

Owner's manual

English

***Koala MiniFlex***



## **Dear Permobil Owner**

We congratulate you on your choice of power wheelchair. Our goal is for you to continue to feel satisfied with your choice of both vendor and wheelchair. Your Permobil is designed to give you highest possible comfort and safety and to meet the requirements regarding safety and environment.

Before you begin using your wheelchair, it is important that you read and understand the content of these operating instructions and in particular the Safety Instructions.

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## **IMPORTANT INFORMATION ABOUT THIS OWNER'S MANUAL**

Before you begin using your wheelchair, it is important that you read and understand the content of these operating instructions and in particular the Safety Instructions.

These operating instructions are primarily intended to acquaint you with the functions and characteristics of the wheelchair and how you can use them in the best manner possible. They also contain important safety and maintenance information, as well as describing possible problems that can arise while driving the wheelchair.

Always keep these operating instructions handy in connection with your wheelchair, since the need for important information can arise concerning its use, safety and maintenance.

It is also possible to obtain information concerning our products from our home page on the Internet. You can find us at [www.permobil.com](http://www.permobil.com).

All information, pictures, illustrations and specifications are based upon the product information that was available at the time that these operating instructions were printed. Pictures and illustrations that are found in these operating instructions are representative examples and not intended to be exact depictions of the various parts of the wheelchair.

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

If you are visually impaired, this document can be viewed in PDF format at [www.permobil.com](http://www.permobil.com) or alternatively ordered in large text.

### **Ordering of Documentation**

If you are in need of another copy of the Owner's Manual, it can be ordered from Permobil. Ask for the Article Number specified on the last (cover) page.

## **Technical support**

In the event of technical problems, you should contact your dealer or Permobil Inc. USA at 1-800-736-0925.

Always state the chassis serial number when contacting Permobil to ensure that the correct information is provided.

## **Spare parts & accessories**

Spare parts and accessories must be ordered through your dealer. The expected service life of this product is 7 years.

## **Scrapping**

Contact Permobil for information about scrapping agreements in force.

## **Warranty**

A warranty registration card is attached to each new wheelchair. The Permobil Inc.. Product Warranty Information sets forth the conditions of the warranty.

Contact your dealer or Permobil Inc USA for information about the warranty period for this wheelchair.

## Incident reporting

If an incident occurs please contact your nearest Permobil representative. Normally the same person you contacted at purchase day. To prepare this contact there is a link on our homepage, on the internet, at [www.permobil.com](http://www.permobil.com). Open up your country page and the contact page. Here is the needed contact information and a guidance document in what information we need to investigate the incident. Complete the information as much as possible. This is of great help for us.

To increase the product quality and to ensure that our product is safe through the whole life cycle we need you to send in Incident Reports. It is also stated in MEDDEV 2.12-1 and Annex 9 that the manufacturer shall *“Encourage users or those given specific responsibility for reporting incidents that have occurred with medical devices and that meet the criteria within these guidelines to report the incidents to the Manufacturer and or to the Competent Authority in accordance with national guidance”*.

To meet the requirements and to ensure that our products shall remain safe in your hands we need your assistance. We hope you never need to use the information on this page but if there is an incident please contact us.

## Product approval

This product fulfil the requirements according to EN 12184, EN 1021-1, EN 1021-2, ISO 7176-9:2009, ISO 7176-14:2008, ISO 7176-16:1997 and ISO 7176-19:2001.



## **SAFETY INSTRUCTIONS**

### **General**

An electric wheelchair is a motorized vehicle and special care must therefore be taken when it is used. Please read and follow all instructions and warnings in this manual before operating your Permobil powered wheelchair. Incorrect use may both injure the user and damage the chair. In order to reduce these risks, you should read the Owner's Manual carefully, in particular the safety instructions and their warning texts.

Permobil is not responsible for personal injuries or property damage resulting from any person's failure to follow the warnings and instructions in this manual. Permobil is not responsible for injuries or damage resulting from failure to exercise good judgment.

The final selection and purchasing decision about the type of electric wheelchair to be used is the responsibility of the wheelchair user and his or her healthcare professional. Permobil is not responsible for inappropriate selections of wheelchair models or features or improper fitting of the wheelchair.

## Attention!

Throughout this manual the following symbol will be used to note items that have significant importance to safety concerns:

### **WARNING!**

Please use extreme caution where this warning symbol appears. Failure to observe warnings can lead to personal injury and property damage, including damage to the wheelchair.

### **CAUTION!**

Please use caution where this symbol appears.

Your wheelchair and seat was configured specifically for your needs as prescribed by your healthcare provider. Consult your healthcare provider before changing the seat position or making any other adjustment. Some adjustments may reduce your wheelchair's performance or safety or may not be appropriate for your needs.

It is also of the utmost importance that you devote sufficient time to become acquainted with the different buttons, the function and steering controls, the different adjustment possibilities of the seat, etc. of your wheelchair and its accessories before you begin using it.

Do not undertake your own first test drive without making sure that you have assistance in the immediate vicinity if you should need help.

## Prepare for use

In order to make sure that nothing happened to the wheelchair while it was being shipped to you, you should check the following items before beginning to use it:

- that all products ordered are included in the delivery, including operating instructions and possible other documentation. If you suspect that something is missing, then contact your supplier or Permobil for more information as soon as possible.
- that no transport-related or other damages have occurred to the wheelchair, seat and its accessories. If you discover that something has been damaged or in some other manner appears to be incorrect, then contact your supplier or Permobil for more information as soon as possible before you continue the checks.

We recommend that you charge your wheelchair's batteries before you begin using it. The chapter titled "Charging the Batteries" describes how to do this.

Always be sure that tires are inflated properly before driving.

If you experience that the wheelchair in any manner is not behaving as expected or if you suspect that something is wrong: abort the test drive as soon as possible, shut off the wheelchair and get in touch with your service contact or Permobil for more information.

## Warnings and precautions

### CAUTION!

#### **Operation**

Permobil recommends the use of wheelchair lights at all times user is riding near public rights of way. Use extreme caution when driving near unprotected ledges, drop-offs or on elevated surfaces. Unintended movement or excessive speed in these areas can lead to personal injury or property damage.

### CAUTION!

#### **Operation**

Do not drive the wheelchair over any curbs or edges higher than indicated in the technical specifications section of the manual. When driving over a curb or similarly elevated surface, you must cross the surface at a 90 degree angle (perpendicular). Crossing such surfaces at any other angle may result in the wheelchair tipping.

Reduce your speed when driving on uneven terrain or soft surfaces. Do not use your wheelchair on stairs or escalators. Always use an elevator.

Do not lift or move the wheelchair by any of its removable parts. Doing so could lead to personal injury and property damage, including damage to the wheelchair.

** CAUTION!****Operation**

Do not let children drive the wheelchair without supervision. Do not drive the wheelchair on public streets or roadways. Obey all local pedestrian rules and be aware that vehicle drivers may have difficulty seeing you. Do not operate your wheelchair under the influence of alcohol. Consumption of alcohol may impair your ability to operate your wheelchair safely.

Some physical limitations or use of medication, either prescribed or over-the-counter, may limit your ability to operate your wheelchair safely. Be sure to consult with your physician about your physical limitations and medications.

** WARNING!****Modifications**

Any unauthorized modifications to the wheelchair or its various systems may increase the risk of personal injury and property damage, including damage to the wheelchair.

All modifications to and interventions in the vital systems of the wheelchair must be performed by a qualified service technician authorized by Permobil to perform such service on Permobil products.

** WARNING!****Weight Limitations**

The maximum user weight for your Permobil is set forth in the specification section in this Owner's Manual for current seat model. Operation of the wheelchair by users who exceed the maximum allowable user weight can lead to personal injury and property damage, including damage to the wheelchair, as well as voiding any applicable warranty to the wheelchair.

Do not carry passengers on the wheelchair. Doing so can lead to personal injury and property damage, including damage to the wheelchair.

** CAUTION!****Prior to Riding**

In some instances, including where certain medical conditions exist, users should practice operating their wheelchair under the supervision of an assistant who is familiar with the operation of the wheelchair and with the abilities and limitations of the user.

** CAUTION!****Operation - Inclines**

When driving downhill, select the slowest speed and proceed with caution. Driving down an incline can shift the user's center of gravity forward. If the wheelchair rolls faster than you would like, stop the wheelchair by releasing the joystick and begin descending again at a slower speed.

Avoid sudden stops or starts. Stop by releasing joystick rather than by turning the power off. Turning off power while the wheelchair is in motion will cause the wheelchair to stop suddenly. Be sure to keep all recommended positioning belts securely fastened at all times.

When driving up an incline, try to keep moving at a steady speed. Stopping and starting the chair while moving up an incline makes the wheelchair more difficult to control.

Do not drive up or down slopes with a gradient greater than indicated in the technical specifications section of the manual. There is a risk that the wheelchair will not maneuver safely.

** WARNING!****Operation - Inclines**

Do not drive the wheelchair where the sideways gradient is more than indicated in the technical specifications section of the manual. There is a risk of tipping over.

Do not drive up or down ramps that are not equipped with proper edge protection along the sides of the ramp to prevent the wheelchair from falling off of the ramp.

When driving up an incline, be sure to drive your wheelchair straight up the incline (perpendicular). Driving at an angle up an incline increases the risk of tipping or falling. Use extreme caution when driving up an incline.

Do not drive down or up a hazardous incline, such as a surface covered with snow, ice, or wet leaves or a surface that is uneven. Also avoid driving on ramps that do not have proper edge protection.

** WARNING!****Operation - Turning**

Turning your wheelchair at high speeds can create the possibility of the wheelchair tipping and personal injury. The possibility of tipping can be increased by high turning speed, sharp turns, uneven surfaces, abrupt changes in direction, and driving from an area of low traction (e.g. lawn) to an area of high traction (e.g. sidewalk). To protect against tipping, personal injury and property damage, reduce speed and reduce the sharpness of your turn when turning.

** WARNING!****Operation - Freewheel Mode**

In order to prevent the wheelchair from rolling away, ensure that the wheelchair is on a level surface before releasing the brakes.

In order to avoid personal injury do not use your Permobil in freewheel mode without an attendant present. Do not attempt to put the wheelchair in freewheel mode by yourself while seated in it.

Do not put your Permobil in freewheel mode while on an incline. This could cause the wheelchair to roll on its own, causing injury and property damage, including damage to the wheelchair.

** CAUTION!****Driving on a Loose/Soft Surface**

When the wheelchair is set to its lowest speed and the batteries are not fully charged, driving on certain surfaces, for example gravel, sand or thick carpeting, can involve constrained navigability.

** CAUTION!****Driving in Darkness**

Driving in the dark may only be done if your wheelchair is equipped with functioning lighting in the front and the back, or as per the applicable national or local traffic regulations.

** WARNING!****Passengers**

The wheelchair is not intended to transport passengers, regardless of the age of the passenger. The Maximum User Weight stated in the Owner's Manual for your seating system includes the user and any personal effects. The Maximum limit should not be exceeded. The wheelchair's manoeuvrability and stability can be degraded as a result.

** WARNING!****Driving with Seat Lift/Seat Tilt/ Backrest Recline**

Be careful in making sure that nothing gets stuck between the chassis and the seat when the seat lift/seat tilt is operated. Operating the seat lift, seat tilt/ backrest recline changes the center of gravity and increases the risk of tipping over. Always drive in low speed and only use those seat functions on level ground, and not on hills, ramps, slopes or other inclines. Using those seat functions while driving on inclines can lead to personal injury and property damage, including damage to the wheelchair.

