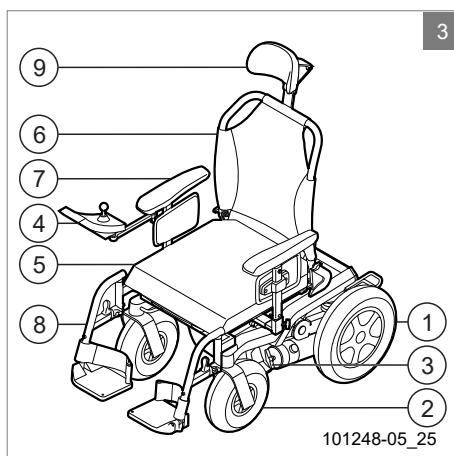
1. Drive wheels
2. Castor wheels
3. Freewheel switch
4. Controller
5. Seat cushion
6. Backrest
7. Armrest
8. Legrest with foot support
9. Headrest



3.2 Configurations

Generally speaking, the wheelchair comprises a chassis with a seating system on top. This special chassis makes it possible for the wheelchair to be configured as front wheel drive (FWD, figure 2) or rear wheel-drive (RWD, figure 3). The wheelchair is available in different speeds (6 km/h & 10 km/h).

In addition, the Puma 20 can be supplied with two different types of tyres (for indoor and outdoor use). This will have an effect on certain specifications.



Note!

This user manual describes a wheelchair configured with standard seating system (Sedeo Lite). If you use a different seating system, be aware of possible deviations in information and illustrations. (📖 Seating system)

3.3 Intended use

Power wheelchairs are exclusively for a user who is unable to walk or has limited mobility, for their own personal use indoors and outdoor.

When an Attendant Control Module is fitted, the Power Wheelchair may be operated by an assistant on behalf of the user.

When a Dual Control Module is fitted the Power Wheelchair may be operated by the user, or control may be switched to an assistant to operate on behalf of the user.

Driving an electric wheelchair requires a user to have cognitive, physical and visual skills. The user must be able to estimate and correct the results of actions taken when operating the wheelchair.

The wheelchair may not transport more than one person at a time. The maximum user weight is 136 kg unless otherwise indicated on the identification plate. Additional weight, such as rucksacks, accessories or medical apparatus, must be added to the user's weight to determine the maximum weight, which may not be exceeded.

Note!

The wheelchair's identification number and other important information may be found on the identification plate. For detailed information about where to find and how to read the identification plate see Chapter 10. Labelling

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 should be held under the supervision of a trainer/advisor.

The intended lifetime of the wheelchair is 5 years. Please DO NOT use or fit any 3rd party components to the wheelchair unless they are officially approved by Sunrise Medical.

⚠ Warning!

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

Use the lapstrap if applicable and make sure the lapstrap is correctly fitted to the wheelchair and adjusted to the user.

( Seating system)

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

Driving the wheelchair without sufficient eyesight is not permitted.

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

Do not allow children to ride in the wheelchair unsupervised

3.4 Area of application

Indications

The varieties of fitting variants, as well as the modular design, mean that it can be used by those who cannot walk or have limited mobility because of:

- Paralysis
- Loss of extremity (leg amputation)
- Extremity defect deformity
- Joint contractures/joint injuries
- Illnesses such as heart and circulation deficiencies, disturbance of equilibrium or cachexia as well as for elderly people who still have strength in the upper body.

Contraindications

The wheelchair shall not be used in case of:

- Perception disorder
- Imbalance
- Seating disability.

Use is restricted to persons who are mentally and physically able to control an input device to operate the chair and its functions in a safe way.

When considering provision, please also note the body size, weight including the distribution of body weight, the user's physical and psychological constitution, the age of the user, their living conditions and their environment. If in doubt a health care professional should be involved to ensure the user is not exposed to unacceptable risks.

3.5 User environment

The wheelchair has been designed for use by an individual on a daily basis. It is suitable for both indoor and outdoor use (EN12184 (2009) class B).

The wheelchairs are intended for use on walk ways and / or roads depending on the configuration, but may always be used when crossing between walk ways.

When driving the wheelchair outdoors, drive only on paved roads, pavements, footpaths and bicycle paths. The speed must be adjusted to suit the environment.

When all of the adjustment options are set to standard position (see Adjustment options), a slope of $\leq 8^\circ$ (14.1%) is deemed to be a normal user environment for an RWD model without there being any danger of instability. For an FWD model this is $\leq 6^\circ$ (10.5%). In the technical specifications, you will find this under 'maximum safe slope'.

The management system of SUNRISE MEDICAL is certified to ISO 9001, ISO 13485 and ISO 14001.

⚠ Warning!

A wheelchair should be regarded as a replacement for the walking function. Users must therefore travel among pedestrians and not on roads or streets with traffic.

The use of the wheelchair on walk ways and roads may be subject to the applicable legal requirements of National Road Laws and/or Road Traffic Laws.

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

Always turn on lights in cases of limited visibility.

Exert extra care when driving at higher speeds. Select a lower maximum speed when driving indoors, on pavements and in pedestrian areas.

Do not drive off of high obstacles.

Do not use the wheelchair if temperatures are below -8°C or above +50°C.

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

Do not use the wheelchair for pushing and/or towing objects.

