User's Manual

English

M3 Corpus

Dear Permobil user

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 product. Your power wheelchair is designed to give you the highest possible comfort and safety and to meet safety and environmental requirements.

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

Produced and published by Permobil

Edition: 1
2017-01-27

Order no: 331589 eng-US

How to contact Permobil

Permobil Inc.
300 Duke Drive
Lebanon, TN 37090
USA

Phone: 800.736.0925
Fax: 800.231.3256
E-mail: support@permobil.com
E-mail: TechSupport@permobil.com

Head office of the Permobil group

Permobil AB
Box 120
861 23 Timrå
Sweden

Tfn: +46 60 59 59 00
Fax: +46 60 57 52 50
E-mail: info@permobil.se
Web: www.permobil.com

Contents

Important information

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 to 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 using the wheelchair.

Always keep these operating instructions within convenient reach when using your product, as the need for important information may arise concerning its use, safety and maintenance.

It is also possible to obtain information concerning our products from our website: www.permobil.com.

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

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

If you are visually impaired, this document can be downloaded at www.permobil.com. Use the magnifying tool in your PDF reader to achieve desired text and picture size.

Ordering documentation

Should you need another copy of this manual, one may be ordered from Permobil. Ask for the article number specified on the last cover page.

Technical Support

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

Be prepared to provide the wheelchair's serial number, located on the chassis, to ensure proper support.

Spare parts and accessories

Spare parts and accessories must be ordered through your dealer.

The expected service life of this product is five years.

Scrapping

Contact Permobil for information about scrapping agreements in force.

Warranty

A warranty registration card is attached to each new product. 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 product.

Reporting incidents

If an incident occurs, please contact your nearest Permobil representative. This is usually the same person you were in contact with at the time of purchase. To get in touch with your contact, use the link at www.permobil.com. Open your country page and the contact page. The page provides the necessary contact information and a document to help you provide us with the information we need to investigate the incident. Provide as much of the information as possible; it will be of great help to us.

Product approval

This product fulfills the requirements of EN 12184, EN 1021-1, EN 1021-2, ISO 7176-9, ISO 7176–14, ISO 7176-16 and ISO 7176-19.

Safety instructions

An power wheelchair is a motorized vehicle and special care must therefore be taken when using it.

Please read and follow all instructions and warnings in this manual before operating your power wheelchair. Incorrect use may both injure the user and damage the wheelchair. In order to reduce these risks, read the User'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 power wheelchair to be used is the responsibility of the user and his or her healthcare professional. Permobil is not responsible for inappropriate selections of models or features or improper mountings on the wheelchair.

Your power wheelchair 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 getting acquainted with the various buttons, functions and steering controls; the different seat adjustment possibilities, etc. of your wheelchair and its accessories before you begin using it.

Do not undertake your own first test drive without making sure help is available in the immediate vicinity should you need it.

Preparing for use

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

- that all products ordered are included in the delivery, including operating instructions and possible additional documentation. If you suspect that something is missing, contact your supplier or Permobil for more information as soon as possible.
- that no transportation-related or other damage has occurred to the product or its accessories. If you discover that something is damaged or appears to be incorrect in some other way, 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.

Always make sure that tires are inflated properly before driving.

If you perceive the wheelchair to be behaving in an unexpected manner or if you suspect that something is wrong, abort the test drive as soon as possible, switch off the wheelchair and get in touch with your service contact or Permobil for more information.

Definition of admonitions

The following admonitions describing warnings, remarks and explanatory texts are used throughout this manual to draw attention to items of significant importance to safety:

DANGER!

The Danger admonition

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

WARNING!

The Warning admonition

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

CAUTION!

The Caution admonition

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

NOTICE

The Notice admonition

Indicates an important but not hazardous situation which if not avoided could result in damage to the product or other property.

ⓘ Provides information about the conditions or circumstances under which the information given applies.

Warnings and precautions

CAUTION!

Operation, driving

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

CAUTION!

Operation

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

Reduce your speed when driving on uneven terrain or soft surfaces. Never use your wheelchair on stairs or escalators. Always take the 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, pulling and minor impacts

Do not use the wheelchair to pull any kind of object and never hang excessive weights on the backrest. Doing so could lead to personal injury and property damage, including damage to the wheelchair.

In the event of a collision with a wall, door or other fixed object when operating the wheelchair, always make sure all parts of the wheelchair are undamaged before operating it again. Failure to do so could lead to personal injury.

CAUTION!

Operation, adjust seating system for elevations

Be sure to adjust the position of your seating according to the limitations applicable to the wheelchair concerned before climbing obstacles or driving on uneven surfaces or slopes.

WARNING!

Risk of tipping over

Do not allow the leg rest to hit the ground when climbing obstacles or driving on uneven surfaces or slopes. Make sure that there is sufficient ground clearance.

CAUTION!

Operation

Do not let children drive the wheelchair without supervision. Do not drive the wheelchair on public streets or roads. 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 impairments or the use of prescription and non-prescription medication may limit your ability to operate your wheelchair safely. Be sure to consult with your physician about your physical limitations and medications.

WARNING!

Modifications

Do not modify your wheelchair or any of its components. Your wheelchair has been configured specifically for your needs as prescribed by your healthcare provider, and special skills, training and knowledge are needed to set up, modify and repair this wheelchair.

Initial setup and all modifications and repairs must be performed by a qualified service technician. For warranty service, contact the dealer from whom the wheelchair was purchased.

WARNING!

Do not modify safety parameters

The wheelchair is equipped with certain safety parameters that limit or inhibit wheelchair functions or, under certain conditions, prevent the wheelchair from being driven. Do not modify these safety parameters.

WARNING!

Weight limitations

The maximum user weight for your wheelchair is set forth in the technical specifications section in this User's Manual. 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 warranty applicable 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 - slopes

When driving downhill, select the slowest speed and proceed with caution. Driving down an slope may 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 more slowly.

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. Permobil recommends the use of securely fastened positioning belts at all times.

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

Do not drive up or down slopes with gradients greater than those set forth in the technical specifications section of this User's 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 greater than that set forth in the technical specifications section of this User's 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 to prevent the wheelchair from falling off the ramp.

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

Do not drive up or down hazardous inclines such as a surfaces 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 may cause the wheelchair to topple with personal injury as a result. The risk of tipping over is increased by high turning speeds, 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 avoid tipping over, personal injury and property damage, reduce speed and turn less sharply.

WARNING!

Operation - freewheel mode

In order to prevent the wheelchair from rolling away, make sure it is on a level surface before releasing the brakes.

To avoid personal injury, do not use your wheelchair in freewheel mode without an attendant present. Do not attempt to put the wheelchair in freewheel mode by yourself while sitting in it.

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

CAUTION!

Driving range

The driving range stated in the technical specifications of this manual represents the theoretical driving range when testing the wheelchair according to RESNA WC-2, Section 4. This test is performed under ideal conditions and actual driving ranges will vary depending on the battery charge, tire selection and driving conditions. Frequent driving on slopes, rough ground or frequently climbing curbs etc., will also reduce the driving range.

CAUTION!

Driving in the dark

Driving in the dark is only permissible if the wheelchair is equipped with functioning lighting at the front and rear, or as per applicable national or local traffic regulations.

WARNING!

Passengers

The wheelchair is not intended to carry passengers, regardless of the age of the passenger. The maximum user weight for your seating system is stated in the technical specifications section of this User's Manual. The stated user weight includes the user and any personal effects. The maximum limit may not be exceeded. The wheelchair's maneuverability and stability can be degraded as a result.

WARNING!

Driving with seat lift, seat tilt, backrest recline

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

WARNING!

Center of balance

The likelihood of the wheelchair's tipping and the point at which the wheelchair will tip forward, back or to the side depends on its center of balance. Note that the following factors 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
- The use of a backpack or other accessories, depending on the amount of weight added

If the wheelchair begins to move in an unexpected manner, release the joystick immediately to stop the wheelchair. Except in an emergency, do NOT use the On/Off button to stop the wheelchair, as this will cause the wheelchair to stop abruptly which may cause personal injury.

WARNING!