** WARNING!****Center of Balance**

The possibility of this wheelchair tipping and the point where this wheelchair will tip forward, back or to the side depends on its center of balance. Please note that the following factors can affect the wheelchair's center of balance:

- Elevation of the seat
- Height and angle of the seat
- Body position or weight distribution
- Driving on an incline such as a ramp or a hill
- Use of a backpack or other accessories, depending on the amount of weight added.
- If your wheelchair begins to move in an unexpected manner, immediately release the joystick to stop the wheelchair. Except in an emergency, do NOT use the on/off button to stop your wheelchair, as this will cause the wheelchair to stop abruptly and may cause personal injury.

** WARNING!****Fixed seat post**

Adjusting the seat height may only be performed by an authorized service provider. See the service manual for more information.

 **WARNING!****Positioning Belt**

Always wear your positioning belt while in your wheelchair. If signs of damage or wear appear, replace the positioning belt immediately through your Permobil dealer.

 **WARNING!**

**Support Wheels**

If your wheelchair is equipped with support wheels, they must always be mounted when the wheelchair is being driven.

**⚠ WARNING!****Transfer into and out of the chair**

Be sure that the power is turned OFF before entering or leaving the wheelchair and before lifting the control side armrest.

When transferring into or out of the wheelchair, every precaution should be taken to reduce the distance between the wheelchair and the place to which the user is transferring. Overextending this distance can cause user to overexert, lose balance, or fall.

Permobil recommends that users transfer in the presence of or with the assistance of an attendant.

Use caution when bending or reaching.

Never use the joystick as a handhold or point of support.

Do not use foot plates or armrests as supports when transferring into or out of the wheelchair. The footplates and armrests are not designed to be weight-bearing structures. Excessive force may cause them to give way, resulting in personal injury or property damage, including damage to the wheelchair.



** WARNING!****Transport**

The wheelchair must only be transported in a vehicle that is approved for such purposes. Carefully check that the wheelchair is properly secured and that the wheel locks are engaged. When transporting the wheelchair in a motor vehicle, the wheelchair must be secured by fastening straps through the brackets in the front and the back, each marked with a yellow sticker. Do not connect the fastening straps to any other part of the wheelchair. Secure the wheelchair according to the manufacturer of the vehicle restraint systems (fastening straps) instructions. Always make sure that the fastening points on the transport vehicle are well-anchored.

** WARNING!****Transportation in Motor Vehicles**

Permobil recommends that users NOT be transported in any kind of vehicle while in their wheelchair, unless the user is in an approved Permobil wheelchair configuration, has secured the wheelchair according to the appropriate crash test standards, and is using a seatbelt attached to the vehicle. The only other safe alternative is that users be transferred into factory vehicle seating for transportation and use safety restraints made available by the auto industry.

Unless using a crash-tested approved Permobil wheelchair, never sit in your wheelchair while in a moving vehicle.

In an accident or sudden stop, you may be thrown from the chair and seriously injured or killed.

Permobil positioning belts are designed to position the user only and not to protect you in the event of a motor vehicle accident. The positioning belts do not replace use of a vehicle mounted restraint.

 **CAUTION!****Driving in Extreme Climate Conditions**

Permobil's wheelchairs are designed to withstand most adverse weather conditions, however to minimize the risk of being caught in difficult situations you should avoid using the wheelchair outdoors during, for example, severe cold, heavy rain or thick snow.

Also bear in mind that certain surfaces on the wheelchair can be heated up or cooled down in the event of prolonged exposure to intense sunlight or cold respectively.

 **WARNING!****Environmental Conditions**

Protect your wheelchair from exposure to any type of moisture, including rain, snow, or wash. Exposure to moisture can cause the chair to short-circuit, catch fire and cause personal injury or property damage. Do not operate your wheelchair if it has been exposed to moisture until it has dried completely.

If any of the shrouds or the joystick boot has cracks or tears, they must be replaced immediately. Failure to do so can allow moisture to enter the electronics and cause personal injury or property damage, including fire.

Do not operate your wheelchair in icy or slippery conditions. These conditions can lower the performance and safety of your wheelchair which could lead to an accident, personal injury and property damage, including damage to the wheelchair.

**NOTE:** Extreme care should be exercised when using oxygen in close proximity to electric circuits and other combustible materials. Contact your oxygen supplier for instruction in use of oxygen.

 **WARNING!****Maintenance and Service**

Carry out only the service and maintenance which are stated in the Owner's Manual. All other service and maintenance including programming of the control system must be performed by a qualified service technician authorized by Permobil to perform such service on Permobil products. Incorrect settings could result in unsafe operation of the wheelchair and could cause the chair to become unstable or uncontrollable. Such modifications may also void the wheelchair's warranty.

During all work on the electrical system of the wheelchair, the Main fuse must always be in OFF position. To avoid the risk of electric shock, use extreme caution when using metal objects while working on the batteries. Short-circuiting can easily cause an explosion. Never perform service on the wheelchair without using protective gloves and goggles. Failure to do so can lead to personal injury.

Do not use parts or accessories not authorized by Permobil. Use of unapproved "aftermarket" accessories and parts may cause changes in the wheelchair, which may make the wheelchair unstable or uncontrollable. Such use may also void the warranty on the wheelchair.

Connecting any unapproved electrical or electronic devices to the wheelchair's electrical system can cause damage to the chair and caused the chair to become uncontrollable or drive erratically. Such use may also void the warranty. The wheelchair is heavy and contains many moving parts, which means that the risk of being caught between them is always present.

 **WARNING!****Charging of Batteries**

Charging must be done in a well-ventilated room, not in a wardrobe or closet. Charging must not be done in a bathroom or wet room. Only chargers with a max 10 A charging current (average value) may be used (the RMS value of the charging current must not exceed 12 A). When the charger is connected, the chair must not and cannot be driven.

** WARNING!****Changing Batteries and Fuses**

The Main fuse must always be in OFF-position when batteries and fuses are replaced. Observe care in the use of metallic objects when working with batteries. A short-circuit can easily cause an explosion. Always use protective gloves and protective eye-glasses.

** WARNING!****Safety Circuits**

Permobil products are equipped with safety circuits. Inhibit circuits prevent the wheelchair from driving under certain conditions. Speed reduction circuits limit the wheelchair's maximum speed under certain conditions. Limit switch circuits limit the wheelchair's functions under certain circumstances. Overload protection circuits shut the wheelchair off in case of an overload. The user should stop using the wheelchair immediately and consult an authorized Permobil distributor if any of these circuits should become disabled.

Any attempt to modify the safety circuits will result in unsafe operation of the wheelchair and could cause the chair to become unstable or uncontrollable. Such modifications may also void the wheelchair's warranty.

** CAUTION!****Recycling of Batteries**

Used or broken drive batteries should be taken care of in an environmentally correct manner in accordance with locally applicable recycling directions.

** WARNING!****Filling Air into tires**

Check at regular intervals that the wheelchair's tires have the prescribed tire pressure. Incorrect tire pressure can cause deteriorating stability and maneuverability.

The prescribed tire pressure is 200-250 kPa (2-2.5 bar).

Note that overfilling causes a risk of explosion.

** WARNING!****Changing Tires**

Avoid the use of sharp-edged tools when working with tires.

** WARNING!****Storage**

The wheelchair and its accessories must always be shut off when they are not being used. Always store the wheelchair so that access for unauthorized individuals is avoided.

Never store the wheelchair in a room in which condensation can arise (mist or dampness on the surfaces) e.g. in pool areas, laundry rooms, or similar rooms.

If you are unsure as to how your wheelchair and its accessories should be properly stored, contact your supplier or Permobil for more information.

** WARNING!****Damages/malfunctions on the wheelchair and its accessories**

If you experience that the wheelchair in any manner is not behaving as expected or if you suspect that something is wrong: Stop driving as soon as possible, shut off the wheelchair and contact your service contact or Permobil for more information.

It's also of greatest importance that Permobil be informed if the wheelchair and its accessories have been subjected to transport damages, damages during driving or damages due to another cause as soon as possible after the event. There exists a risk that the wheelchair and its accessories can no longer be used in a safe and secure manner.

** CAUTION!****EMC Requirements**

The electronics of an power wheelchair can be affected by external electromagnetic fields (for example from mobile telephones). Similarly, the electronics of the wheelchair itself can also emit electromagnetic fields that can affect the immediate surroundings (for example certain alarm systems in businesses).

The limit values for Electromagnetic Compatibility (EMC) with respect to power wheelchairs is set in the harmonized standards for the EU in the Medical Devices Directive, No. 93/42/EEC.

Permobil's electronic wheelchair's comply with these limit values.



## **DESIGN AND FUNCTION**

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## General

The Koala MiniFlex is an electric front wheel drive wheelchair for outdoor and indoor driving. It is intended for children with physical disabilities.

The wheelchair consists of a chassis and a seat. The chassis contains the wheelchair's electronics, power supply and drive functions. The seat consists of a seat frame, seat plate/back rest, arm rest/leg rest, seat lift and any accessories/options such as a head rest, calf rest, chest support, etc.

- |                        |                 |
|------------------------|-----------------|
| 1. Back rest           | 7. Drive wheels |
| 2. Control panel       | 8. Rear wheels  |
| 3. Seat                | 9. Chassis      |
| 4. Serial number label | 10. Arm rest    |
| 5. Leg rest            |                 |
| 6. Foot plates         |                 |



*Figure 1. Overview*

## Drive package

The Koala MiniFlex is equipped with a drive package for each drive wheel. The drive package consists of an electric motor with a drive gear and magnetic wheel lock.



*Figure 2. Drive package*

## Wheels

The wheelchair's drive wheels, are available with pneumatic or Flat-Free (Foam Filled) tires. The caster wheels, have solid polyurethane tires.

## Lights and reflectors

The wheelchair is equipped with reflectors on the front, rear and sides. Front/rear lights are optional.



*Figure 3. Front Lights and Reflectors.*



*Figure 4. Rear Lights and Reflectors.*



*Figure 5. Side Reflectors*

## Batteries

The wheelchair batteries are situated under the battery cover in the centre of the chassis. The batteries are maintenance-free (gel-type), so there is no need to check fluid levels.



*Figure 6. Batteries.*

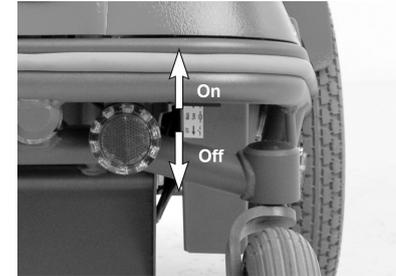
## Electronics

### Circuit Breaker

The Koala MiniFlex is equipped with an automatic Circuit Breaker, which can be reset after having been triggered. It also functions as a battery isolator and is controlled (ON/OFF) via the lever located at the back of the chassis. The lever (switch) can be activated without removing the cover.

#### **⚠ WARNING!**

If the main fuse is triggered, there is often a major electrical fault. The cause of the fault should be checked carefully before the switch is reset. Contact Service in case of doubt.



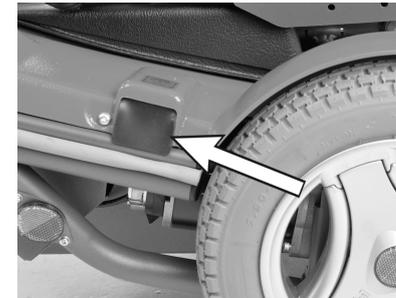
*Figure 7. Main fuse.*

### Charging socket

The charging socket is located on the the chassis right hand side.

#### **⚠ CAUTION!**

Always switch off the power supply to the control panel before interrupting the power with the main fuse.



*Figure 8. Charging socket*

## Electric Seat Functions

The electric seat functions are driven by an electric actuator which is steplessly controlled from the wheelchair control panel. Available functions may vary depending on how the seat is equipped.

### Functions

- Seat Lift

## Manual Seat Functions

The seat can be adjusted manually. Available functions may vary depending on how the seat is equipped.