Do not use the legrests for opening doors.

Do not drive through puddles of water (ISO7176-9-IPX4).

Note!

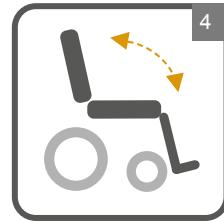
Prevent the wheelchair from coming into contact with sea water: sea water is caustic and may damage the wheelchair.

Prevent the wheelchair from coming into contact with sand: sand can permeate into the moving parts of the wheelchair, causing unnecessary fast wear of these parts.

4 Use of the wheelchair

4.1 Adjustment options

The wheelchair can be supplied with the following mechanical and/or electrical adjustment options which can be made by the user without the use of tools:



Mechanical adjustment options

(Seating system)

Manually elevating legrests

Swing-away joystick holder

Headrest

Electrical adjustment options

(Controller) (figure 4)

Electrical tilt adjustment

Standard position: not tilted

Warning!

Use of the electrical adjustment options may influence the stability of the wheelchair. Use the adjustment options only when the wheelchair is on a flat surface.

Avoid contact with moving and/or rotating parts when making electrical adjustments. Contact with moving and/or rotating parts may result in serious physical injury or damage to the wheelchair.

4.2 Checking the wheelchair before use

Before driving check that:

1. The tyres are sufficiently inflated (see Tyres).
2. The batteries are sufficiently charged. The green lights on the battery indicator must be on. (Controller)
3. The lights and the indicator lights are working properly. (Controller)
4. The freewheel switch has been set to 'drive' (see Pushing the wheelchair).

Note!

Before use, always check to see whether clothing or accessories could come into contact with wheels or other moving and/or rotating parts in which they could become entangled.

The capacity of batteries is reduced in winter. During a period of light frost, the capacity is roughly 75% of the normal capacity. At temperatures below -5°C this will be roughly 50%. This will reduce the wheelchair's range.

4.3 Getting in and out of the wheelchair (transfer)

(Seating system)

⚠ Warning!

Before a transfer is made, ensure that the controller has been switched off.

Ensure that the freewheel switch has been switched to 'drive' (see Pushing the wheelchair)

Do not stand on the footrests. Putting your full weight on the footrests may lead to wheelchair damage and to hazardous situations, including the wheelchair tipping up.

Forwards transfer

Flip up the footplate (figure 5)

1. Flip up (A)
- Swinging back and/or removing the standard legrest (figure 6)
1. Push (A) forwards and keep (A) pressed.
2. Swing (B) to the side.
3. Remove (B).

Sideways transfer**Note!**

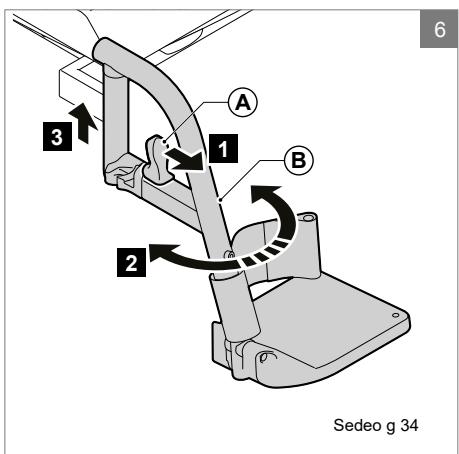
Some versions of the controller will need to be swung aside.

Removing the armrest assembly (figure 7)

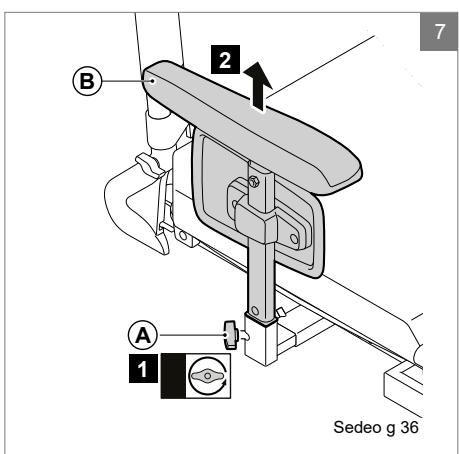
1. Loosen (A) by two turns.
2. Remove (B)



Sedeo g 32



Sedeo g 34



Sedeo g 36

4.4 Driving the wheelchair

Note!

Bear in mind that other road users may not always notice you.

Observe the traffic regulations in force.

Avoid out-of-the-way routes so that help can be found quickly when needed.

Adjust your driving style and speed to the circumstances.

Electric wheelchairs are driven by means of a controller. There is a separate user manual for the controller and this was included with this wheelchair ( Controller).

1. Switch on the controller.
2. Set the maximum speed limit.
3. Move the joystick in the direction in which you would like to go.
4. Moving the joystick even further forwards will cause the wheelchair to drive faster.

Curves

Note!

Never take curves at full speed. Decrease your speed before taking a curve.

Use the indicators when changing direction.

Braking/Emergency stop

To brake, set the joystick steering to neutral position or release completely. The wheelchair will then brake automatically. Pull the joystick back to make an emergency stop.

Stopping distance:

- 6 km/h: 1 meter
- 10 km/h: 2 meter

⚠ Warning!

When driving avoid the following:

Do not push the on/off button.