Fixed seat post

Only authorized service providers may adjust seat height.

WARNING!

Positioning belt

The positioning belt is an accessory.

A qualified service technician should install the positioning belt. Before operation the wheelchair, make sure that the positioning belt is correctly installed and that no excess material hangs down. Excess belt strap material could become caught in the wheelchair or other places in the surrounding area and cause injury to the user or damage to the wheelchair and its surroundings.

While the wheelchair is in use, the positioning belt, and any other components installed for the unique safety and positioning needs of the user, should be securely fastened.

If any sign of damage or wear appears, contact your Permobil dealer right away to obtain a replacement.

WARNING!

Transfer into and out of the wheelchair

Make sure the power is turned off before getting into or out of wheelchair and before lifting the control side armrest.

When transferring into or out of the wheelchair, every precaution must be taken to reduce the distance between the wheelchair and the place to which the user is transferring. Too great a distance may cause the user to overexert him or herself, 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 support.

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

Figure 1. Do not use footplates or armrests as supports.

Figure 2. Fold up the footplates. Pull the chair as close as possible.

NOTICE

Transporting the wheelchair

The wheelchair may be transported only in a vehicle that is approved for this purpose. The vehicle must be suitably designed, insured and equipped to transport a person in a wheelchair. No matter how securely it is fastened in the vehicle, a wheelchair is not designed to be a car seat and cannot offer the same degree of safety as is offered by standard car seats.

Before the transportation, confirm that the wheelchair is properly secured and that both wheel locks are engaged. Secure the wheelchair to the vehicle only at the tie-down points, both front and rear (marked with yellow stickers). Follow the manufacturer's instructions provided with the fastening straps. Instead of using fastening straps, the wheelchair may be secured with a locking system that is approved by Permobil. For alternative vehicle securement options, please consult your dealer.

CAUTION!

Damage during transport

It is extremely important to inform Permobil if the wheelchair and its accessories have suffered transport damage, damage during driving or damage from other causes as soon as possible after the event. There is a risk that the wheelchair and its accessories can no longer be used safely and securely. You need to contact your service provider or Permobil for further information. See contact information:
Head office of the Permobil group.

DANGER!

Risk of injury – user transported in wheelchair

Permobil recommends that users not be transported in any vehicle, while seated in the wheelchair.

If the wheelchair must be transported while the user is seated in it, the following requirements must be fulfilled:

- the vehicle is equipped with a locking system that is approved by Permobil. For alternative vehicle securement options, please consult your dealer.
- the locking system must be dimensioned for the total weight of the wheelchair and the user.
- the user uses a three-point seat belt attached to the vehicle.
- the wheelchair itself must be crash tested and approved.
- the wheelchair should be fitted with a headrest during transit.

If any of these requirements are not met, the user must be transferred to a vehicle seat and use a factory installed three-point seat belt during the journey.

WARNING!

Positioning belt does not replace a seat belt

The seating system's positioning belt is designed only to position the user; it does not provide any protection in the event of a road traffic accident. The positioning belt does not replace the use of vehicle-mounted three-point seat belt during journeys.

WARNING!

Secure loose objects during transportation

Auxiliary wheelchair equipment, loose or mounted on the wheelchair, must either be secured to the wheelchair or removed from it. Disassembled or movable auxiliary equipment must be properly secured in the vehicle during transportation. This is to prevent loose parts or parts that may come lose from causing injury to the occupants while in transit.

CAUTION!

Driving in extreme weather conditions

Our 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 in e.g. severe cold, heavy rain or thick snow.

Also bear in mind that certain surfaces on the wheelchair can get very hot or cold in the event of prolonged exposure to intense sunlight or cold.

WARNING!

Environmental conditions

Protect the wheelchair from exposure to any type of moisture, including rain, snow, mud or wash. Exposure to moisture may cause the chair to short-circuit, catch fire and cause personal injury or property damage. If it has been exposed to moisture, do not operate your wheelchair 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 may 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. Such 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.

Exercise extreme caution when using oxygen in close proximity to electrical circuits and other combustible materials. Contact your oxygen supplier for instruction in the use of oxygen.

CAUTION!

Maintenance and service

Only carry out the minor adjustments and maintenance specified in the User's Manual. All other service, repairs and maintenance on Permobil products, including control system programming, must be performed by a qualified service technician authorized by Permobil. Incorrect settings may result in unsafe operation of the wheelchair and cause it to become unstable or uncontrollable. Such modifications may also void the product's warranty.

CAUTION!

Non-approved aftermarket accessories

Do not use parts or accessories not authorized by Permobil.

The use of non-approved aftermarket accessories and parts may cause changes in the wheelchair that make it unstable or uncontrollable.

Use of unauthorized parts or accessories may result in the product warranty's being voided.

CAUTION!

Non-approved electrical or electronic devices

Connecting non-approved electrical or electronic devices to the wheelchair's electrical system may cause damage to the wheelchair and make it uncontrollable or erratic. Such use may also void the warranty.

CAUTION!

Risk of getting caught in pinch points

The wheelchair is heavy and contains many moving parts, which means there is an ever-present risk of getting caught in pinch points.

WARNING!

Charging batteries

Charge batteries in a well-ventilated room, not in a wardrobe or closet. Batteries must not be charged in a bathroom or wet room. Only use chargers with a max 10 A charging current (average value). The charging current RMS value must not exceed 12 A. When the charger is connected, the wheelchair cannot, and may not, be driven.

WARNING!

Replacing batteries and circuit breakers

Always turn the main circuit breaker to the Off-position when replacing batteries or circuit breakers.

Exercise caution when using metallic objects during work with batteries. A short-circuit can easily cause an explosion. Always use protective gloves and goggles.

WARNING!

Safety circuits

The products are equipped with safety circuits. Inhibit circuits prevent the wheelchair from being driven 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 conditions. Overload protection circuits switch the wheelchair off in case of an overload. Stop using the wheelchair immediately and consult an authorized Permobil distributor should any of these circuits become disabled.

Any attempt to modify the safety circuits will result in unsafe wheelchair operation and may 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 must be disposed of in an environmentally friendly manner in accordance with applicable local recycling regulations.

WARNING!

Inflating tires

At regular intervals, check that the wheelchair's tires have the correct pressure. Incorrect tire pressure may cause stability and maneuverability to deteriorate.

NOTICE

Changing tires

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

NOTICE

Storage

Always turn off the wheelchair and its accessories when it is not in use. Always store the wheelchair so that access for unauthorized individuals is prevented.

Never store the wheelchair in a room where there is a risk of condensation (mist or dampness on the surfaces) e.g. in pool areas, laundry rooms, or similar.

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

WARNING!

Damage and/or malfunctions

If you feel the wheelchair is not behaving as it should in any regard, or if you suspect that something is wrong, stop driving as soon as possible, switch off the wheelchair and contact your service provider or Permobil for further information. See contact information:
Head office of the Permobil group.

WARNING!

Flame resistance

Fabric components have been tested for flammability. Padded parts fulfill the requirements of EN 1021–1, EN 1021–2 and ISO 7176–16. Plastic parts fulfill the requirements of UL94.

CAUTION!

EMC requirements

The electronics in a power wheelchair can be affected by external electromagnetic fields (e.g. from cell phones). Similarly, the electronics in the wheelchair itself also emit electromagnetic fields that may affect the immediate surroundings (e.g. certain alarm systems in businesses).

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

Our power wheelchairs comply with these limit values.