### Functions

- Legrest Angle
- Backrest recline

## Other Adjustment Options

The control panel, arm rest, foot plates and other accessories such as calf rest, thigh support, trunk support, head rest, etc. have manual adjustment and setting options.

## Electric Seat Lift

Koala MiniFlex is fitted with an electrically controlled seat lift that allows the seat to be raised steplessly in order to adjust its height to tables, benches, etc.

If the seat angle catch is released, the chair will tilt back when the seat lift reaches its highest position. Pull out the knob and twist to release the catch. The chair will not tilt while the catch is engaged.

### **WARNING!**

When the seat lift is raised, the centre of gravity is also raised, increasing the likelihood of tipping over, so only use the seat lift on a level floor.

Always drive in the lowest speed and never tip the seat tilt or the back tilt so far that the wheelchair cannot be manoeuvred safely if it runs over a slope, uneven ground or over obstacles.



*Figure 9. Electric Seat Lift and seat angle catch.*

## Manual Seat Functions - Legrest Angle

The angle of the leg rest is adjusted.

1. Loosen the locking handle by turning it anti-clockwise.
2. Adjust the leg rest angle to the required angle and then lock into position by re-tightening the locking handle.
3. After adjustment, check that the leg rest is locked in position.

### **IMPORTANT!**

The angle of the locking lever can be changed by pulling it out and turning it.

### **WARNING!**

Do not put weight on the leg rest while adjusting the angle. There is a risk of pinching accidents.



*Figure 10. Legrest Angle*

## Manual Seat Functions - Backrest Recline

The inclination of the back rest can be adjusted infinitely using the back rest lock on the back of the back rest.

1. Loosen the quick-acting lock.
2. Adjust to the required angle.
3. Lock the quick-acting lock.

### CAUTION!

Check how tight the quick-acting locks are when the seat is adjusted. If the locks feel loose or if there is too little resistance when they are locked, adjust the tightness using the locking nut on the back of the locks.

### WARNING!

Do not put weight on the backrest while adjusting the angle. There is a risk of pinching accidents.



Figure 11. Backrest Recline

## SETTINGS AND ADJUSTMENTS

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## Negative Seat Position

The seat can be positioned to lean 5 degrees forwards.

1. Loosen the quick-acting locks on both sides of the seat.
2. Tilt the seat forwards until it is at the required seat angle.
3. Tighten the quick-acting locks on both sides.

### CAUTION!

Check how tight the quick-acting locks are when the seat is adjusted. If the locks feel loose or if there is too little resistance when they are locked, adjust the tightness using the locking nut on the back of the locks.



*Figure 12. Seat angle quick-acting lock.*

## Arm Rest Height

1. Loosen the locking screw with an Allen key.
2. Adjust the height.
3. Tighten the screw after adjustment.



*Figure 13. Arm rest height*

## Arm Rest Angle

1. Loosen the locking nut of the adjustment screw.
2. Adjust the arm rest to the required inclination by screwing the Allen screw down or up.
3. Tighten the locking nut.



*Figure 14. Arm rest angle*

## Arm rest — forward/ backwards

1. Loosen the locking screw under the arm rest.
2. Adjust forwards/backwards.
3. Tighten the locking screw after adjustment.



*Figure 15. Arm rest forwards/backwards*

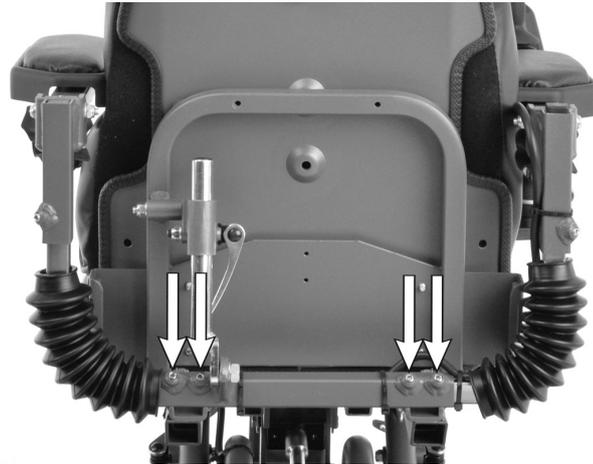
## Distance between the arm rests

1. Loosen the two locking screws on the rear bar of the seat frame on the right and left sides.
2. Adjust to the required distance, symmetrically or asymmetrically.

### **IMPORTANT!**

Ensure that the arm rests are free of the back rest when they are lifted up.

3. Tighten the locking screws.



*Figure 16. Distance between the arm rests*

## Foot plate height

1. Loosen the mounting screw of the foot plate.
2. Adjust the foot plate up or down to the required height.
3. Tighten the screw.

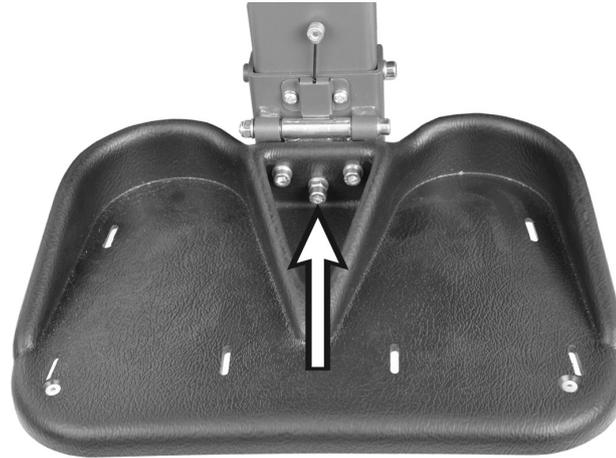
If the screw and its spacing sleeve are removed, the foot plate can be moved to the upper slot. The foot plate is adjusted in the same way there as in the lower slot.



*Figure 17. Foot plate height*

## Foot plate Angle

1. Loosen the locking nut for the adjusting screw on the back of the foot plate.
2. Adjust to the required angle by screwing the adjusting screw in or out.
3. Tighten the locking nut.



*Figure 18. Foot plate angle*

## Head rest (optional) height/angle

1. Loosen the locking knob (2).
2. Adjust to the required height.
3. Tighten the locking knob (2).
4. Tilt the head rest to the required position.



Figure 19. Head rest adjustment

## Head rest — Forwards/ backwards

1. Loosen the locking knob (1).
2. Adjust as required.
3. Tighten the locking knob (1).



Figure 20. Head rest adjustment

## **R-NET CONTROL PANEL WITH LCD MONOCHROME DISPLAY**

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## General

The Control Panel consists of a joystick, function buttons and a Display. At the back of the panel you also find the Charger Socket and two Jack Sockets.

Your wheelchair may also be equipped with an extra Seat Control Panel in addition to the control panel.



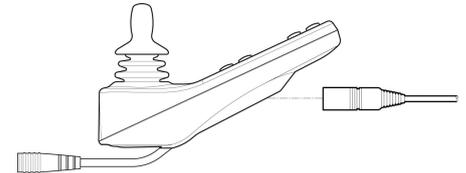
*Figure 21. Control Panel*

## Charger Socket

### **WARNING!**

The wheelchair's warranty will be voided if any device other than a battery charger supplied with the wheelchair, or the lock key is connected into the control panels charger socket.

This socket should only be used for charging or locking the wheelchair. Do not connect any type of programming cable into this socket. This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the E.M.C. performance of the wheelchair.)



*Figure 22. Charger Socket*

## Function Buttons

On the control panel there are a total of 10 Function Buttons.

### On/Off Button

The On/Off button applies power to the control system electronics, which in turn supply power to the wheelchair's motors.



*Figure 23. On/Off Button*

### Horn Button

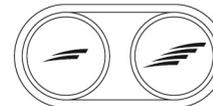
The horn will sound while this button is depressed.



*Figure 24. Horn Button*

### Maximum Speed Buttons

These buttons decrease/increase the wheelchairs maximum speed. Depending on the way the control system has been programmed a momentary screen may be displayed when these buttons are pressed.



*Figure 25. Speedbuttons, Decrease/  
Increase*

## Mode Button

The Mode button allows the user to navigate through the available operating Modes for the control system. The available modes are dependant on programming and the range of auxiliary output devices connected to the control system.



*Figure 26. Mode Button*

## Profile Button

The Profile button allows the user to navigate through the available Profiles for the control system. The number of available Profiles is dependant on how the control system is programmed. Depending on the way the control system has been programmed a momentary screen may be displayed when the button is pressed.



*Figure 27. Profile Button*

## Hazard Warning Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates/inactivates the wheelchairs hazards lights. this function is used when the wheelchair is positioned in a way making it a obstruction for others. Push the button to activate the hazard lights and push it again to inactivate them. When activated the indicator LED will flash in sync with the wheelchair's indicators.



*Figure 28. Hazard Button and LED*

## Lights Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's lights. Depress the button to turn the lights on and depress the button again to turn them off. When activated the lights LED will illuminate.



Figure 29. Lights Button and LED

## Left Indicator Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's left indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the left indicator LED will flash in sync with the wheelchair's indicator.



Figure 30. Left Indicator and LED

## Right Indicator Button and LED\*)

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's right indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the right indicator LED will flash in sync with the wheelchair's indicator.

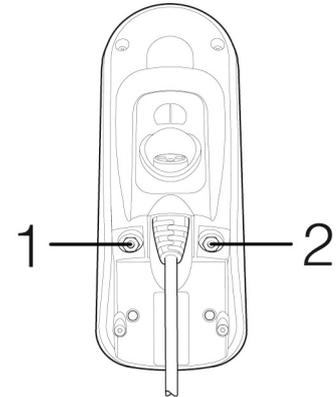


Figure 31. Right Indicator and LED

## Jack Sockets

The External On/Off Switch Jack (1) allows the user to turn the control system on and off using an external device, such as a buddy button.

The External Profile Switch Jack (2) allows the user to select Profiles using an external device, such as a buddy button. To change the Profile whilst driving simply press the button.



*Figure 32. Jack Sockets*

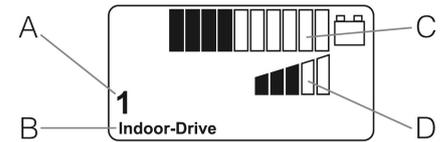
## Display

The status of the control system can be understood by observing the display. The control system is on when the display is backlit.

## Screen Symbols

The Drive screen for the R-net has common components, which will always appear, and components which will only appear under certain conditions. Below is a view of a typical Drive screen in Profile 1.

1. Current Profile
2. Profile Name
3. Battery Indicator
4. Speed Indicator



*Figure 33. Drive Screen*

## Locking/unlocking the Control System

The Control System can be locked in one of two ways. Either using a button sequence on the keypad or with a physical Key. How the Control system is locked depends on how your system is programmed.

### Keypad Locking

#### To lock the wheelchair using the keypad:

- While the control system is switched on, depress and hold the On/Off button.
- After 1 second the control system will beep. Now release the On/Off button.
- Deflect the joystick forwards until the control system beeps.
- Deflect the joystick in reverse until the control system beeps.
- Release the joystick, there will be a long beep.
- The wheelchair is now locked.

#### To unlock the wheelchair:

- If the control system has switched off, press the On/Off button.
- Deflect the joystick forwards until the control system beeps.
- Deflect the joystick in reverse until the control system beeps.
- Release the joystick, there will be a long beep.
- The wheelchair is now unlocked.



*Figure 34. The Lock Symbol is displayed when the wheelchair is locked.*

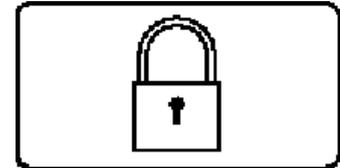
## Key Locking

### To lock the wheelchair with a key lock:

- Insert and remove a PGDT supplied key into the Charger Socket on the Joystick Module.
- The wheelchair is now locked.