Do not change to driving in the opposite direction suddenly.

In such cases, the wheelchair will come to an abrupt standstill with a sudden jolt. Not only is this uncomfortable, it could lead to the wheelchair tipping over if on a slope.

Driving on a slope

When all of the adjustment options are set to the standard position (see Adjustment options), a gradient of $\leq 8^\circ$ (14.1%) is deemed to be a normal user environment for an RWD wheelchair without there being any danger of instability. For an FWD model this is $\leq 6^\circ$ (10,5%). This information can also be found in Technical information under 'maximum safe slope'.

Slopes steeper than the normal user environment

Driving on slopes with a gradient greater than the maximum safety limit may lead to safety risks with respect to stability. This requires great care and complete control on the part of the user. Always drive carefully and never take unnecessary risks! Follow the instructions given by the warnings!

The stability and performance of a wheelchair depend on a number of variables. Wheelchairs are adapted to the needs of individual users. This is why variables will differ from wheelchair to wheelchair. You should therefore ask your dealer to inform you about how to use the wheelchair and whether the specific settings and adjustments for your own situation can influence the driving characteristics of the wheelchair.

⚠ Warning!

When driving on a slope, always drive carefully and with the utmost concentration.

Avoid sudden, jerky movements.

Avoid making emergency stops on a slope.

Avoid changing direction on a slope whenever possible.

Do not turn on a slope.

Only drive up a slope with all the adjustment options set to the neutral position.

Never drive in reverse on a slope.

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

Do not drive on slopes for extended periods of time in order to prevent the motor from overheating.

When driving down a slope forwards in an FWD wheelchair, use an anti-tip mechanism.

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

Prevent the wheelchair from gaining too much speed when driving downhill.

4.5 Obstacles

Driving up a kerb

1. Choose the place where the kerb is at its lowest.
2. Drive straight up to the kerb at a right angle to it (20 cm in front of the kerb).
3. Move the joystick forwards. Drive up the kerb without changing direction.
4. Maintain speed until all of the wheels are on the pavement. If mounting the pavement is not possible, find a place where the kerb is lower.

Driving down a kerb

1. Choose the place where the kerb is at its lowest.
2. Drive straight down the kerb with your front wheels at a right angle to it.
3. Move the joystick slowly forwards. Drive down the kerb carefully and as slowly as possible without changing direction.

⚠ Warning!

Never drive down steps or off of obstacles higher than 60 mm in a wheelchair.

4.6 Pushing the wheelchair

The wheelchair can also be moved by pushing. In order to do so, the motors must be disengaged using a freewheel switch. This feature was developed for the attendants of wheelchair users.

The freewheel switch has two positions:

1. The 'Drive' position (figure 8A).
2. The 'Push' position (figure 8B).

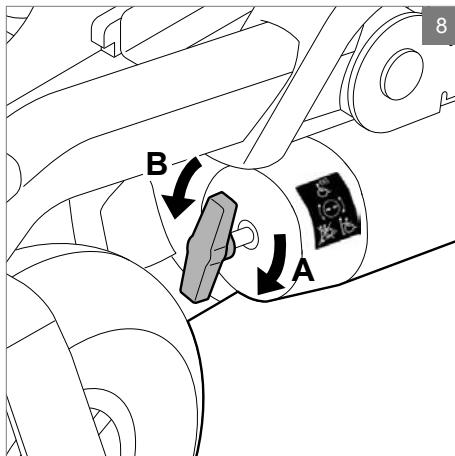
⚠ Warning!

The freewheel switch should only be operated by the attendant and never by the user.

Never set the switch to 'push' on a slope! When the freewheel switch is set to 'push', the automatic parking brake is deactivated. This makes it possible for the wheelchair to roll down the slope.

The automatic parking brake only works if the switch is set to the 'drive' position.

When the chair is no longer being pushed, the freewheel switch should be set to 'drive' immediately.



4.7 Storage after use

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

Note!

Do not place the wheelchair in direct sunlight. Under such circumstances parts of the wheelchair can become so hot that they can cause burns. During storage, the ambient temperature should not be lower than -20°C or higher than +65°C.

5 Settings

The average wheelchair user does not exist. This is why Sunrise Medical wheelchairs can be adjusted according to the specific needs of the user.

In this, we make a distinction between wheelchair settings and wheelchair adjustment options. Settings are carried out only once and must be executed by qualified specialists, unless explicitly stated otherwise. Adjustment options can be carried out by the user. These adjustment options do not require the use of tools.

⚠ Warning!

It is not allowed to change the technical specifications of the wheelchair.

Do not make any changes to the electrical circuit.

Modifications to the wheelchair or to any parts thereof are not permitted.

⚠ Caution!

Parts of the wheelchair that are intended, for servicing or repair, to be removed without the use of tools (e.g. electronics and battery covers) can have an adverse effect on the electrical functioning of the wheelchair if they are missing or not placed back in the right position.

5.1 Seating system

The extensive settings with respect to the seating system allow for optimum support of the body (☞ Seating system). The following setting options are possible:

1. Seat depth and seat width
2. Backrest angle
3. Armrest height
4. Lower leg length

5.2 Seat height

Depending on the specific circumstances of the user of the wheelchair the seat height can be set. Every optional seat height lies within the 8° (14.1%) maximum safe slope of according to EN12184 (2009) ClassB. Lowering the seat height has a positive influence on the (dynamic) stability.