Design and function

Overview

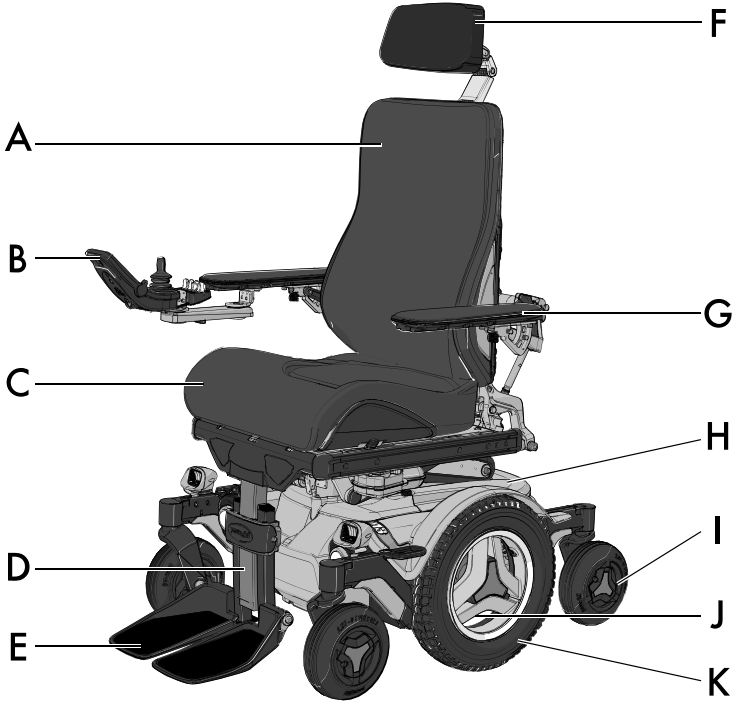


Figure 3. M3 Corpus overview.

A. Backrest
B. Control panel
C. Seat
D. Leg rest
E. Footplate
F. Headrest
G. Armrest
H. Chassis
I. Caster wheel
J. Serial number label on chassis, visible between the spokes.
K. Drive wheel

General

The M3 Corpus is an power mid wheel drive wheelchair for indoor use. It is intended for people with physical disabilities. The M3 Corpus can be used outdoors with restrictions, as it is not an all-terrain wheelchair.

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, backrest, armrest, leg rest, seat lift or fixed seat tube and any accessories or options such as a headrest, calf rest, etc.

Drive pack and shock absorbers

The wheelchair is equipped with one shock absorber and a drive pack for each drive wheel.

NOTICE

Shock absorber adjustments should be performed by personnel who are well-acquainted with the design and functionality of the wheelchair. When adjustment is needed, contact an authorized Permobil service center.

The drive pack consists of an electric motor with a gearbox and magnetic wheel lock.

Wheels

The wheelchair's drive wheels are available with pneumatic or flat-free (foam filled) tires. The casters have solid polyurethane tires.

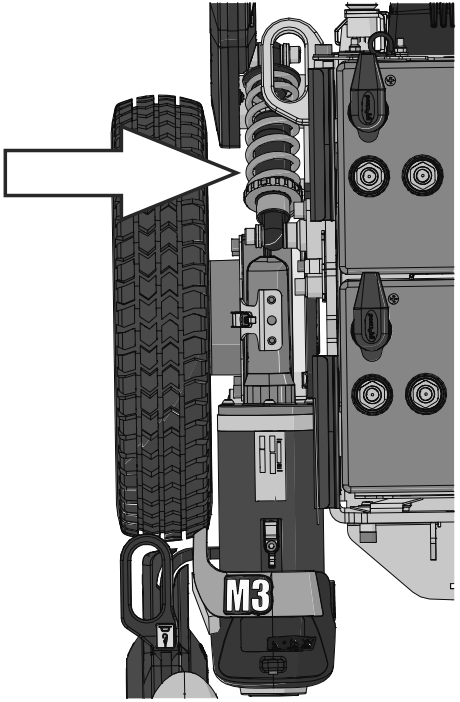


Figure 4. Drive pack and shock absorbers.

Lights and reflectors

The wheelchair is equipped with reflectors at front, rear and sides.

Front lights, rear lights and turn signals are optional.

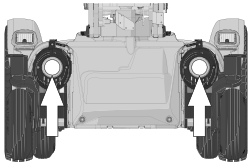


Figure 5. Front reflectors.

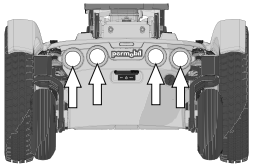


Figure 6. Back reflectors.

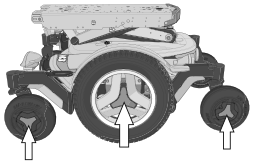


Figure 7. Side reflectors.

Batteries

The wheelchair's batteries are located under the covers of the chassis. Both batteries are easily accessible for maintenance and replacement.

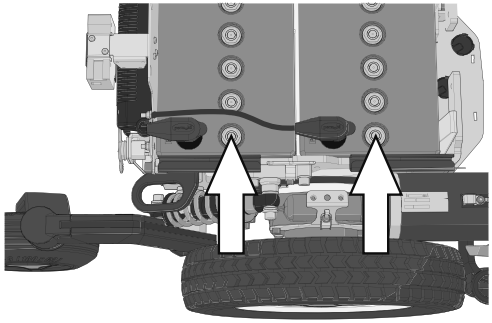


Figure 8. Location of batteries.

WARNING!

Handling batteries - avoid short-circuit

Exercise caution when using metallic objects during work with batteries. A short-circuit can easily cause an explosion. Always use safety gloves and goggles.

Remember that the batteries are heavy and must be handled with great caution.

NOTICE

Batteries - used or malfunctioning

Used or malfunctioning batteries must be disposed of responsibly in accordance with local recycling regulations.

Main circuit breaker

The wheelchair is equipped with an automatic main fuse which can be reset when it has been triggered.

It also functions as a battery isolator and is controlled, on or off, by using the lever found in a slot in the rear cover of the chassis.

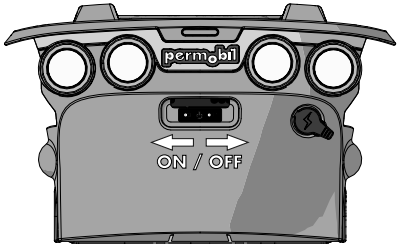


Figure 9. Main circuit breaker location.

NOTICE

Investigate tripped main circuit breakers

A tripped main circuit breaker often indicates a major electrical fault. The cause should be carefully investigated before resetting.

NOTICE

Before using the main circuit breaker

Always switch off the power to the control panel before switching off the main power with the main circuit breaker.

Charger socket

The charger socket is located at the rear of the chassis. The socket is covered with a protective cover; open it to access the contact.

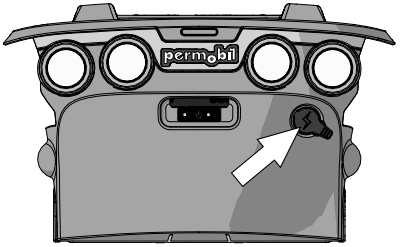


Figure 10. Charger socket.

CAUTION!

Switch off main circuit breaker

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

Power seat functions

The power seat functions are driven by an electric actuator which is steplessly controlled from the control panel of the wheelchair. The movement can be interrupted in any position and fixed there. Available functions may vary depending on how the seat is equipped.

Functions

Available functions may vary depending on the equipment fitted on your wheelchair.

- seat lift
- seat tilt
- backrest recline
- anterior tilt
- leg rest
- power adjustable leg length

WARNING!

Risk of pinching while using seat functions

There is a risk of pinch-point accidents when using the power seat functions. Make absolutely sure that nothing gets stuck between moving parts. Failure to do so may lead to personal injury.

Power seat lift

An power controlled seat lift permits steplessly variable raising or lowering of the seat in order to adjust the height to tables, benches etc.

When the seat lift is raised from the lowest position, the maximum speed of the wheelchair may be reduced.

Figure 11. Power seat lift.

WARNING!

Tipping risk - driving with seat functions in use

When operating the seat functions, the center of gravity is also shifted, increasing the risk of tipping over. Only use the seat functions on a level floor.

Always drive in the lowest speed and never tilt the seat or back so far that the wheelchair cannot be maneuvered safely.

Power seat tilt

The power controlled seat tilt makes it possible to set the preferred seat angle within the operating range.

Figure 12. Power seat tilt.

WARNING!

Tipping risk - driving with seat functions in use

When operating the seat functions, the center of gravity is also shifted, increasing the risk of tipping over. Only use the seat functions on a level floor.

Always drive in the lowest speed and never tilt the seat or back so far that the wheelchair cannot be maneuvered safely.

Power backrest

The backrest angle can be adjusted (via the recline control), allowing the user to set a recline angle as needed within the operating range.