### To unlock the wheelchair:

- Insert and remove a PGDT supplied key into the Charger Socket.
- The wheelchair is now unlocked.



*Figure 35. The Lock Symbol is displayed when the wheelchair is locked.*

## Seat functions

### **Not applicable to all seat models**

On some seats the electrical functions can be controlled with the help of the control panel joystick. Some models are equipped with three memory locations. Each memory location can store the position of the seat's adjustment device. This means that it is easy to retrieve a seat position saved earlier.

## Maneuvering the seat

### **⚠ CAUTION!**

If the symbol "M" appears together with the seat icon, this means that a memory function has been activated. Move the joystick to the left or right to choose a seat function instead.

1. Press the "Mode" button one or more times until an icon for seat function appears in the control panel display. See fig.
2. Move the joystick to the left or right to select a seat function. The icon for the seat function selected appears in the display.
3. Move the joystick forwards or backwards to activate the function.

Below is an example of the icons that may be shown in the display. Which icons are shown varies depending on the seat model and available functions.

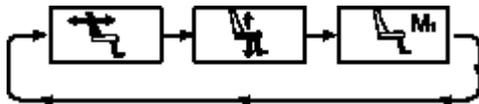


Figure 37. Move the joystick to the left or right to select a function. The icon for the function selected appears in the display.

### Return to drive mode

Press the "Mode" button one or more times until a standard display image with speed indicator appears in the control panel display - see fig.

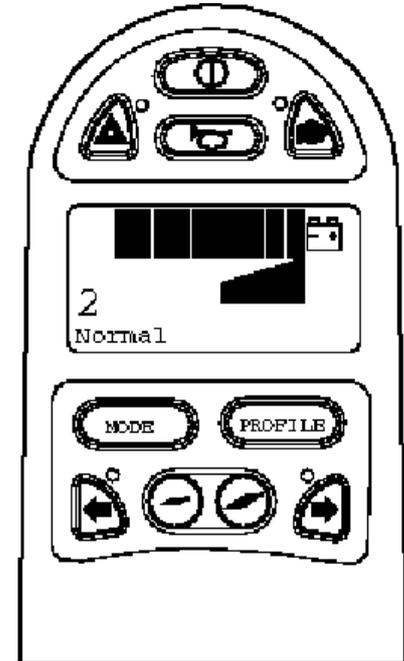


Figure 36. Standard display image with speed indicator.

## Memory

The control system on some seats have three memory locations for seat positions. Each memory location can store the position of the seat's adjustment device. This means that it is easy to retrieve a seat position saved earlier.

### Retrieving position from memory

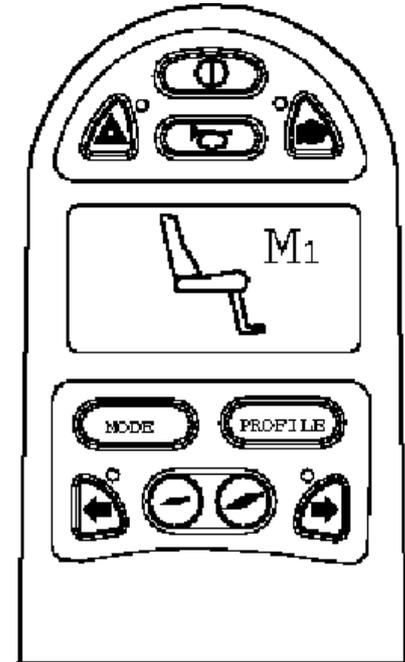
1. Press the "Mode" button one or more times until a seat icon appears in the control panel display.
2. Move the joystick to the left or right to select a memory location (M1, M2 or M3). A seat icon and memory symbol "M" for the memory location selected are shown in the control panel display - see fig.
3. Move and hold the joystick forwards. The seat adjusts to the position stored earlier. For reasons of safety, the joystick must be held forwards until the seat is fully adjusted to the required position. Once the seat has adjusted to the saved position, it stops moving.

### NOTE!

Movement of the seat can be stopped at any time by releasing the joystick.

### Return to drive mode

Press the "Mode" button one or more times until a standard display image with speed indicator appears in the control panel display - see fig.



*Figure 38. Memory function activated.*

### Saving position to memory

1. Set the seat's electrical functions to the desired mode.
2. If not activated, activate the seat/ memory function by pressing the "Mode" button one or more times until a seat icon appears in the control panel display.
3. Move the joystick to the left or right to select a memory location (M1, M2 or M3). A seat icon and memory symbol "M" for the memory location selected are shown in the control panel display - see fig.
4. Move the joystick backwards to activate the "save" function. An arrow will appear next to the memory symbol "M" - see fig.
5. Save the current position by moving the joystick forwards and holding it in that position until the arrow next to the memory symbol "M" disappears.

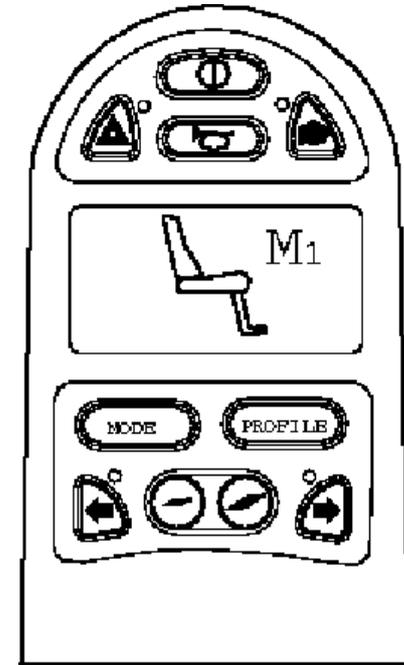


Figure 39. Memory function activated.

## Return to drive mode

Press the "Mode" button one or more times until a standard display image with speed indicator appears in the control panel display - see fig.

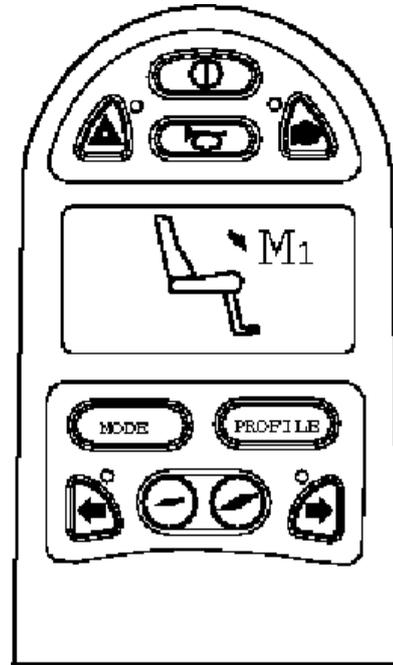


Figure 40. Save function activated.



## **R-NET CONTROL PANEL WITH LCD COLOR DISPLAY**

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## General

The Control Panel consists of a joystick, function buttons and a display. At the front of the panel is the Charger Socket. Two Jack Sockets are located on the bottom of the panel.

Your wheelchair may also be equipped with an extra Seat Control Panel in addition to the control panel.



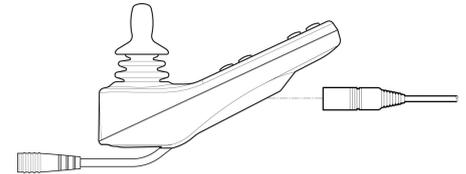
*Figure 41. Control Panel*

## Charger Socket

### **⚠ WARNING!**

The wheelchair's warranty will be voided if any device other than a battery charger supplied with the wheelchair, or the lock key is connected into the control panels charger socket.

This socket should only be used for charging or locking the wheelchair. Do not connect any type of programming cable into this socket. This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the E.M.C. performance of the wheelchair.)



*Figure 42. Charger Socket*

## Function Buttons

On the control panel there are a total of 10 Function Buttons.

### On/Off Button

The On/Off button applies power to the control system electronics, which in turn supply power to the wheelchair's motors.



*Figure 43. On/Off Button*

### Horn Button

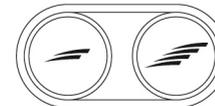
The horn will sound while this button is depressed.



*Figure 44. Horn Button*

### Maximum Speed Buttons

These buttons decrease/increase the wheelchairs maximum speed. Depending on the way the control system has been programmed a momentary screen may be displayed when these buttons are pressed.



*Figure 45. Speedbuttons, Decrease/  
Increase*

## Mode Button

The Mode button allows the user to navigate through the available operating Modes for the control system. The available modes are dependant on programming and the range of auxiliary output devices connected to the control system.

## Profile Button

The Profile button allows the user to navigate through the available Profiles for the control system. The number of available Profiles is dependant on how the control system is programmed. Depending on the way the control system has been programmed a momentary screen may be displayed when the button is pressed.

## Hazard Warning Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates/inactivates the wheelchairs hazards lights. this function is used when the wheelchair is positioned in a way making it a obstruction for others. Push the button to activate the hazard lights and push it again to inactivate them. When activated the indicator LED will flash in sync with the wheelchair's indicators.



*Figure 46. Mode Button*



*Figure 47. Profile Button*



*Figure 48. Hazard Button and LED*

## Lights Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's lights. Depress the button to turn the lights on and depress the button again to turn them off. When activated the lights LED will illuminate.



Figure 49. Lights Button and LED

## Left Indicator Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's left indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the left indicator LED will flash in sync with the wheelchair's indicator.



Figure 50. Left Indicator and LED

## Right Indicator Button and LED\*)

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's right indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the right indicator LED will flash in sync with the wheelchair's indicator.

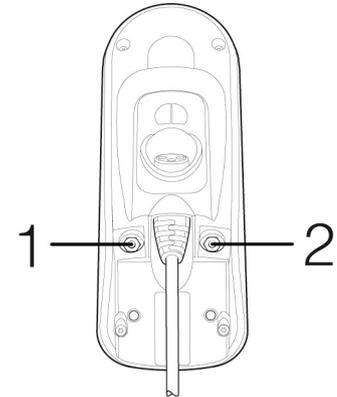


Figure 51. Right Indicator and LED

## Jack Sockets

The External On/Off Switch Jack (1) allows the user to turn the control system on and off using an external device, such as a buddy button.

The External Profile Switch Jack (2) allows the user to select Profiles using an external device, such as a buddy button. To change the Profile whilst driving simply press the button.



*Figure 52. Jack Sockets*

## Display

The status of the control system can be understood by observing the display. The control system is on when the display is backlit.

## Screen Symbols

The Drive screen for the R-net has common components, which will always appear, and components which will only appear under certain conditions. Below is a view of a typical Drive screen in Profile 1.

- A. Clock
- B. Speedometer
- C. Profile name
- D. Current profile
- E. Battery indicator
- F. Max. Speed indicator

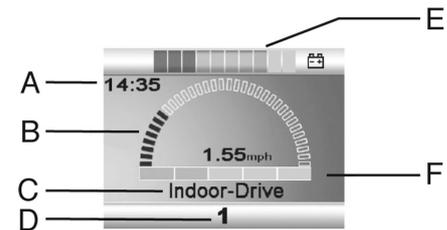


Figure 53. Drive Screen

## Battery Indicator

This displays the charge available in the battery and can be used to alert the user of the status of the battery.

**Steady:** This indicates that all is well.

**Flashing Slowly:** The control system is functioning correctly, but you should charge the battery as soon as possible.

**Stepping Up:** The wheelchair batteries are being charged. You will not be able to drive the wheelchair until the charger is disconnected and you have switched the control system off and on again.

## Speed Indicator

This displays the current speed setting.

The speed setting is adjusted using the Speed Buttons.

## Current Profile

The Profile Number describes which Profile the control system is currently operating in. The Profile Text is the name or description of the Profile the control system is currently operating in.