⚠ Warning!

Increasing seat height has a negative effect on dynamic stability

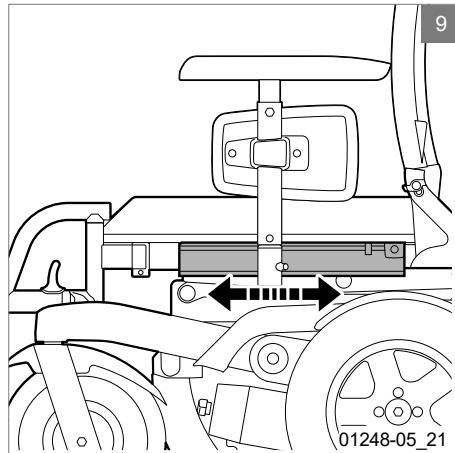
5.3 Centre of gravity setting

In case of re-use of the wheelchair or when adapting the seat depth, it might be necessary to change the centre of gravity. The wheelchair's centre of gravity can be adjusted within the seating system (figure 9) (Seating system).

⚠ Caution!

Changing the wheelchair's centre of gravity may negatively influence the wheelchair's driving characteristics and/or its dynamic stability.

In case of doubt, contact the technical support department at Sunrise Medical.



5.4 Controller height and depth

(Seating system)

5.5 Control system programme

This wheelchair is equipped with a control system that can be programmed by adjusting settings within the system. This is a specialized job that needs training and can only be adjusted with professional software. It's not possible and allowed for end users to adjust these settings.

⚠ Warning!

The incorrect setting of the parameters for the control system may result in very dangerous situations.

Settings must be made by qualified specialists.

6 Transport

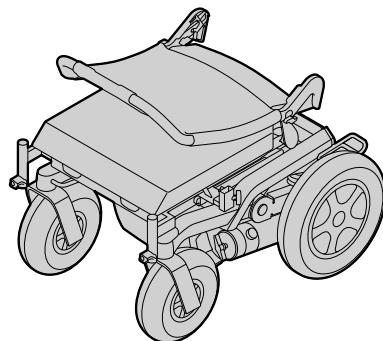
6.1 Transport without occupant

Parts of the wheelchair that can easily be detached should be removed when transporting the wheelchair (figure 10)

(Seating system).

1. Remove the seat
2. Remove the legrests
3. Remove the armrests
4. Fold down the backrest

Store these parts securely. Use suitable ramps for wheeling the chair in and out of the vehicle. Once the wheelchair is in the vehicle, it must be secured with an ISO 10542 approved tie-down system that is suited to the weight of that particular wheelchair including any options (see 9.2 Technical information).



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6.2 Special shipping requirements

The wheelchair 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.

For information about dimensions and weight of the wheelchair see chapter 9.

For information about the batteries in your wheelchair see 7.2 Batteries.

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.

Take this user manual, the seating system user manual (Seating System) and the controller user manual (Controller) with you. The carrier will need to refer to the following sections:

- 4.6 Pushing the wheelchair
- How to lock/unlock the controller (if applicable, see Controller chapter "7 Locking the controller").
- How to remove the fuse (see figure 11).
 1. Remove the cover between the castor wheels
 2. Remove the fuse cover.
 3. Remove fuse.

6.3 The wheelchair as a passenger seat in a car with straps

Note!

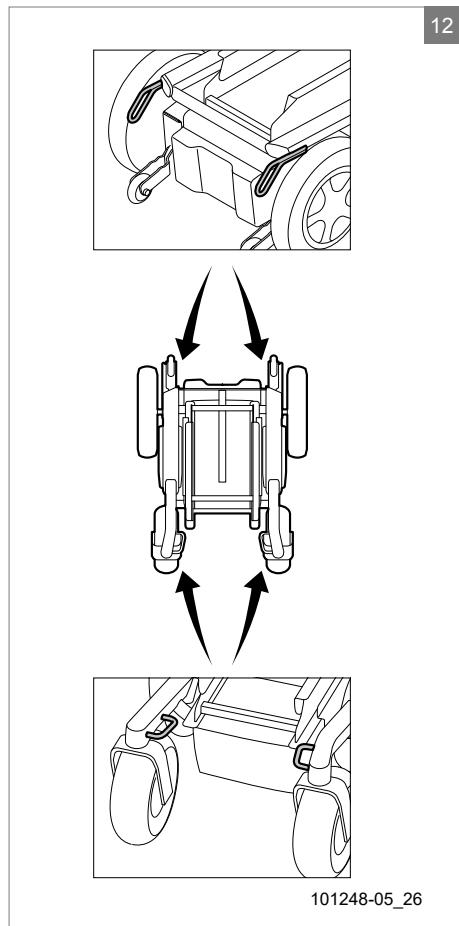
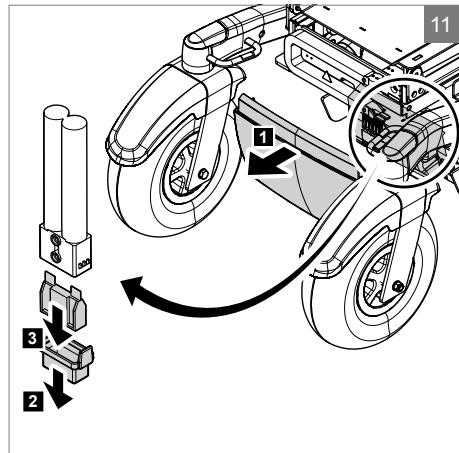
This wheelchair is crash tested according to ISO 7176-19 (2008) considering a maximum passenger weight of 136 kg.