Figure 13. Power backrest.

WARNING!

Risk of pinching while using seat functions

There is a risk of pinch-point accidents when using the power seat functions. Make absolutely sure that nothing gets stuck between moving parts. Failure to do so may lead to personal injury.

Anterior tilt

ⓘ Following section only applies to wheelchairs equipped with anterior tilt.

The anterior tilt function is only available on wheelchairs equipped with powered seat lift and seat tilt.

The anterior tilt function has programmable positions to meet individual needs. Typical tilt positions are; 10°, 20° .

- 10° makes it easier to reach objects, for instance on a table.
- 20° extends your reach further.

When the seat is being tilted forwards or backwards it will stop when it reaches a pre programmed position or a neutral, not tilted, position. In order to continue the movement forwards or backwards from a position; press the button or repeat the joystick maneuver again. The tilt angle may vary depending on how the anterior tilt is programmed and if any positioning limitations apply.

Figure 14. Anterior tilt.

WARNING!

Anterior tilt

Improper use of the anterior tilt feature on the wheelchair could cause the user to fall forward causing injury. Only use anterior tilt when recommended by a licensed clinical professional and/or ATP. Always use all positioning components on the wheelchair such as lap belts, chest straps, and knee blocks. They are installed to meet the user's specific safety needs.

WARNING!

Risk of pinching while using seat functions

There is a risk of pinch-point accidents when using the power seat functions. Make absolutely sure that nothing gets stuck between moving parts. Failure to do so may lead to personal injury.

Power leg rest

The leg rests can be raised to the preferred angle within the operating range.

Figure 15. Power leg rests.

Power adjustable leg length

Power adjustable leg length permits steplessly variable adjustment of the height of the footplates (leg rest length). In this way, the pressure on the back of the thighs is easily adjusted.

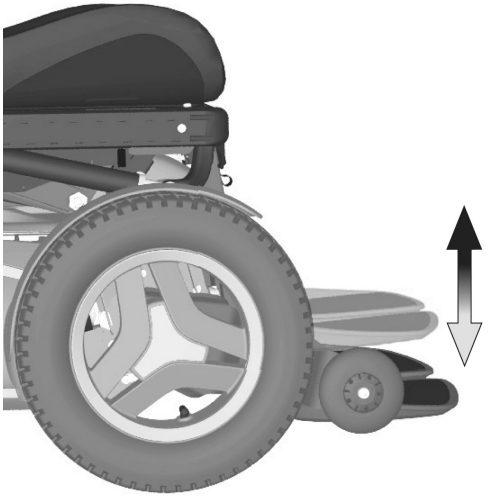


Figure 16. Power adjustable leg length.

Manual seat functions

The seat can be adjusted manually by adjusting manual locking tubes with quick-acting locks in a number of fixed positions. Available functions may vary depending on the equipment fitted on your wheelchair.

Figure 17. Manual clamp tube for the backrest recline.

Leg rest angle

The angle of the leg rest is adjusted via an adjustable locking tube with a quick-acting lock in a number of fixed positions.

1. Pull out the quick-acting lock's spring-action handle so that the locking tube moves freely and the leg rest can be angled.
2. Adjust the leg rest angle to the required angle and then lock the locking tube securely by releasing the handle so that it engages with the intended hole in the locking tube.
3. Check that the leg rest is locked in position.

WARNING!

Risk of pinching while adjusting leg rest angle

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

Figure 18. Manually adjusting leg rest angle.

Backrest recline

The angle of the backrest is adjusted via an adjustable locking tube with a quick-acting lock in a number of fixed positions. From an upright position the backrest can be inclined max. 45° backwards.

1. Pull out the quick-acting lock's spring action handle so that the locking tube moves freely and the backrest can be angled.
2. Adjust the backrest angle to the required angle.
3. Lock the locking tube securely by releasing the handle so that it engages in the intended hole in the locking tube.
4. Check that the backrest is locked in position.

WARNING!

Risk of pinching while adjusting backrest angle

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

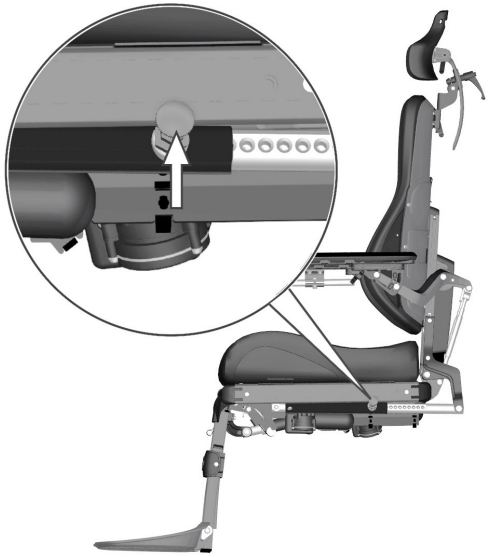


Figure 19. Manually adjusting backrest angle.

Settings and adjustments

Leg rest

WARNING!

Risk of crushing while adjusting leg rest

Do not subject the leg rest to load while adjusting.

Leg rest cover

The leg rest cover must be removed in order to adjust the leg rests.

1. Remove the leg rest cover by undoing the two screws.
2. Pull the cover directly forward.
3. Adjust the leg rests as preferred.
4. Push the leg rest cover into place.
5. Secure the cover with the two screws.

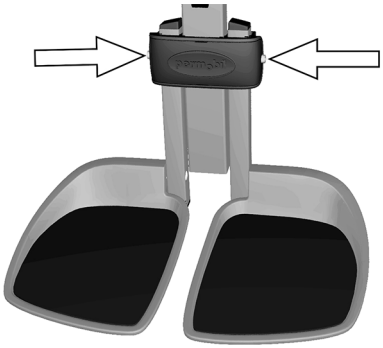


Figure 20. Adjustment screws for leg rest cover.

Leg rest length

The leg rest length can be adjusted continuously and secured using two locking screws.

1. Remove the leg rest cover.
2. Undo the leg rest's two inner locking screws.
3. Adjust the leg rest to the required length and secure by tightening the locking screws.
4. Check that the leg rest is fully secured.
5. Re-fit the leg rest cover.

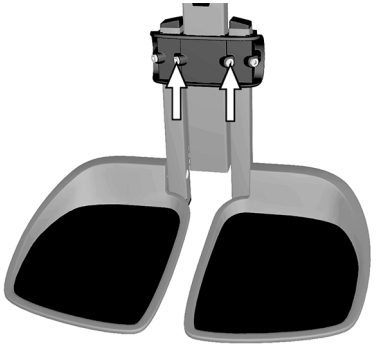


Figure 21. Adjustment screws for leg rest length.

WARNING!

Risk of injury – adjust floor-to-footplate clearance

After adjustment, and with the seat lift in its lowest position, make sure there is sufficient clearance, at least 1 inch, between the ground and the footplate at all times when moving the leg rest in or out. Perform this test with the user sitting in the wheelchair with his or her feet on the footplates.

Footplates

WARNING!

Risk of crushing while adjusting footplates

Do not subject the footplates to load while adjusting.

Footplate height

The height of the footplates can be adjusted individually and steplessly. They are secured using the two outer locking screws.

1. Remove the leg rest cover.
2. Undo the footplates' locking screws.
3. Adjust the footplates to the required height and secure by tightening the locking screws.
4. Check that the footplates are fully secured.
5. Replace the leg rest cover.

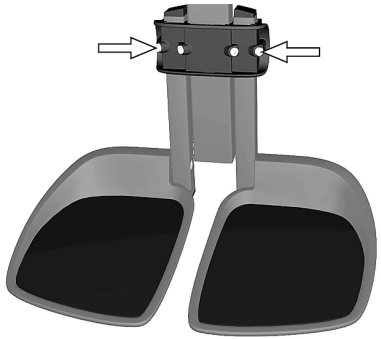


Figure 22. Adjusting footplate height.

WARNING!

Risk of injury – adjust floor-to-footplate clearance

After adjustment, and with the seat lift in its lowest position, make sure there is sufficient clearance, at least 1 inch, between the ground and the footplate at all times when moving the leg rest in or out. Perform this test with the user sitting in the wheelchair with his or her feet on the footplates.