Figure 54. Battery Indicator



Figure 55. Speed Indicator



Figure 56. Current Profile

## In Focus

When the control system contains more than one method of direct control, such as a secondary Joystick Module or a Dual Attendant Module, then the Module that has control of the wheelchair will display the In Focus symbol.



*Figure 57. In Focus*

## Speed Limit

If the speed of the wheelchair is being limited; for example, by a raised seat, then this symbol will be displayed. If the wheelchair is being inhibited from driving, then the symbol will flash.



*Figure 58. Speed Limit*

## Restart

When the control system requires a restart; for example, after a module re-configuration, this symbol will be flashed.



*Figure 59. Restart*

## Control System Temperature

This symbol is displayed when the control system has intentionally reduced its own power, in order to protect itself against heat damage.



*Figure 60. Control System Temperature*

## Motor Temperature

This symbol is displayed when the control system has intentionally reduced the power to the motors, in order to protect them against heat damage.



*Figure 61. Motor Temperature*

## Timer

This symbol is displayed when the control system is changing between different states. An example would be entering into Programming Mode. The symbol is animated to show the sands falling.



*Figure 62. Timer*

## E-Stop

If the control system is programmed for latched drive or actuator operation, then it is normal for an Emergency Stop Switch to be connected into the External Profile Switch Jack. If the Emergency Stop Switch is operated or disconnected, this symbol will flash.



*Figure 63. E-Stop*

## Installation menu

The installation menu permits the user to set the clock, the display brightness, background color etc. Access the menu by holding down the keys for higher and lower maximum speed simultaneously. Scroll through the menu by moving the joystick up or down.

Exit the installation menu by first selecting "Exit" at the bottom of the menu and then moving the joystick to the right.

**Setting the time (Set Time)** (Setting the time (Set Time)): Shows the total distance traveled by the control system.

**Displaying the time (Display Time)** (Displaying the time (Display Time)): Select "Display Time" in the menu. Move the joystick right or left to select 12 or 24 hour display, or "Off" to remove the clock from the display.

**Distance measurement (Distance)** (Distance measurement (Distance)): Select "Distance" in the menu. Move the joystick to the right to go to the menu for setting distance measurement. Then select "Total distance", "Trip", "Distance display" or "Reset" by moving the joystick up or down.

- **Total distance** (Total Distance): Shows the total distance traveled by the control system.
- **Trip** (Trip Distance): Shows the total distance traveled since the last reset.
- **Distance display** (Display Distance): Selects Trip or Total Distance in the display.
- **Reset** (Clear trip distance): Move the joystick to the right to reset the Trip measurer.
- **Exit** (Exit): Move the joystick to the right to exit the installation menu.

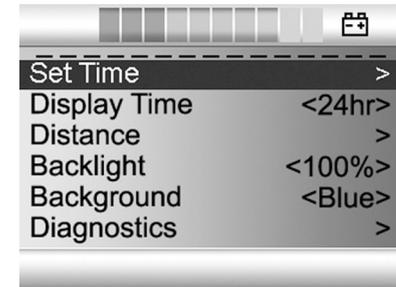


Figure 64. Installation menu

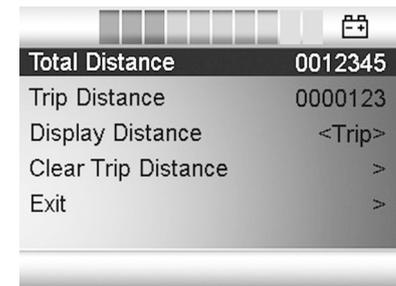


Figure 65. Distance measurement

## **R-NET LED CONTROL PANEL**

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## General

The Control Panel consists of a joystick and function buttons. At the front of the panel is the Charger Socket.

Your wheelchair may also be equipped with a Seat Control Panel in addition to the control panel.



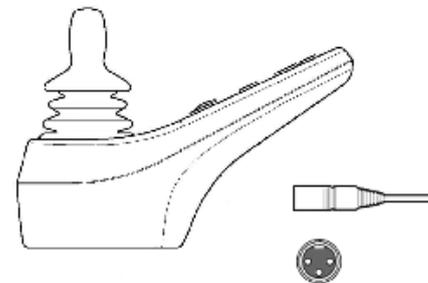
*Figure 66. Control Panel*

## Charger Socket

### **WARNING!**

The wheelchair's warranty will be voided if any device other than a battery charger supplied with the wheelchair, or the lock key is connected into the control panels charger socket.

This socket should only be used for charging or locking the wheelchair. Do not connect any type of programming cable into this socket. This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the E.M.C. performance of the wheelchair.).



*Figure 67. Charger Socket*

## Function Buttons

On the control panel there are a total of 10 Function Buttons.

### On/Off Button

The On/Off button applies power to the control system electronics, which in turn supply power to the wheelchair's motors.

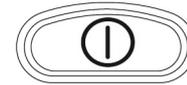


Figure 68. On/Off Button

### Horn Button

The horn will sound while this button is depressed.



Figure 69. Horn Button

### Maximum. Speed/Choice of Profile Button and LED

These keys normally reduce or increase the wheelchair's maximum speed. In special applications, the keys can instead control the choice of driving profile.

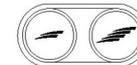


Figure 70. Maximum Speed/Choice of Profile Button and LED

## Mode Button

These keys normally reduce or increase the wheelchair's maximum speed. In special applications, the keys can instead control the choice of driving profile.



Figure 71. Mode Button

## Hazard Warning Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates/inactivates the wheelchairs hazards lights. this function is used when the wheelchair is positioned in a way making it a obstruction for others. Push the button to activate the hazard lights and push it again to inactivate them. When activated the indicator LED will flash in sync with the wheelchair's indicators.



Figure 72. Hazard Button and LED

## Lights Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's lights. Depress the button to turn the lights on and depress the button again to turn them off. When activated the lights LED will illuminate.



Figure 73. Lights Button and LED

## Left Indicator Button and LED

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's left indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the left indicator LED will flash in sync with the wheelchair's indicator.

## Right Indicator Button and LED\*)

### NOTE!

Only active if the wheelchair is provided with lights

This button activates and de-activates the wheelchair's right indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the right indicator LED will flash in sync with the wheelchair's indicator.



*Figure 74. Left Indicator and LED*



*Figure 75. Right Indicator and LED*

## Battery Voltage Indicator

Shows the voltage remaining in the batteries (from left to right):

Red+Yellow+Green = Fully charged

Red+Yellow = Half charged

Red = Charge the batteries

A good way of using this indicator is to learn how it works while you are driving. Like a fuel gage in a car, it does not show exactly how much "fuel" is left, but it gives you a rough idea so that you can avoid unnecessary stops due to discharged batteries.

The indicator shows a more exact value after approximately 1 minute of travel.

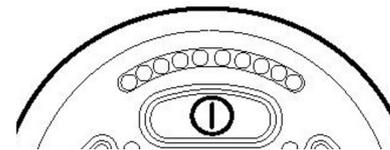


Figure 76. Battery Voltage Indicator

### CAUTION!

The battery voltage indicator also functions as a "fault indicator" for the wheelchair's electronics. See page 96 for further information.

## Maximum Speed Indicator

### Speed

Indicates the maximum speed set for the wheelchair.

1 - 2 lamps = Low speed

3 - 4 lamps = Average speed

5 lamps = Max. speed

### Driving profile

For special applications, the wheelchair can be programmed with more than one driving profile. In this case, the indicator's LEDs will instead display the selected driving profile. There can be up to 5 driving profiles.

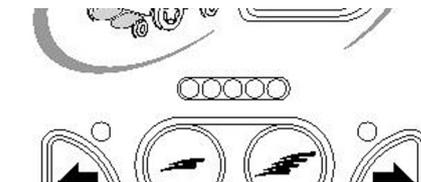


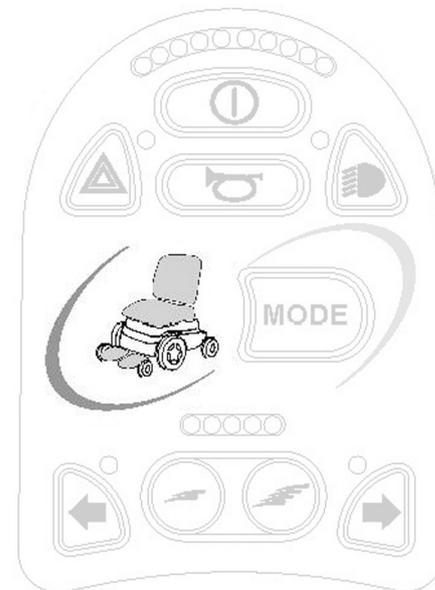
Figure 77. Maximum Speed Indicator

### CAUTION!

The indicator for max. speed/driving profile also functions as a “fault indicator” for the wheelchair’s electronics. See page 96 for further information.

## Seat Indicator

On certain seats the electrical functions for seat lift, seat angle, backrest angle and legrest angle are controlled with the control panel joystick. In this case the active seat function is indicated on the control panel seat indicator.



*Figure 78. Seat Indicator*



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## General

The Permobil Koala MiniFlex is designed for use both indoors and outdoors. When you drive indoors, you must be careful in, for example, narrow passages, when going through doors and entrances and when using lifts, ramps, etc.

You should also consider the risk of crushing when you use the electric seat lift and seat angle functions, above all if the wheelchair has been driven under tables, benches, etc. Outdoors you should remember to drive very slowly down steep slopes and to be very careful when driving on uneven surfaces, up slopes, on side slopes and over obstacles. Always observe a good safety distance when driving near edges and precipices.

We recommend that you do repeated test drives in an environment in which you feel safe so that you are very familiar with how the wheelchair and its accessories behave in different situations before you start to use the wheelchair on public roads and in other public locations.

## General - Driving

Check that the control panel is correctly fitted and the joystick is in the neutral position. Ensure that you have good support, for example the wheelchair's arm rest, for the part you use to handle the joystick with. Do not just use the joystick as a support. Fast turns and driving on uneven surfaces can interfere with your ability to handle the wheelchair safely.

### **WARNING!**

Always make sure your feet are correct and securely positioned on the foot plates before you operate the wheelchair. Use foot straps if needed. Failure to do this increases the risk of personal injury.

1. Switch on the power by pressing the start key on the control panel.
2. Select a suitable driving profile with the PROFILE key (if the system is programmed for more than one driving profile).
3. Move the joystick carefully forwards to drive forwards or backwards to reverse.
4. The speed setting is adjusted using the keys for higher and lower speed. The wheelchair's electronics allow very slow driving over edges. You can drive up to the edge and then carefully drive over it.

## Releasing the Brakes

### **WARNING!**

Ensure that the wheelchair is on a level and dry surface before releasing the brakes in order to prevent the wheelchair from rolling away.

The brakes can be released to make it possible to move the wheelchair manually.

- Press the on/off switch to switch off the wheelchair.
- Pull the lever back and up. The chair can now be moved manually.

### **IMPORTANT!**

Reset the brakes after moving the chair by pulling the lever down. When the brake release has been activated, the wheelchair cannot be driven



*Figure 79. Releasing the brakes*

## Joystick Error

If the joystick is moved from the central position before, during or immediately after the control system is switched on, the screen image for a shifted joystick will be displayed for 5 seconds. On control panels without a display, the LEDs on the battery voltage indicator will "wander" backwards and forwards instead. If the joystick is not released during this time, a joystick error will be registered and the wheelchair will not drive. To enable the wheelchair to drive again, ensure that the joystick is in the central position. Then switch the wheelchair off and on again.

If control system detects an error in the wheelchair electronics which needs attention, a "Diagnostics screen" will appear on control panels with display. On control panels without display, the battery voltage indicator LEDs will flash rapidly instead. If this happens, you should get in touch with your service contact as soon as possible.



Figure 80. Shifted Joystick.