Wheelchairs are not primarily designed to be used as car seats and cannot offer the same degree of safety offered by standard car seats, no matter how securely they have been tied down in the vehicle concerned.

Due attention should be paid to the following points when a transfer from the wheelchair to a standard car seat is not possible.

The wheelchair can be used as a passenger seat in a car or bus by using a 4-point integrated transport tie-down system that has been approved to ISO 10542 standards. Make sure that this restraint system is suitable to the total weight of the wheelchair. The weight of a wheelchair depends on its configuration. The specifications (see 9.2 Technical information) give an overview of several options and their share in the total weight. Always weigh the total chair to make sure that the right restraint system is used.

The system requires tie-down rails to be mounted in the car. The chair must always be strapped to the four tie-down points (figure 12).



⚠ Warning!

Transfer to a regular car seat if possible.

Always ask the transporter for confirmation that the vehicle is suitably designed, insured and equipped for transporting a person in a wheelchair.

Set the wheelchair in the standard position (see 4.1 Adjustment options) and use the headrest if the wheelchair is fitted with one.

The wheelchair must always be switched off when being transported.

The wheelchair has been tested in accordance with ISO 7176-19 (2008) with Q-strain Q195 and Q-strain QE5-6343 (>75 kg)

Note!

Ease of access to, and manoeuvrability in, motor vehicles can be significantly affected by wheelchair size and turning radius; smaller wheelchairs and/ or wheelchairs with a shorter turning radius will generally provide greater ease of vehicle access and manoeuvrability to a forward-facing position.

⚠ Warning!

- A. The wheelchair should be in a forward facing direction and secured in accordance with the instructions from the manufacturer of the fastening system.
- B. This wheelchair is approved for use in cars and meets the requirements for forward facing transport and head on collisions. The wheelchair has not been tested for other positions in a vehicle.
- C. The wheelchair has been dynamically tested in a forward facing direction, with the user secured by both a pelvic and chest belt (3-point seat belt)
- D. Both the pelvic and chest belts should be used to reduce the risk of head and chest injuries in the event of colliding with parts in the car.
- E. In order to reduce the risk of injury to the user, tables that are fitted to the wheelchair must be:
 - Removed and secured separately in the vehicle, or
 - Secured to the wheelchair, but with energy-absorbing padding placed between the table and the user
- F. Where possible, other wheelchair accessories should be secured to the wheelchair or removed from the chair and secured in the vehicle during transport, so that they don't become loose and cause injury to the user in the event of a collision.
- G. Support and positioning equipment must not be regarded as safety equipment/seat belts if they are not labelled in accordance with the requirements of ISO 7176/19-2008.
- H. The wheelchair should be inspected by a representative of the manufacturer before being used again after any kind of collision.
- I. No changes or replacements must be made to the anchorage points/car fastenings on the wheelchair, or to constructional elements or parts of the frame without consulting the manufacturer.
- J. When using electric wheelchairs in motor vehicles, gel-filled batteries should be used.

Fastening the seat belt

⚠ Warning!

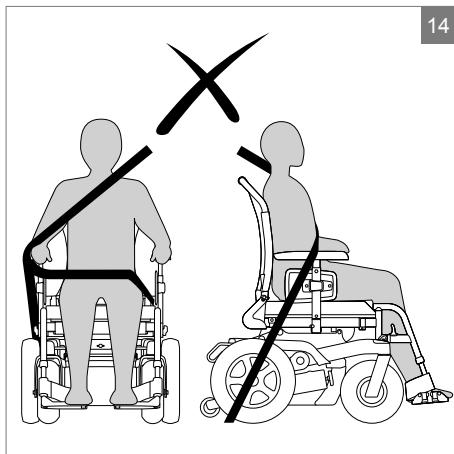
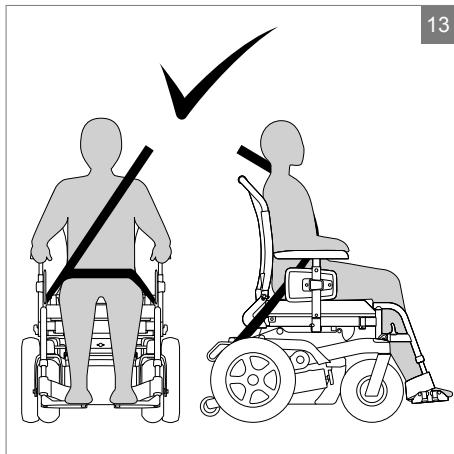
Use the three-point seat belt in order to reduce the risk of head and chest injuries in the event of the wheelchair colliding with parts of the car.

Care should be taken when applying the occupant restraint.