Footplate angle

The angle of the footplates is adjusted using the stop screws under each footplate.

1. Tilt up the footplate.
2. Undo the lock nut.
3. Set to the required angle by adjusting the stop screw in or out.
4. Lock the stop screw in the required position using the lock nut.

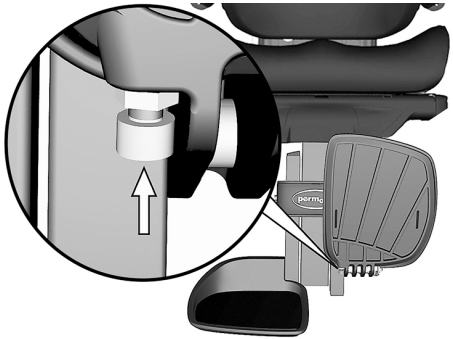


Figure 23. Footplate angle stop screw.

Armrest

WARNING!

Risk of crushing while adjusting armrests

Do not subject the armrests to load while adjusting.

Armrest swivel

The armrest can be angled inwards or outwards in order to provide optimal comfort for the user. The angle can be changed by pushing the front section of the armrest in or out.

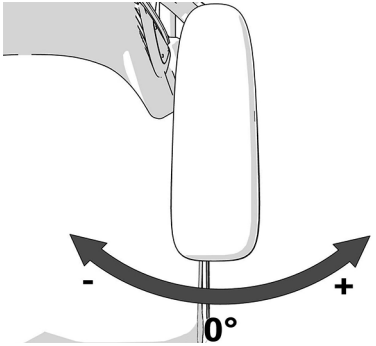


Figure 24. Adjusting the armrest angle.

WARNING!

Driving with armrest pointing outwards

Do not pass through narrow passageways with the armrest pointing outwards. This may lead to personal injury and property damage, including damage to the wheelchair.

Setting armrest swivel end position

The end positions are set by moving one or two screws between three different positions underneath the armrest. Fold the armrests up to get easier access to the screws.

1. Fold up the armrest.
2. Remove the screws underneath the armrest.
3. Insert the screws in the preferred positions.
4. Fold down the armrest.

Figure 25. Adjusting the armrest swivel end position.

Swivel settings		
A	Factory setting	Locked
B	Factory setting	0° to +15°
C	Custom setting	-15° to +15°
D	Custom setting	0° to +30°

Armrest height

The following tools are necessary for this task:

- 1 Allen key 5 mm.

The height of the armrest can be adjusted for optimal comfort. Refer to the scale on the center of the backrest to see the current height of the armrest.

1. Loosen the four screws on the rear of the backrest that secure the height of the armrest.
2. Adjust the armrests to the required position using the adjustment screw on the rear of the backrest.
3. Secure the height of the armrest by tightening the four screws on the rear of the backrest.

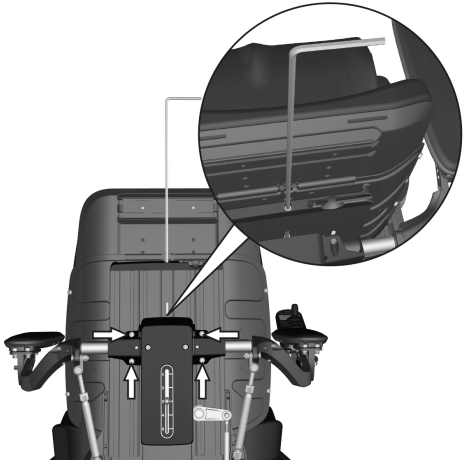


Figure 26. Adjusting the armrest height.

Armrest length

The armrest pads can be replaced and are available in a different lengths and with different upholstery.

Armrest angle

The armrests are both individually foldable. The armrest angle can easily be adjusted for optimal comfort.

1. Loosen the two lock nuts on the adjustment bars.
2. Adjust the armrest angle by turning the adjustment bars.
3. Tighten the two lock nuts to secure the adjustment bars in position.

WARNING!

Risk of crushing while adjusting armrests

Do not subject the armrests to load while adjusting.

Figure 27. Armrest angle adjustment bars.

Armrest height and angle

The following tools are necessary for this task:

- 1 Allen key 8 mm.

The armrest height and angle is normally adjusted as described previously. However, for special needs, the armrests can be adjusted individually for users who want a left and right arm rest at different heights and/or angles. The angle of the armrest is secured using a screw.

1. Loosen the two nuts (D) securing the position of the adjustment bar.
2. Adjust the armrest by turning the adjustment bar (C).
3. Secure into position by tightening the lock nuts (D).
4. Secure the armrest angle by moving the screw from a fixed position (A) to a flexible position (B).
5. Adjust the armrest to the required angle.
6. Secure by tightening the screw (B).

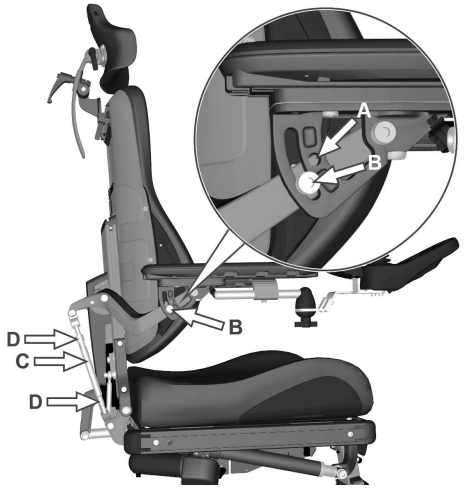


Figure 28. Adjusting the armrest height and angle.

NOTICE

Armrest flexible position

This type of adjustment should only be made for special needs. It may have negative effects on the movement of the armrest when raising or lowering the backrest

WARNING!

Risk of crushing while adjusting armrests

Do not subject the armrests to load while adjusting.

Backrest

Removing backrest

To make transporting the wheelchair easier, the backrest can be removed in a few simple moves.

1. Remove the backrest cushion. It is fixed in place by means of Velcro on the rear of the cushion.
2. Remove the upper section of the backrest by carefully undoing the clip on the rear of the backrest and pulling the upper section straight up at the same time.

If necessary, the headrest can also be removed; see *Headrest*, Page 84.

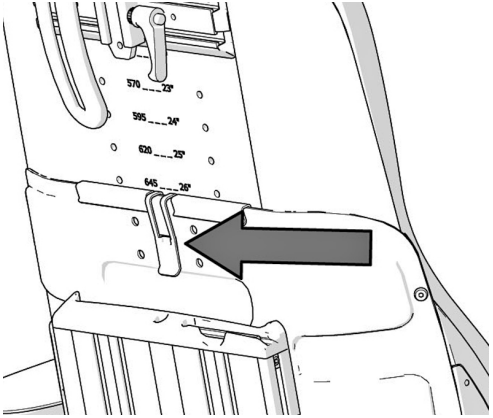


Figure 29. Clip holding the backrest.

Lumbar support

The lumbar support consists of three back cushions with Velcro fastening which can be separated, depending on how much lumbar support is required.

1. Remove the backrest cushion.
2. Adjust the lumbar support as required.
3. Re-fit the backrest cushion.

Figure 30. Lumbar support.

Trunk support

The height of the trunk support can be adjusted.

1. Remove the backrest cushion.
2. Loosen the screw on the rear of the backrest holding the trunk support in place.
3. Adjust the trunk support as required.
4. Tighten the screw.
5. Re-fit the backrest cushion.

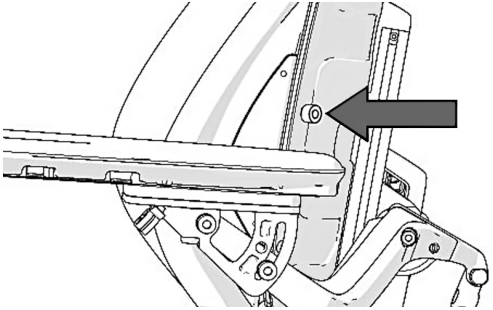


Figure 31. Trunk support screw.