Figure 81. "Moving" LEDs.

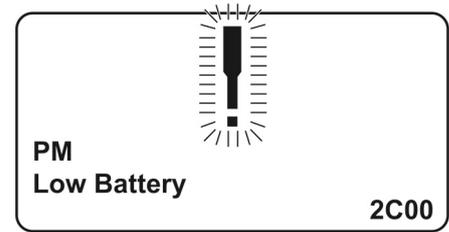


Figure 82. Diagnostics screen.

## Driving technique

The control panel's electronics "interpret" the movements of the joystick and move the wheelchair as intended. For normal driving, the user needs to employ no complex techniques, which is an advantage if the user is inexperienced. A good way of starting is quite simply to move the joystick in the direction you want to go. The wheelchair then moves in the direction in which the joystick is pointing.

However, always remember to drive as gently as possible and to avoid sudden braking and evasive maneuvers.

### CAUTION!

Do not take the first test drive on your own. The test drive is intended to establish how you and the wheelchair work together and you may need assistance.

Before driving, check that the brake release lever is in the drive position.

### WARNING!

Do not just use the joystick as a support. Fast turns and driving on uneven surfaces can interfere with your ability to handle the wheelchair safely. If the wheelchair moves in a way that you do not want, **RELEASE THE JOYSTICK!** This always makes the wheelchair interrupt the current movement.

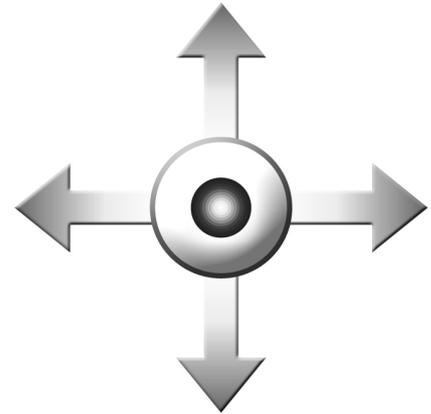


Figure 83. Joystick Maneuvering

## Driving rules

### Driving over obstacles

Do not drive the wheelchair over obstacles higher than 60 mm. If you drive over higher edges, there is a higher risk of tipping and of damage to the wheelchair.

You should always drive over obstacles with great caution.

#### **⚠ WARNING!**

Do not drive the wheelchair over obstacles higher than 60 mm. You should always drive over obstacles with great caution.

A raised seat lift/seat angle/back angle changes the centre of gravity and increases the risk of tipping. Therefore, use these seat functions only on flat surfaces and always drive with great caution and at low speed.



*Figure 84. Driving over obstacles.*

## Driving on side slopes

You should always drive on side slopes with great caution.

Avoid sudden evasive maneuvers and never drive so fast that you are unable to control the wheelchair safely without risks.

**You should be extremely careful when driving on side slopes with an uneven surface (for example grass, gravel, sand, ice and snow).**

### **WARNING!**

Do not drive the wheelchair on side slopes steeper than 10°. There is a risk of tipping.

A raised seat lift/seat angle/back angle changes the centre of gravity and increases the risk of tipping. Therefore, use these seat functions only on flat surfaces and always drive with great caution and at low speed.



*Figure 85. Driving on side slopes.*

## Driving downhill

You should always drive downhill at low speed and with great caution.

Avoid braking suddenly and sudden evasive maneuvers and never drive so fast that you are unable to control the wheelchair safely without risks.

**You should be extremely careful when driving downhill on an uneven surface (for example grass, gravel, sand, ice and snow).**

### **WARNING!**

Do not drive downhill on a gradient greater than 6°. Dynamic stability according to ISO 7176-2 = 6°. A raised seat lift/seat angle/back angle changes the centre of gravity and increases the risk of tipping. Therefore, use these seat functions only on flat surfaces and always drive with great caution and at low speed.



Figure 86. Driving downhill.

## Driving uphill

You should always drive uphill with great caution.

Avoid sudden evasive manoeuvres and never drive so fast that you are unable to control the wheelchair safely without risks.

**You should be extremely careful when driving uphill on an uneven surface (for example grass, gravel, sand, ice and snow).**

### **WARNING!**

Do not drive uphill on a gradient greater than 12°. Dynamic stability according to ISO 7176-2 = 6°. A raised seat lift/seat angle/back angle changes the centre of gravity and increases the risk of tipping. Therefore, use these seat functions only on flat surfaces and always drive with great caution and at low speed.



*Figure 87. Driving uphill.*

## Manual Release of the Magnetic Wheel Locks

The wheelchair is fitted with a manual brake release that can be released to make it possible to move the wheelchair manually. The brake release lever is located left hand side of the wheelchair.

### Release of wheel locks

1. Shut off the wheelchair using the start button on the control panel.
2. Move the lever up. The chair can now be moved manually.

### Engage the wheel locks

Reset the brakes after moving the chair by pulling the lever down.

#### **WARNING!**

Do not engage or disengage the wheel locks unless power to the chair is off.

In order to avoid the wheelchair rolling away, ensure that the wheelchair is on a level surface before releasing the wheel locks.

Be aware that the wheelchair will not have brakes when the wheel locks are in free-wheel position.

Make sure that the person pushing the chair has full control when the wheel locks are disengaged.

Always reset the wheel lock release after manually moving the wheelchair.



Figure 88. Brake release lever.

** CAUTION!**

When the wheel locks are released, the chair will not drive. If it does, contact an Authorized Permobil service centre as soon as possible.

## Battery charging

How frequently you need to charge the batteries in your wheelchair depends on a number of factors, including how you use your wheelchair, the temperature and age of the batteries and how they are made. All batteries also gradually lose capacity as they age.

The most important factor for the life of the batteries is how much power is taken out of them before they are charged and how often they are charged/discharged.

To achieve the best life, the batteries should not be discharged completely. Always charge the batteries immediately after they have been discharged.

If the battery voltage indicator shows that the batteries appear to be losing power faster than normal, the batteries may be worn out and need to be replaced.

 **CAUTION!**

If the batteries should be drained completely, it is important that you charge them up again as soon as possible since a complete loss of charge reduces the lifespan of the batteries.

** WARNING!**

Use care in the use of metallic objects when working with batteries. A short-circuit can easily cause an explosion. Always use safety gloves and protective eye-glasses.

Only chargers with a max 10A charging current (average value) may be used. (The RMS value of the charging current must not exceed 12A.

Charging must be done in a well-ventilated room, not in a wardrobe or closet. Charging must not be done in a bathroom or wet room.

The charger's charging cable must not be extended.

The charger can become hot and hence must not have anything covering it. The charger must be positioned so that there is an air gap on all of its sides, including below (do not set the charger on thick carpeting, for example).

The charger contact must be replaced if it is damaged or become hot during charging. Both the contact on the charger's cord and the wheelchair's control panel should be replaced if one of them is damaged or worn.

Replacement must be performed by qualified personnel.

## Charging

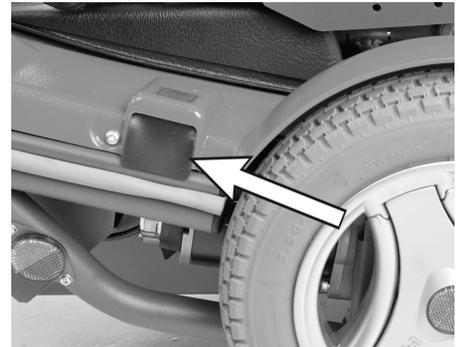
Connect the charger plug into the battery charging socket on the control panel. The moulded guide on the socket will help you to locate the plug.

### NOTE!

Description and Use of Battery Charger, see supplied Owner's Manual.

### **WARNING!**

Only use the battery charger that has been supplied with your wheelchair or recommended by Permobil. The use of incorrect chargers could damage the batteries, wheelchair, control system or charger itself, or may result in parts overheating creating the potential for burns or even fire. To avoid sparking and unnecessary wear and tear of the charging socket be sure that the main voltage and the charger is in the OFF position when connecting/disconnecting the charging cable to the charging socket.



*Figure 89. Charging socket.*

 **CAUTION!**

Ensure that the charger plug is pushed fully into position before turning on the battery charger. You will not be able to drive the wheelchair when the charger is connected. If the wheelchair does drive with the charger plugged in, contact an authorized Permobil service center as soon as possible.

## **TRANSPORT**

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## General

The wheelchair must only be transported in a vehicle that is approved for such purposes.

Carefully check that the wheelchair is properly secured and that the wheel locks are engaged. When transporting the wheelchair in a motor vehicle, the wheelchair must be secured by fastening straps through the brackets in the front and the back, each marked with a yellow sticker.

Do not connect the fastening straps to any other part of the wheelchair.

Secure the wheelchair according to the manufacturer of the vehicle restraint systems (fastening straps) instructions. Always make sure that the fastening points on the transport vehicle are well-anchored.

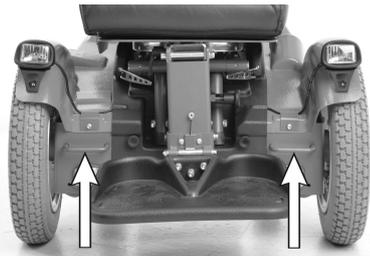


Figure 90. Front transport eyes.



Figure 91. Sticker for transport eyes.

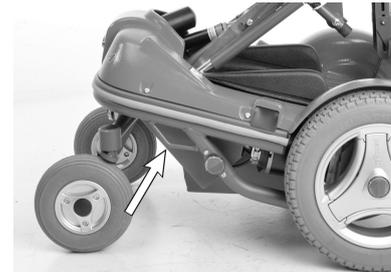


Figure 92. Rear transport eyes.

 **WARNING!****Transportation in Motor Vehicles**

Permobil recommends that users NOT be transported in any kind of vehicle while in their wheelchair, unless the user is in an approved Permobil wheelchair configuration, has secured the wheelchair according to the appropriate crash test standards, and is using a seatbelt attached to the vehicle. The only other safe alternative is that users be transferred into factory vehicle seating for transportation and use safety restraints made available by the auto industry.

Unless using a crash-tested approved Permobil wheelchair, never sit in your wheelchair while in a moving vehicle. In an accident or sudden stop, you may be thrown from the chair and seriously injured or killed. Permobil positioning belts are designed to position the user only and not to protect you in the event of a motor vehicle accident. The positioning belts do not replace use of a vehicle mounted restraint.

 **WARNING!**

If the wheelchair has to be transported with the user in the chair into the vehicle through a ramp, the wheelchair shall be secured against tipping backwards by a person behind.

Wheelchair users should transfer to the vehicle seat and use the vehicle-installed restraint system whenever it is feasible.

The vehicle restraint belt should not be worn twisted.

Always make sure that the vehicle restraint belt is not adjusted over sharp edges of the wheelchair.

The vehicle restraint belt should not be held away from the body by wheelchair components or parts, such as the wheelchair's armrest or wheels.

All wheelchair-mounted trays shall be removed and secured separately in the vehicle, or be secured to the wheelchair.

When possible, other auxiliary wheelchair equipment should be either secured to the wheelchair or removed from the wheelchair and secured in the vehicle during transit, so that it does not break free and cause injury to vehicle occupants in the event of a collision.

A poorly fastened chair can cause extensive damage and injury both to the people in the transport vehicle as well as to the vehicle itself and the wheelchair if it comes loose.

## **General advice for air transport**

When transporting your wheelchair by air, you should primarily pay attention to the following three things:

## CAUTION!

If you do not know what type of main fuse your wheelchair has, contact Permobil or your service contact. Some airlines may refuse to accept acid batteries on board.

To ensure that the wheelchair can be transported safely and no nasty surprises crop up at the last minute, you should always contact the airline before you travel.

### 1. Batteries

**Gel batteries:** In most cases, they do not need to be removed from the wheelchair.

If your wheelchair has an automatic main fuse, this must always be in the Off position.