Use the seat belt as follows:

- Position the belt across the hips as tightly as possible at an angle between 30° and 75°. Within these limits a steeper angle is desirable. The other part of the belt is positioned to sit across the chest and shoulder (figure 13).
- The seat belt should fit as tightly as possible and must not be twisted.
- Ensure that the seat belt is not obstructed from having contact with the body by wheelchair parts, such as armrests or wheels (figure 14).

In order to prevent injury in the event of a collision, secure wheelchair accessories to the wheelchair or remove them from the chair and secure them in the vehicle.



7 Maintenance

The wheelchair's lifespan is dependent on it being well maintained.

For information concerning specific settings, maintenance or repair work, please contact your dealer. Always be sure to mention the model, year of manufacture and identification number provided on the identification plate of the wheelchair when contacting your dealer.

Note!

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

Charging the batteries (Battery charger)

Consult the user manual for the battery charger to determine whether it is suitable for the batteries in use (see 9.2 Technical information).

- Switch off the wheelchair's controller.
- Plug the battery charger's charging plug into the charging connector on the controller.
- Activate the battery charger. Consult the user manual for the battery charger.

⚠ Warning!

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

Disconnect batteries in case of longer storage without usage.

7.1 Maintenance plan

	Task	Chap.
Daily	Charge the batteries after each use	7.2
Weekly	Check the tyre pressure and inflate the tyres if necessary	7.3
Monthly	Clean the wheelchair	7.4
Annually	Have wheelchair serviced by dealer	-

7.2 Batteries

The wheelchair uses two 12V non-spillable 'dry' gel batteries in series. These batteries are fully sealed and require no maintenance.

Note!

Do not use 'wet' batteries.

Take into account the fact that the wheelchair's range is reduced at low temperatures. During a period of light frost, the capacity is roughly 75% of the normal capacity. At temperatures below -5°C this will be roughly 50%.

Charge the batteries if the wheelchair is not being used for an extended period of time. The batteries should be charged every night under normal use. The battery charger's display will indicate when the batteries are fully charged. Depending on how depleted the batteries are, it may take up to 12 hours to fully charge the batteries again.

Maintaining the batteries

Note!

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 wheelchair if the batteries are almost depleted and never completely deplete the batteries. This can seriously damage the batteries and you may run the risk of coming to an unintended standstill.

Replacing the batteries

If the capacity of the batteries is continually decreasing so that the wheelchair can only be used for short trips, then this means that the batteries are reaching the end of their lifespan. The batteries will then need to be replaced. Please contact your dealer for assistance.

⚠ Warning!

Batteries contain acids. Damaged batteries are a serious health hazard. Follow the instructions on the batteries at all times.

7.3 Tyres

To ensure that your wheelchair functions properly, it essential that the tyres are kept at the correct pressure. The correct pressure is indicated on the side of the tyre.

Tyre pressure	
Castor wheel 9"	3.5 bar max.
Castor wheel 10"	3.5 bar max.
Drive wheel 12.5"	2.8 bar max.
Drive wheel 14"	2.1 bar max.

Tyres that are too soft will have a negative effect on the wheelchair's performance. Moving the wheelchair will require more energy, making more demands on the batteries. Furthermore, wear on the tyres when driving with soft tyres is unnecessarily high.

Note!

Never exceed the maximum tyre pressure

Drive wheel tyre repair

Note!

Tyres should only be replaced by a qualified specialist. For an extensive description of tyre repairs, please refer to the service manual available to qualified specialists.

Before tyres are repaired they must first be fully deflated.

7.4 Cleaning and desinfection

Please consult the user manual for the seating system for information about cleaning the seating system (📖 Seating system).

⚠ Caution!

Ensure that the controller is switched off while cleaning. If the joystick is accidentally touched, the wheelchair can start to move or the electrical options can be operated accidentally.

Take care with water in view of the electronic system

Removing dry dirt

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.

Note!

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

7.5 Used products and the environment

Under normal use and with prescribed maintenance, the wheelchair's expected lifespan is approximately 5 years.

The environment



If your wheelchair has become superfluous or needs to be replaced, it can usually be taken back by your dealer in consultation. 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 wheelchair. Furthermore, the wheelchair contains electronic components that should be disposed of as electronic waste. The batteries should be disposed of as chemical waste.

A disposal fee is not applied to wheelchairs.

8 Troubleshooting

If the wheelchair is not working as it should, check the following points.

- Check whether the batteries are charged.
- Turn the wheelchair off and then back on again.
- Check whether the battery plugs are all securely in place.
- Check whether the freewheel switch is in the DRIVE position.
- Check the position of the speed regulator.

If the problem has not been resolved:

- Consult the troubleshooting section of the manual for the controller (Controller).

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

9 Technical specifications

9.1 CE declaration and requirements



As the manufacturer, SUNRISE MEDICAL, declares that this product conforms to the Medical Device Regulation (2017/745). The product also meets the following requirements and standards. This has been verified by independent test organizations.