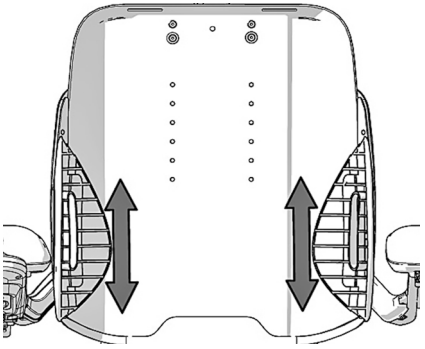


Figure 32. Adjusting trunk support height.

Panel holder

ⓘ The control panel holder can be mounted on the left or right armrest.

Rotational panel holder

The location of the control panel can be adjusted lengthwise for the optimal driving position. It is also possible to adjust the angle of the panel sideways to facilitate getting in and out of the wheelchair.

Length adjustment

1. Undo the screw (A) on the panel joint and adjust the panel to the required position.
2. Tighten the screw.

Angle adjustment with friction joint

Using the knob (B) on the friction joint, it is possible to adjust how easily the panel can be pushed out to the side.

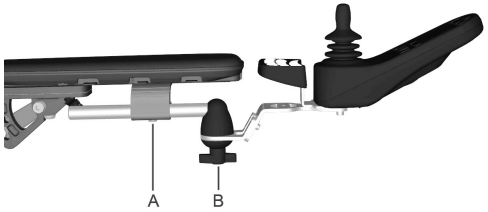


Figure 33. Rotational panel holder overview.

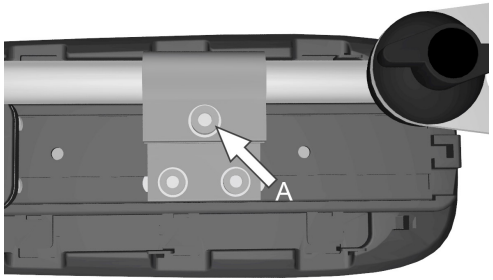


Figure 34. Screw for adjusting the panel holder length.

Parallel panel holder

The location of the control panel can be adjusted lengthwise for the optimal driving position. The panel can also be pushed out to the side, diagonally back to facilitate getting in and out.

Length adjustment

1. Undo the screw on the underside (A).
2. Adjust the panel to the required position.
3. Tighten the screw.

Adjusting the friction joint

Using the knob on the friction joint (B), it is possible to adjust how loose or tight the panel is for sliding to the side.

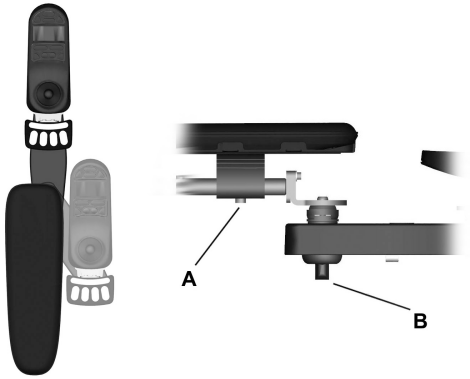


Figure 35. Adjusting the control panel position.

Accessories

Positioning belt

ⓘ Accessory

There is an accessory rail on each side of the seat frame intended for attaching a positioning belt. etc. The positioning belt should be fitted in the rail's upper groove.

1. Screw the belt in place, with the snap lock on the side which best suits the user and the other part with the buckle on the opposite side.

Figure 36. Attaching the positioning belt.

2. Check that the belt buckle locks properly in the snap lock.

Figure 37. Positioning belt snap lock.

WARNING!

Positioning belt

The positioning belt is an accessory.

A qualified service technician should install the positioning belt. Before operation the wheelchair, make sure that the positioning belt is correctly installed and that no excess material hangs down. Excess belt strap material could become caught in the wheelchair or other places in the surrounding area and cause injury to the user or damage to the wheelchair and its surroundings.

While the wheelchair is in use, the positioning belt, and any other components installed for the unique safety and positioning needs of the user, should be securely fastened.

If any sign of damage or wear appears, contact your Permobil dealer right away to obtain a replacement.

WARNING!

Positioning belt does not replace a seat belt

The seating system's positioning belt is designed only to position the user; it does not provide any protection in the event of a road traffic accident. The positioning belt does not replace the use of vehicle-mounted three-point seat belt during journeys.

Headrest

ⓘ Accessory

This headrest has expanded adjustment options to give the user optimal comfort. The headrest can also be removed and remounted while preserving the same setting.

Figure 38. Headrest overview.

Removing headrest

1. Undo the handle (C) on the rear of the backrest.
2. Remove the headrest by lifting it straight up.

Mounting headrest

Mount in the reverse order

Adjusting headrest height and depth

1. Undo the handle (A) on the rear of the backrest.
2. Adjust the height/depth of the headrest as required.
3. Tighten the handle (A).

Adjusting headrest angle

1. Undo the handle (B) on the rear of the headrest.
2. Adjust the angle of the headrest as required.
3. Tighten the handle (B).

NOTICE

Risk of damaging mechanism

Do not put weight on the headrest while adjusting it.

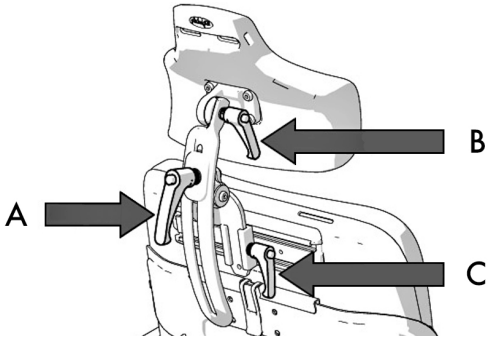


Figure 39. Adjusting headrest.

Permobil headrest with Link hardware

ⓘ Accessory

This headrest has expanded adjustment options to give the user optimal comfort. It is easy to find a correct fit for anyone and may be removed and remounted while preserving the same settings.

Removing headrest

1. Undo the handle (A) on the rear of the backrest.
2. Remove the headrest by lifting it straight up (B).

Mounting headrest

1. Mount in the reverse order.

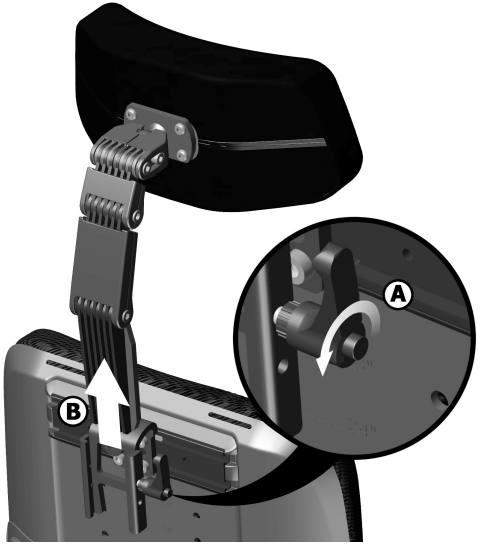


Figure 40. Removal of headrest.

Adjusting headrest height

1. Undo the handle (A) on the rear of the backrest.
2. Remove the headrest by lifting it straight up (B).
3. Adjust the height by changing the placement of the screw on the inside of the bracket. Place the screw in one of the four positions depending on the desired height. Position 1 provides the lowest setting and position 4 provides the highest setting.

   ⓘ If position 1 is to be used, all the functions of the chair have to be tested with that position to avoid interference.

4. Mount in the reverse order.

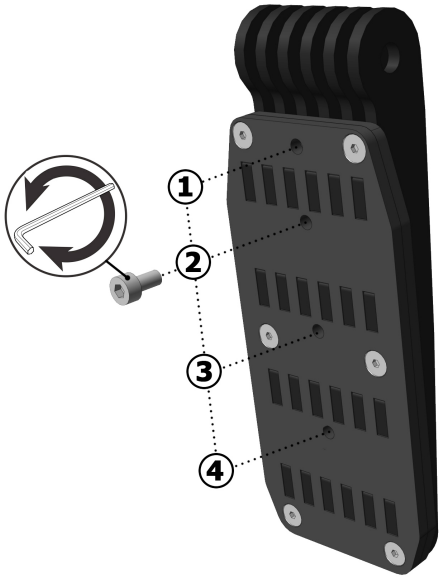


Figure 41. Height adjustment screw.