**Acid batteries:** Most airlines require that batteries be removed from the wheelchair and transported in special boxes that the airline may provide.

### 2. The wheelchair's dimensions and weight

How much the wheelchair weighs and how large it is are important, depending on the type of airplane in which the wheelchair is to be transported. The smaller the airplane is, the smaller the wheelchair may be/weight and vice versa. Always check with the airline what rules apply.

### 3. Preventing damage

When transported by air, the wheelchair will be put with other goods in a confined space. Therefore, it is important to take preventive action to minimise transport damage to the wheelchair.

Cover the control panel with soft, shock-absorbing material (foam plastic or similar) and fold it in towards the back rest. Protect other protruding objects in a similar manner. Tape any loose cables to the seat or covers.

## **MAINTENANCE AND REPAIRS**

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## General

To ensure that your wheelchair works well, it is important for it to be used correctly and regularly maintained. A well maintained wheelchair lasts longer and has a lower risk of faults.

### **WARNING!**

Any unauthorized alterations to the wheelchair and its systems may lead to an increased risk of accident. All alterations to and interventions in the wheelchair's vital systems must be performed by a competent service engineer. In case of doubt, always contact a competent service engineer.

### **CAUTION!**

Some repairs may require tools other than those supplied with the wheelchair. The main fuse must always be switched off when batteries and fuses are replaced. Always switch off the power supply to the control panel before interrupting the power with the main fuse.

## Toolbag

The wheelchair comes with a toolbag with the following contents that can be used for maintenance and minor repairs.

TOOL	AREA OF USE
Allen keys	General maintenance/seat adjustment
11, 13 mm spanners	General maintenance/replacing batteries
Seat lift crank	Manually raising the seat lift
Security key	Locking/unlocking the wheelchair

## General - batteries/storage

### **WARNING!**

Any unauthorized alterations to the wheelchair and its systems may lead to an increased risk of accident. All alterations to and interventions in the wheelchair's vital systems must be performed by a competent service engineer. In case of doubt, always contact a competent service engineer.

- Please note that a battery discharges itself and that a discharged battery can burst when it is cold. If the wheelchair is to be stored unused for an extended period of time, the batteries must always be charged once a month to avoid them being damaged.
- The wheelchair must not be stored in areas subject to condensation (steam or moisture on surfaces), for example utility rooms or similar.
- The wheelchair may be stored in an unheated room. From the point of view of corrosion, it is best for the room to be a few degrees warmer than the surroundings as this keeps the room drier.
- If the wheelchair is fitted with acid batteries, the acid level should be checked regularly. If the wheelchair is fitted with gel batteries, the liquid level does not need to be checked.
- The life of the batteries depends entirely on regular charging.

### Short-term storage

For the charging process to produce a battery with good capacity, the temperature in the storage room should not be lower than +5 degrees. If it is stored at a temperature below +5 degrees, there is a higher risk that the battery has not been fully charged when it comes to be used and also a higher risk of corrosion.

**Long-term storage**

The battery may be stored in an unheated room but it should be charged at least once a month for maintenance purposes.

## Cleaning

Regular care and maintenance will prevent unnecessary wear and damage to your wheelchair. The following is general advice recommended by Permobil. For severe soiling of the upholstery or damage to the surface finish, contact Permobil for information.

### Metal surfaces

Due to the high quality powder coating an optimum corrosion protection is guaranteed. For normal cleaning it is best to use a soft cloth/sponge, hot water and a mild detergent. Wipe down carefully with a cloth and water, and dry off.

Remove scuff marks from semi-matt surfaces with soft wax (follow manufacturer's instructions).

Remove scuff marks and scratches from shiny surfaces using car polish, either liquid or paste. After polishing, apply soft car wax to restore the original surface gloss.

### Plastics

For normal cleaning, wash plastic surfaces with a soft cloth, mild detergent and hot water. Rinse thoroughly and dry with a soft cloth. Do not use solvents or abrasive kitchen cleaners.

### Upholstery, cloth/vinyl

For normal cleaning, wash the upholstery with lukewarm water and a mild non-abrasive soap. Use a soft cloth or brush. Before the surface dries, wipe off any water/soap residues with a clean, dry cloth. This procedure may be repeated to remove stubborn dirt or stains. Ink spots can sometimes be removed by washing with soap and water followed by isopropyl alcohol.

Do not use any cleaning method that is not listed above, as other methods may attack the vinyl and cause eventual degradation.

If necessary, the cover may be removed before cleaning. See also the washing instructions on the upholstery materials.

### Control panel

Use a soft cloth moistened with mild detergent and be careful when cleaning the joystick and the panel's display. Do not use solvents or abrasive kitchen cleaners. The panel must not be rinsed with water or any other liquid.

#### **WARNING!**

Never hose the wheelchair down as the electronics may be damaged. The wheelchair must always be turned off when being cleaned.

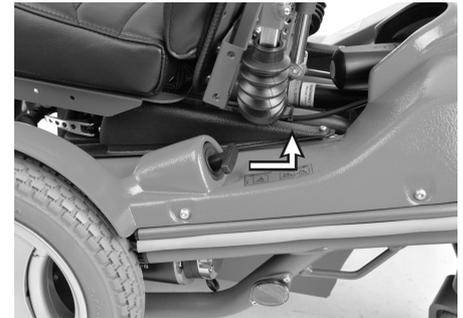
## Positioning belt

Check the condition of the positioning belt regularly in case any damage or worn places have developed. If signs of damage or wear appear, replace the positioning belt immediately through your Permobil dealer.

## Brake release

Check regularly, approximately once a month, that the brake release and the brake release lever are working properly.

When the brakes are released, it should not be possible to drive the wheelchair.



*Figure 93. Brake release lever*

## Drive wheels

### Filling tires with air

Check at regular intervals that the wheelchair's tires have the correct tire pressure. The incorrect tire pressure may result in lower stability and maneuverability. Too low tire pressure also results in abnormal wear and shorter range. Therefore, check regularly that the tire pressure is 200-250 kPa (2-2.5 bar).

1. Unscrew and remove the plastic cap on the valve on the tire.
2. Connect the compressed air nozzle to the valve and adjust the tire pressure to the correct level.



*Figure 94. Filling valve.*

## Changing inner tube

### NOTE!

Applies only if your wheelchair is fitted with pneumatic rear tires.

1. Switch off the main power switch on the control panel
2. Chock up the wheelchair so that the wheel turns freely and let out the air.
3. Remove the wheel, it's fitted with four screws.
4. Release the air.
5. remove the six screws holding the rim together.
6. Take the rim apart.
7. Replace the inner tube (2) in the tire (3) and fit together with the two rim halves (1&4). Tighten the six screws using a dynamometric wrench. **Tightening torque: 24 Nm.**
8. Fill the tire to recommended tire pressure, 200 kpa (2 bar).
9. Fit the wheel on to the wheelchair. Tighten the four screws using a dynamometric wrench. **Tightening torque: 24 Nm.**

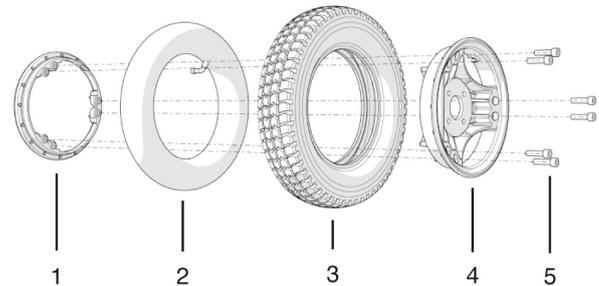


Figure 95. Changing inner tube.

## Battery Replacement

1. Place the wheelchair on a level surface.
2. Raise the seat to its maximum height.
3. Turn off the main power switch on the control panel.
4. Loosen the battery cover and disconnect the crush protection cable.
5. Loosen the battery connections.
6. Remove the spacer plate.
7. Lift out the batteries, taking note of their position.
8. Set in two new batteries.
9. Remount the spacer plate.
10. Connect the battery connections.
11. Reconnect the crush protection and replace the battery cover.
12. Lower the seat lift.

### **⚠ WARNING!**

Observe care in the use of metallic objects when working with batteries. A short-circuit can easily cause an explosion. Always use protective gloves and protective eye-glasses.

The batteries are heavy and must be handled with care.

Used or broken drive batteries should be taken care of in an environmentally correct manner in accordance with locally applicable recycling directions.

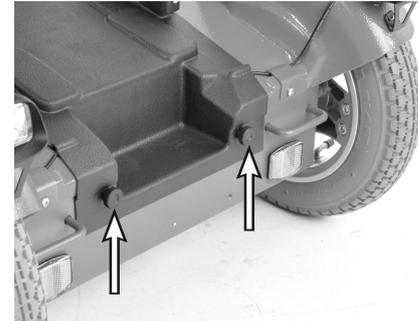


Figure 96. Knobs holding the front cover.

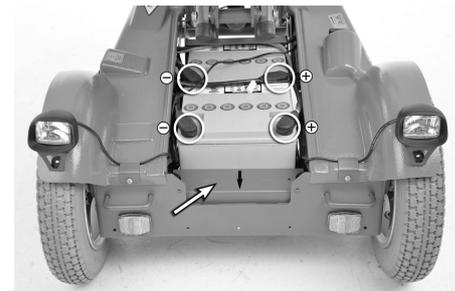


Figure 97. Battery connections and spacer plate.

## Resetting the main fuse/battery isolator

The main fuse also functions as a battery isolator but it is called the main fuse in the owner's manual.

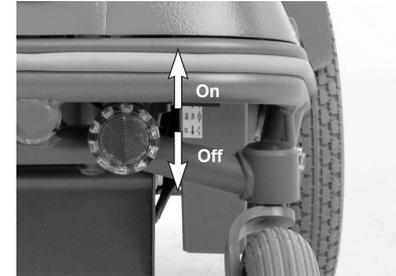
It is not normally necessary to replace the main fuse as it is automatic and can be reset when it has been triggered. It is reset by switching the switch to ON.

### **⚠ WARNING!**

If the main fuse is triggered, there is often a major electrical fault. The cause of the fault should be checked carefully before the switch is reset. Contact Service in case of doubt.

### **⚠ CAUTION!**

Always switch off the power supply to the control panel before interrupting the power with the main fuse.



*Figure 98. Resetting the main fuse.*



## **ACCESSORIES**

Accessories for Permobil power wheelchairs are subject to continuous development. Contact your nearest Permobil dealer for more information on the accessories available for your wheelchair.



## TECHNICAL SPECIFICATIONS



Length 965 mm.  
Height 750 mm.



Width 585 mm.



Smallest transportation size  
Length 740 mm.  
Width 585 mm.  
Height 680 mm.

## TECHNICAL SPECIFICATIONS

### General

Product name	Koala MiniFlex
Wheelchair class	B

### Dimensions and weight

Length	965 mm.
Width	585 mm.
Height	750 mm.
Minimum transport dimensions, l x w x h	740 mm. x 585 mm. x 680 mm.
Weight, incl. batteries	94 Kg.
Seat plane angle	0°.
Effective seat depth	250 – 350 mm.
Effective seat width	250 – 350 mm.
Seat surface height at front edge	340 – 590 mm.
Back rest angle	80 – 145°.
Back rest height	325 – 475 mm.
Footrest to seat distance	130 – 290 mm.
Leg to seat surface angle	90 – 150°.
Armrest to seat distance	130 – 290 mm.
Front location of armrest structure	0 – 400 mm.