Standard	Definition/description	Test dummy weight
Medical Device Regulation (EU) 2017/745	Requirements as stated in Appendix 1 apply Sunrise Medical declares under its sole responsibility that this product is in conformity with the requirements of the Medical Device Regulation (EU) 2017/745.	n/a
NEN-EN 12182	The EN 12182 requirements as stated in NEN-EN 12184 (2009): Technical aids for disabled persons - General requirements and test methods October 1999	136 kg (21.4 lbs.)
NEN-EN 12184 (2009) Class B	Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods October 2009	136 kg (21.4 lbs.)
ISO 7176-8	Requirements and test methods for impact, static and fatigue strengths July 1998	n/a
ISO 7176-9	Climatic tests for electric wheelchairs IPX4	n/a
ISO 7176-14	Requirements and test methods for power and control systems for electrically powered wheelchairs 1997	n/a
ISO 7176-19 (2008)	The Puma 20 meets the crash test requirements as described in ISO 7176-19 (2008) Sunrise Medical declares that this product fulfils the performance requirements for a "Crash Test" to ISO 7176-19.	77 kg (11.8 lbs.)

9.2 Technical information

The electric wiring diagram varies according to the type of controller used ((Controller).

Batteries	Max.	Unit
Maximum battery dimensions	260 x 172 x 210 (10.25 x 6.75 x 8.25)	mm inch
Battery capacity	40 / 60 / 74 GEL, 50 AGM	Ah
Maximum permissible charging voltage	24	V
Maximum charging current	12	A (rms)
Connector type	(Controller	
Insulation	Class 2 double insulated	

Model		Puma 20 Sedeo Lite	
Class		B	
Description	Unit	FWD	RWD
Maximum user weight	kg (lbs.)	136 (21.4)	136 (21.4)
Total length including legrests	mm (inch)	1160 (45.7)	1095 (43.1)
Total width 12.5" drive wheels	mm (inch)	610 (24)	
Total width 14" drive wheels	mm (inch)	655 (25.8)	
Total weight without batteries:	kg (lbs.)	77,6 (12.2)	
Batteries 40 Ah (C20) (set of two)	kg (lbs.)	+ 28,4 (4.5)	
Batteries 50 Ah (C20) (set of two)	kg (lbs.)	+ 29,6 (4.7)	
Batteries 60 Ah (C20) (set of two)	kg (lbs.)	+ 34,6 (5.5)	
Batteries 74 Ah (C20) (set of two)	kg (lbs.)	+ 45,8 (7.2)	
Electrical tilt adjustment	kg (lbs.)	+ 6,5 (1)	
Puncture-proof drive wheels (set of two)	kg (lbs.)	+ 2 (0.3)	
Transport weight of the heaviest part	kg (lbs.)	77,6 (12.2)	
Maximum safe slope	° (%)	6 (10,5)	8 (14,1)
Static stability			
Downwards	°	15	
Upwards	°	15	
Sideways	°	15	
Reversing distance	mm (inch)	1200 (47.2)	1700 (66.9)
Turning radius (ISO 7176-5)	mm (inch)	600 (23.6)	850 (33.5)
Distance range* 74 Ah (C20) approx. (ISO 7176-4)			
6 km/h	km (mi.)	43,7 (27.2)	
10 km/h	km (mi.)	38,8 (24.1)	
Climbing capacity for obstacles (outdoor)	mm (inch)	60 (2.4)	80 (3.1)
Maximum speed forwards	km/h	6 / 10	
Seat angle adjustment	°	0 - 6	
Effective seat depth	mm (inch)	420 / 440 / 460 / 480 / 500 (16.5 / 17.3 / 18.1 / 18.9 / 19.7)	
Effective seat width	mm (inch)	420 - 510 (16.5 - 20.1)	
Seat height (excl. cushion)**	mm (inch)	405 / 430 / 455 / 480 / 505 (15.9 / 16.9 / 17.9 / 18.9 / 19.9)	
Seat height (incl. cushion)**	mm (inch)	465 / 490 / 515 / 540 / 565 (18.3 / 19.3 / 20.3 / 21.3 / 22.2)	
Backrest angle	°	92 / 97 / 102 / 107	
Backrest height	mm (inch)	480 (18.9)	
Lower leg length	mm (inch)	360 - 460 (14.2 - 18.1)	

* The following aspects have a negative effect on the distance range: obstacles, rugged terrain, driving on slopes, exposure to temperatures below freezing point and frequent use of electronic adjustment options.

** Seat height incl. load, 0° seat angle and 12,5" drive wheels

10 Labelling

10.1 Markings on the wheelchair

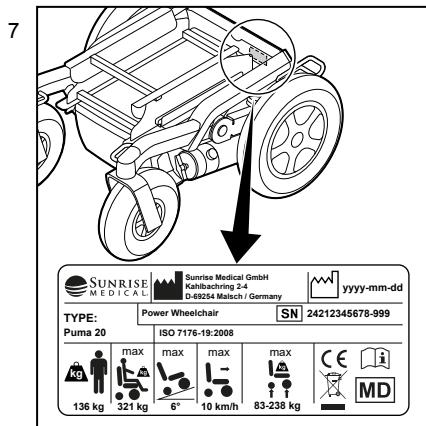
Note!