Adjusting headrest height and depth

1. Loosen the bolts located at each link.
2. Adjust the height and depth by angling the links as required.
3. Tighten the bolts.

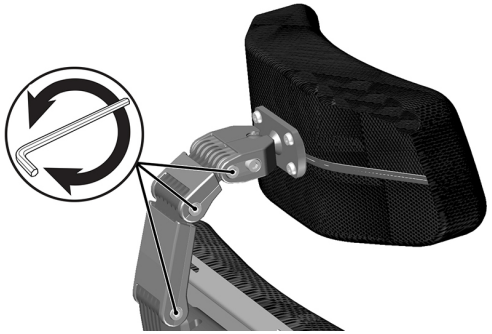


Figure 42. Adjust height and depth.

Adjusting headrest angle

1. Loosen the front bolt in the top link (A).
2. Adjust the headrest angle by freely changing the position of the headrest as required (B).
3. Tighten the bolt.

NOTICE

Risk of damaging mechanism

Do not put weight on the headrest while adjusting it.

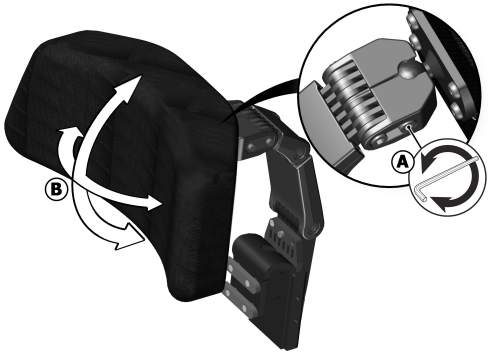


Figure 43. Adjustment of headrest angle.

Permobil Joystick Module for R-net

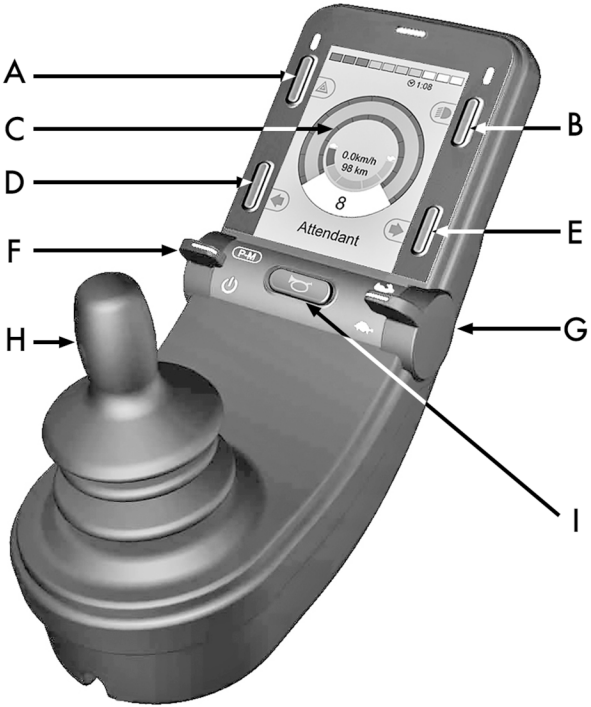


Figure 44. Permobil joystick panel, 2,8" color display.

A. Hazard flashers on or off.
B. Headlights on and off.
C. Screen.
D. Left turn signals.
E. Right turn signals.
F. Main power on or off; mode or profile selector.
G. Maximum speed paddle, decrease or increase.
H. Joystick.
I. Horn button.

General

The overview image on the preceding page shows the basic functions of the control panel. All buttons, toggle switches and the joystick may have additional functionality.

The charging socket is located on the front of the panel Figure 45 *Charger socket.*

Two jack sockets are located on the base of the panel. One is intended for an external on/off switch and the other for an external profile switch. Figure 54 *Jack sockets.*

The wheelchair may also be equipped with an extra seat control panel in addition to the control panel.

Charger socket

This socket may only be used for charging or locking the wheelchair. Do not connect any type of programming cable to this socket. Do not use the socket as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the wheelchair's EMC (electromagnetic compatibility) performance.

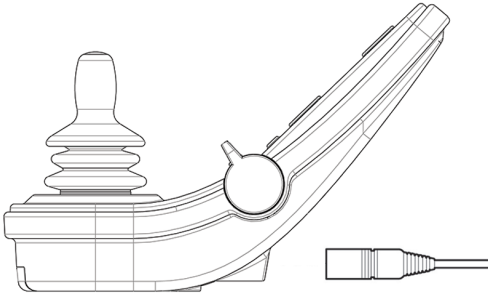


Figure 45. Charger socket.

NOTICE

Use only the supplied battery charger

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

Buttons and paddle switches

On the control panel there is a total of 5 buttons and 2 paddle switches.

Power, mode and profile paddle

The paddle switch is used to switch the control system on or off.

Push the paddle forward to switch the power on and pull it backwards to switch the power off.

The paddle switch can also be used to scroll through the available profiles and modes. Push the paddle forward to scroll through the available profiles and modes.

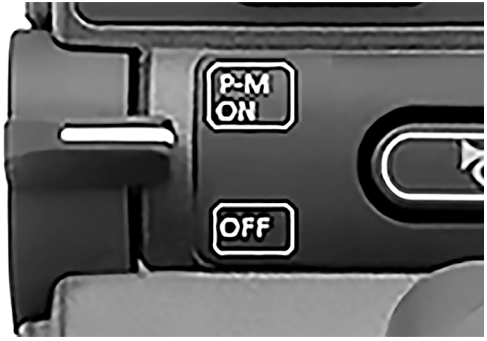


Figure 46. Power, mode and profile paddle.

ⓘ If your panel is equipped with an early version of the toggle switch as shown in figure 47, follow the description below.

Pull on the paddle switch to switch the power on or off.

The paddle switch can also be used to scroll through the available profiles and modes. Push the paddle forward to scroll through the available profiles and modes.

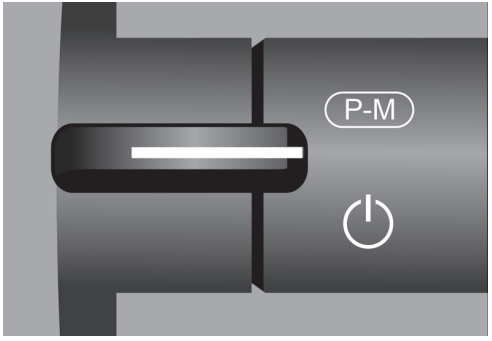


Figure 47. Power, mode and profile paddle switch, early version.

Maximum speed paddle

This paddle decreases or increases the wheelchair's maximum speed. The maximum speed indicator on the display shows the current setting. Push the paddle forward to increase the setting and backwards to decrease the setting.

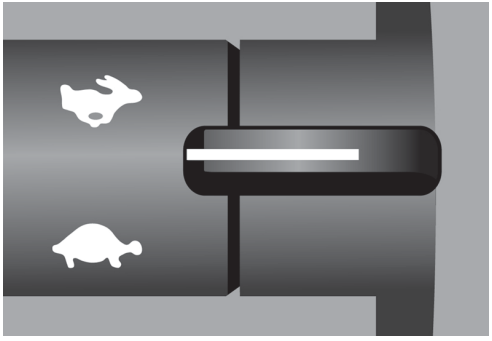


Figure 48. Maximum speed paddle, decrease or increase.

Horn button

The horn will sound while this button is depressed.

Figure 49. Horn button.

Function Buttons

There are a total of four buttons located on the left and right sides of the display. The symbols on the display show the current button function.

Hazard warning button and screen symbol

ⓘ Only active if the wheelchair is fitted with lights.

This button switches the wheelchair hazards lights on or off. The hazards lights are used when the wheelchair is positioned such that it constitutes an obstruction for others. Push the button to switch the hazard lights on and push it again to switch them off. When activated the screen symbol will flash in sync with the wheelchair hazard lights.