## TECHNICAL SPECIFICATIONS

### Wheels

Drive wheel tire dimensions	2.50" x 8"
Pivot wheel tire dimensions	200 x 50 mm.
Rec. tire pressure	200 kPa (2 bar)

### Performance

Range	25 – 30 Km.
Min. turning radius	570 mm.
Reversing width	1040 mm.
Ability to Negotiate Obstacles (approach distance 50 cm)	60 mm.
Min. ground clearance	65 mm.
Hill-climbing ability	6°
Safe slope	6°
Static stability downhill	16°
Static stability uphill	19°
Static stability sideways	19°
Max. Speed forward	6,5 Km/h
Min. braking distance from max. speed.	1,1 m.
Max. User weight	35 Kg.

**TECHNICAL SPECIFICATIONS****Electronics**

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Rnet drive electronics type	CJSM-sw/ PM120
-----------------------------	----------------

**Batteries**

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Recommended battery type	24 cells, gel
Battery capacity	2x40Ah
Nominal voltage	12V
Charging time	8 hours
Weight	14,4 Kg.

**Fuses**

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Main fuse	63 A
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**Control force**

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Joystick	1,5 N
Keys	2 N

## **TROUBLESHOOTING**

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## Troubleshooting guide

The following troubleshooting guide describes a number of faults and events which may occur when you use your wheelchair, together with suggested remedies. Note that this guide cannot describe all the problems and events which may occur and you should always contact your service contact or Permobil in case of doubt.

EVENT	POSSIBLE CAUSE	REMEDY
The wheelchair cannot be started.	Batteries discharged.	Charge the batteries.
	The cable connection to the control panel has come loose.	Insert the cable in the control panel.
	Main fuse switched to OFF position after, for example, battery replacement.	Reset the main fuse. See page 123
	Main fuse triggered.	See page 123
The wheelchair cannot be driven.	Battery charger connected.	Stop charging and disconnect the charging cable from the wheelchair's charging socket.
	Brake release activated.	Reset the brake release.
	Wheelchair locked with the security key.	Unlock the wheelchair. See page 61
The wheelchair "switches itself off" after a certain period of inactivity (20-30 min.).	The electronics' energysaving mode has been activated.	Switch the wheelchair on again using the start key on the control panel.
The wheelchair stops while being driven.	The cable connection to the control panel has come loose.	Insert the cable in the control panel.
	Main fuse triggered.	See page 123

<b>EVENT</b>	<b>POSSIBLE CAUSE</b>	<b>REMEDY</b>
The wheelchair can only be driven at reduced speed. (Applies with an electric seat lift and seat angle.)	Seat lift or seat angle raised too high. See 40.	Lower the seat lift or seat angle.
The wheelchair cannot be charged.	Main fuse switched to OFF position after, for example, battery replacement.	See page 123

## **Diagnostics Rnet LED**

### **Battery voltage indicator**

Each time the wheelchair is started, parts of the wheelchair's electronics are checked. If any fault has occurred in these parts, this is displayed on the control panel's battery voltage indicator and the indicator for speed/driving profile in the form of one or more flashing lamps.

Troubleshooting and repairs must always be performed by competent personnel with good knowledge of the wheelchair's electronics. More information on troubleshooting and remedies can be found in the Service Manual for this wheelchair model.

** CAUTION!**

Any error signals on the indicators are not displayed while the wheelchair is being driven. They appear when it is next started.

If any part is replaced without Permobil's approval, the wheelchair's warranty lapses. Permobil accepts no liability for any loss that occurs as a result of a component of the R-net control system being opened, adjusted or modified without permission.

**Permanently on**

Everything is in order. The number of lamps that light up depends on the voltage remaining in the batteries. If the batteries are fully charged, all the lamps light up.

**Slowly flashing red lamps, 1–2 lamps**

The batteries need to be charged immediately.

**Rapid flashing, 1–10 lamps**

A fault has been detected in the wheelchair's electronics and the wheelchair can not be driven.

- Switch of the wheelchair.
- Check that all visible cables and the cable to the control panel are connected correctly.
- Switch the wheelchair on again. If the fault persists, count the number of flashing lamps and check for a possible cause and remedy in the table on the adjoining page.
- Do not use the wheelchair until the problem has been remedied or you have received other information from your service contact.

 **WARNING!**

Diagnostics should only be performed by persons with sound knowledge of the wheelchair's electronic control system. Incorrect or poorly performed repair works may make it dangerous to use the wheelchair. Permobil accepts no liability for any personal injury or damage to the wheelchair and its surroundings that occurs on account of incorrect or poorly performed repair work.

## Example of error messages and remedies

EXAMPLE OF ERROR MESSAGES AND REMEDIES	
 A row of 10 circles representing indicator lamps. The first circle on the left is filled black, while the remaining 9 circles are empty.	<b>1 Lamp — Low battery voltage</b> Check the condition of the batteries. Check the contact between the battery and the control unit.
 A row of 10 circles representing indicator lamps. The first two circles on the left are filled black, while the remaining 8 circles are empty.	<b>2 Lamps — Failure in left drive motor</b> Check the connection of the left drive motor.
 A row of 10 circles representing indicator lamps. The first three circles on the left are filled black, while the remaining 7 circles are empty.	<b>3 Lamps — Short-circuit in left drive motor</b> Check the left drive motor's contacts and cables.
 A row of 10 circles representing indicator lamps. The first four circles on the left are filled black, while the remaining 6 circles are empty.	<b>4 Lamps — Failure in right drive motor</b> Check the connection of the right drive motor.
 A row of 10 circles representing indicator lamps. The first five circles on the left are filled black, while the remaining 5 circles are empty.	<b>5 Lamps — Short-circuit in right drive motor</b> Check the right drive motor's contacts and cables.
 A row of 10 circles representing indicator lamps. The first six circles on the left are filled black, while the remaining 4 circles are empty.	<b>6 Lamps — Battery charger connected</b> Disconnect the battery charger.
 A row of 10 circles representing indicator lamps. The first seven circles on the left are filled black, while the remaining 3 circles are empty.	<b>7 Lamps — Joystick error</b> Check that the joystick has not been moved when the wheelchair is started.

EXAMPLE OF ERROR MESSAGES AND REMEDIES	
	<p><b>8 Lamps — Control system error</b> Check the contacts to the output stage.</p>
	<p><b>9 Lamps — Failure in brake circuit</b> Check the contacts to the magnetic brakes.</p>
	<p><b>10 Lamps — High battery voltage</b> Check the battery and the contacts between the battery and the output stage.</p>
	<p><b>7+5 Lamps — Communication error</b> A communication error has been indicated. Check that the cable to the control panel is not damaged and is correctly inserted.</p>
	<p><b>Actuator indicator — Actuator error</b> An actuator error has been indicated. If the wheelchair is fitted with more than one actuator, check which one is not working. Check the actuator's cable connections.</p>

## Diagnosics R-net LCD

When an error or a fault occurs in the wheelchair's electronics, information on it is displayed in the control panel's display. This information can then be used to diagnose where the error/fault occurred and its cause.

Troubleshooting and repairs must always be performed by competent personnel with good knowledge of the wheelchair's electronics. More information on troubleshooting and remedies can be found in the Service Manual for this wheelchair model.

### Diagnostic screens

#### Current diagnostic screen

When the control system's integrated protection circuits have been triggered so that the control system can no longer operate the wheelchair, a diagnostic screen is displayed in the control panel's display.

This indicates a system fault, i.e. R-net has detected a problem somewhere in the wheelchair's electrical system.

#### **NOTE!**

If the fault is in a module that is not currently being used, it may still be possible to drive the wheelchair, but the diagnostic screen is displayed occasionally.

Switch off the wheelchair and leave it off for a few minutes. Then restart the wheelchair. If the fault persists, you must switch off the wheelchair and contact your service contact. Write down the information displayed in plain text in the control panel's display and pass it on to your service contact.

Do not use the wheelchair until the problem has been remedied or you have received other instructions from your service contact.

** WARNING!**

Diagnostics should only be performed by persons with sound knowledge of the wheelchair's electronic control system. Incorrect or poorly performed repair works may make it dangerous to use the wheelchair. Permobil accepts no liability for any personal injury or damage to the wheelchair and its surroundings that occurs on account of incorrect or poorly performed repair work.

** CAUTION!**

If any part is replaced without Permobil's approval, the wheelchair's warranty lapses. Permobil accepts no liability for any loss that occurs as a result of a component of the R-net control system being opened, adjusted or modified without permission.

## **Example of a screen showing a system fault**

### **Identified module**

This indicates the control system module that detected the problem.

PM= Power module

JSM= Joystick module

### **Error message**

The error message provides a brief description of the error type.

### **Error code**

The four-digit code indicates which protection circuit has been triggered.

### **Repair of defective units**

Apart from specific OEM-approved spare parts (contact Permobil for further information on these), there are no replaceable parts in the R-net control system. Consequently, defective units must be sent to Permobil or a Permobil-approved repairer for repair.



## STICKERS

Take a good look at all the stickers on your wheelchair to become familiar with their meaning. These stickers contains important information for safe and proper use.

Never remove a sticker from your wheelchair. If a sticker becomes difficult to read or falls off, new replacement stickers may be ordered from Permobil.

### Read the instructions

The sticker indicates that there are instructions that should be read and understood before use or before adjustment is performed.



*Figure 100. Read the instructions.*

## Circuit Breaker/Battery Isolator

The sticker shows in what position the switch should be to turn the main power Off respectively On.

Description of the Circuit Breakers function is found on page 123.

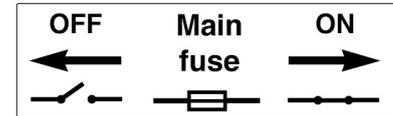


Figure 101. Circuit Breaker/Battery Isolater.

## Wheel Locks

The sticker shows the wheel lock release levers position, in released respectively activated state.

Description of the wheel locks function is found on page 101.



Figure 102. Wheel Locks.

## Tie-down point

The sticker indicates where the wheelchair must be secured during transport. There is a sticker next to each tie-down point.

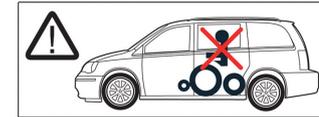
Description of transport of the wheelchair is found on page 108



*Figure 103. Tie-down point*

## Use as seat in motor vehicle prohibited

The sticker indicates that the wheelchair is not approved for use in motor vehicles. General advise regarding transport is found on page 108



*Figure 104. Use as seat in motor vehicle prohibited.*

## Crushing Hazard

The sticker indicates Crushing Hazard.



*Figure 105. Crushing Hazard.*

## Battery Connections and Fuses

The sticker shows the polarity of the batteries and where the fuses are found on the wheelchair.

Description of changing batteries is found on page 86-89.

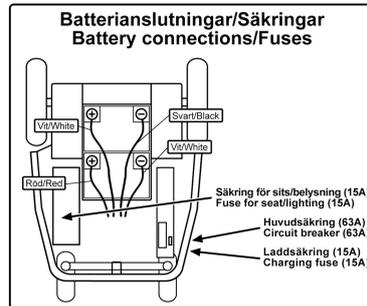


Figure 106. Battery Connections and Fuses.

## Serial number label

1. Made in (country of final assembly) by (address of site of final assembly)
2. Serial number
3. Product type
4. Date of assembly
5. EAN code
6. Maximum user weight

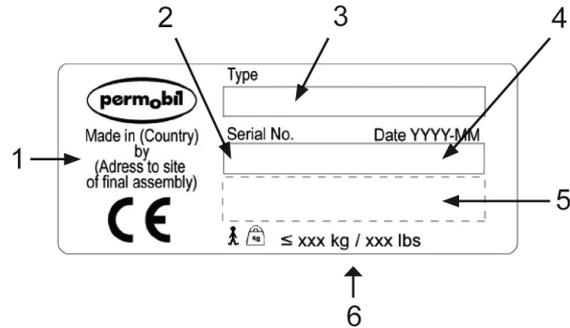


Figure 107. Serial number label.

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