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

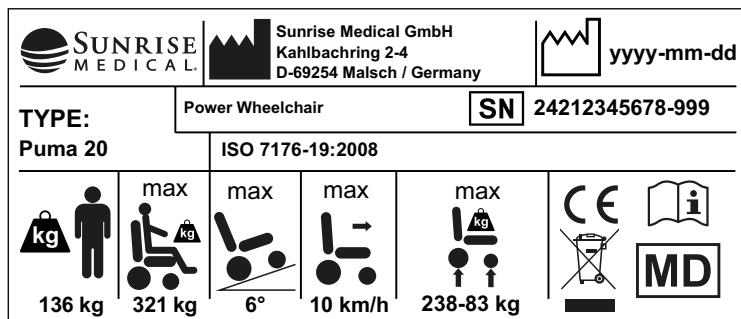
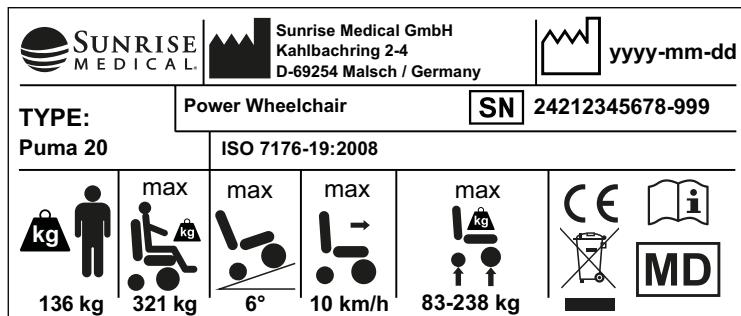
Replace or repair any markings, symbols or instructions that have become illegible or damaged immediately. Please contact your dealer for assistance.

Markings used on the wheelchair (figure 15):

1. Check manual before using
2. Freewheel switch in 'Drive' mode. Freewheel switch in 'Push' mode. Never set the freewheel switch to 'Push' mode while the wheelchair is on a slope.
3. Battery charging connection
4. Attachment point for the tie-down system for transportation in a vehicle.
5. Risk of breakage! Use caution when swinging the controller aside in order to avoid anything becoming trapped.
6. Risk of pinching. Keep hands and fingers clear of the moving parts when adjusting the height and/or when adjusting the tilt of the wheelchair.
7. Position of the nameplate.



10.2 Nameplate



Puma 20

Product Name/SKU Number.



Maximum safe slope with anti-tip tubes fitted,
Depends on wheelchair setting, posture and
physical capabilities of the user.



Maximum user weight.



Load Maximum.



Maximum speed.



Maximum axle loading.



CE Mark.



User's Guide.



Indicates electrical / electronic equipment
must be disposed of in accordance with
the WEEE regulation.



XXXX-XX-XX

Date of manufacture.



Serial number.



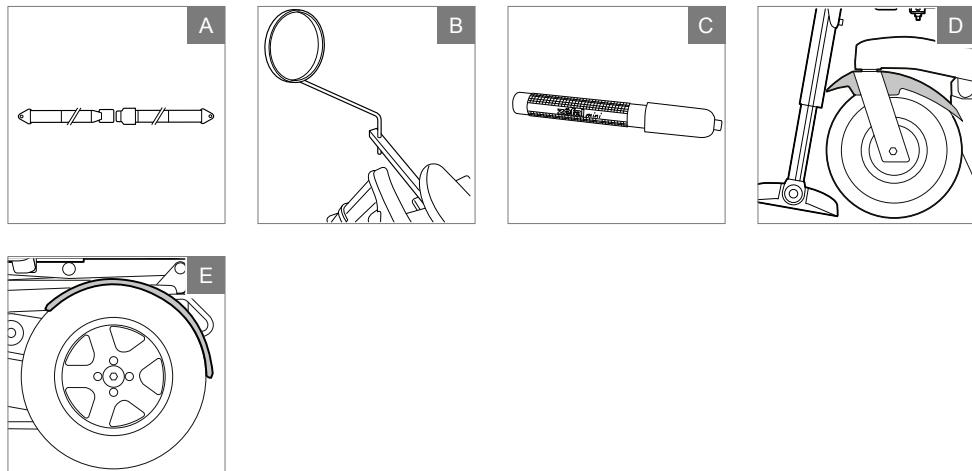
This symbol means Medical Device.



Manufacturer's address.



Crash tested according to
ISO 7176-19:2008.



11 Accessories

- A. Lap strap (short or long)
- B. Mirror
- C. Manual inflator
- D. Mudguards for castor wheels
- E. Mudguards for drive wheels
 - Kerb climber

See www.SunriseMedical.eu or contact your Sunrise Medical dealer for more options, accessories and spare parts

12 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.

13 Additional Information

Note!

Notice to the user and/or patient: Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

B4Me special adaptations

Sunrise Medical strongly recommends that in order to ensure that your B4Me product operates, and performs as intended by the manufacturer; all the user information supplied with your B4Me product is read and understood, before the product is first used.

Sunrise Medical also recommends that the user information is not discarded after reading it, but it is kept safely stored for future reference.

Medical Device Combinations

It may be possible to combine this Medical device with one or more other Medical Device or other product. Information on which combinations are possible can be found at www.SunriseMedical.co.uk. All combinations listed have been validated to meet the General Safety and Performance Requirements, Annex I Nr. 14.1 of the Medical Device Regulation 2017/745.

Guidance on the combination, such as mounting, can be found at www.SunriseMedical.co.uk

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