Figure 50. Hazard warning button and screen symbol.

Lights button and screen symbol

ⓘ Only active if the wheelchair is fitted with lights.

This button switches the wheelchair lights on or off. Push the button to switch the lights on and push it again to switch them off. When on, the lights screen symbol lights up.

Figure 51. Lights button and screen symbol.

Left turn signal button and screen symbol

ⓘ Only active if the wheelchair is fitted with lights.

This button switches the wheelchair's left turn signal on or off. Push the button to switch the turn signal on and push it again to switch it off. When activated, the left turn signal screen symbol will flash in sync with the wheelchair's turn signal.

Figure 52. Left turn signal button and screen symbol.

Right turn signal button and screen symbol

ⓘ Only active if the wheelchair is fitted with lights.

This button switches the wheelchair's right turn signal on or off. Push the button to switch the turn signal on and push it again to switch it off. When activated, the right turn signal screen symbol will flash in sync with the wheelchair's turn signal.

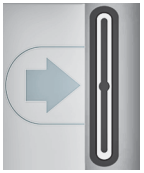


Figure 53. Right turn signal button and screen symbol.

Jack sockets

The external On/Off switch jack (A) allows the user to turn the control system on or off using an external device such as a buddy button.

The external profile switch jack (B) allows the user to select profiles using an external device, such as a buddy button. To change the profile while driving, simply press the button.

Figure 54. 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 R-net drive screen has common components that always appear and components that only appear under certain conditions.

A. Speedometer
B. Profile name
C. Battery indicator
D. Clock
E. Maximum speed indicator
F. Current profile

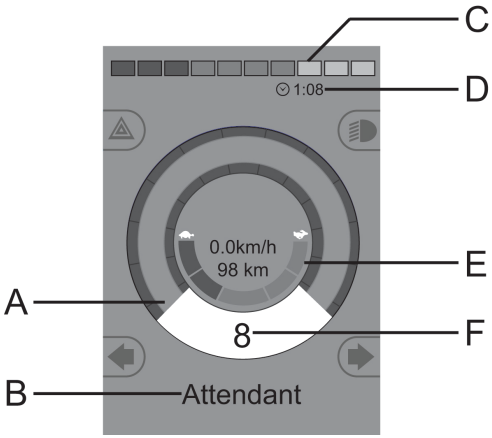


Figure 55. Drive screen when set to profile 8.

Battery indicator

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

- Steady light: everything is in order.
- Flashing slowly: the control system is functioning correctly, but charge the battery as soon as possible.
- Stepping up: the wheelchair batteries are being charged. The wheelchair cannot be driven until the charger is disconnected and the control system is switched off and on again.

Figure 56. Battery indicator.

Maximum speed indicator

This displays the current maximum speed setting.

The maximum speed setting is adjusted using the speed paddle.

Figure 57. Maximum speed indicator.

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 58. 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, the module that has control of the wheelchair displays the 'in focus' symbol.

Figure 59. In focus.

Speed limited

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

Figure 60. Speed limited.

Restart

When the control system requires a restart, e.g. after a module reconfiguration, this symbol will flash.

Figure 61. Restart required.

Control system temperature

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

Figure 62. Temperature control of system.

Motor temperature

This symbol is displayed when the control system has intentionally reduced the power to the motors to protect them against overheating.

Figure 63. Motor temperature.

Hourglass

This symbol is displayed when the control system is changing states. An example would be entering into programming mode. The symbol is animated to show sand falling.

Figure 64. Hourglass.

Emergency stop

If the control system is programmed for latched drive or actuator operation, then an emergency stop switch is usually connected to the external profile switch jack. If the emergency stop switch is operated or disconnected, this symbol will flash.

Figure 65. Emergency Stop.

Settings Menu

The Settings Menu permits the user to set the clock, display brightness, background color etc.

Press the hazard flasher button for 2 seconds in order to open the menu. Scroll through the menu by moving the joystick back and forth.

A right joystick deflection will enter a submenu with the related function options.

Exit the setting menu by first selecting Exit on the bottom of the menu and then moving the joystick to the right.

The menu items are described in the following sections.

Figure 66. Settings Menu.

Time

The following section describes submenus related to Time.

Set Time allows the user to set the current time.

Display Time this sets the format of the time display or turns it off. The options are 12hr, 24hr or Off.

Distance

The following section describes submenus related to Distance.

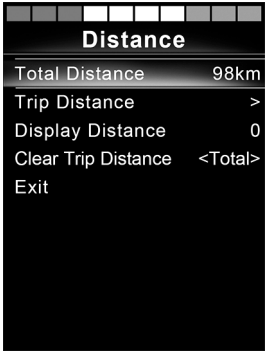


Figure 67. Distance measurement.

Total Distance this value is stored in the power module. It is related to the total distance driven during the time that the current power module has been installed in the chassis.

Trip Distance this value is stored in the joystick module; it relates to the total distance driven since the last reset.

Display Distance sets whether Total Distance or Trip Distance appears as the odometer display on the joystick module.

Clear Trip Distance a right joystick deflection will clear the Trip Distance value.

Backlight

The following section describes submenus related to Backlight.

Backlight this sets the backlight on the screen. It can be set between 0% and 100%.

Auto Backlight the joystick module contains an ambient light sensor to automatically adjust screen brightness. The programmable options are Off or On. Set to On the display adjusts the screen brightness based on the light sensor reading. Set to Off ; screen brightness will not change with changes in light intensity.

Backlight Time this adjusts the period of time the backlight will remain active once no further instructions are received from an input device, it is adjustable between 0 and 240 seconds.

Bluetooth®

(i) Applies to control panels equipped with integrated Bluetooth®.

A right deflection of the joystick will enter a submenu to configure the Bluetooth® mode screen. Refer to the Bluetooth® mode chapter for more details, see page 109.

IR Setup

ⓘ Applies to control panels equipped with integrated IR.

A right deflection of the joystick will enter a submenu for learning and deleting IR codes. Refer to the IR section for more details; see page 122.

Programming

The following section describes submenus related to Programming.

Sleep	sets the time after which the control system will go to sleep if an input device command is not received.
Sounder Volume	sets the volume of the sounder used to indicate button presses.
Horn Volume	sets the volume of the horn.
Start-up Beep	sets whether not the controller emits a short beep when turned on. Available only in later versions of the control panel.
Momentary Screens	sets whether programmed Momentary Screens are displayed.
Display Speed	sets how the wheelchairs speed is displayed; options are mph, km/h or Off.
Displays	sets the format of the digital drive display; options are odometer, speed or both.

Diagnostics allows the user to read diagnostic information from the control system.

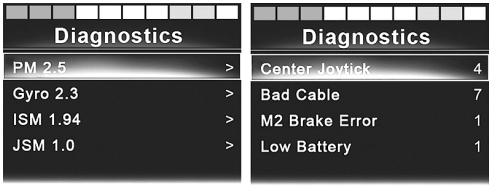


Figure 68. Two samples from the Diagnostic screen.

Timers enables the user to view how many hours the chair has been driven for.

Exit

Exits the Settings Menu.

Bluetooth® mode

ⓘ Applicable only to R-net control panels, 3.5" or 2.8" color display, with Bluetooth® integrated in the joystick module.
The joystick modules differs in that the 3.5" screen version is equipped with the buttons Mode and Profile, positioned under the screen. Joystick modules with 2.8" screens are more compact and lack these buttons.

General

When a wheelchair is delivered equipped with a control panel containing Bluetooth®, the Bluetooth® functions are pre programmed to a basic setup. This setup is described below.

The basic setup is prepared for pairing of up to four Bluetooth® devices, two PC mice or Android™ devices and two iDevices®, without any additional tools. The setup can be reprogrammed using a programming key and an R-net programmer installed on a computer. With this equipment it is possible to e.g. rename or replace text and icons describing a certain device, activate mouse commands, nudge time, change the cursor speed etc.

Pairing with devices

A device must be set to On from the Settings Menu before it can be paired. Follow the description below.

Settings Menu

Press the hazard flasher button for 2 seconds in order to open the Settings Menu. Select Bluetooth®.

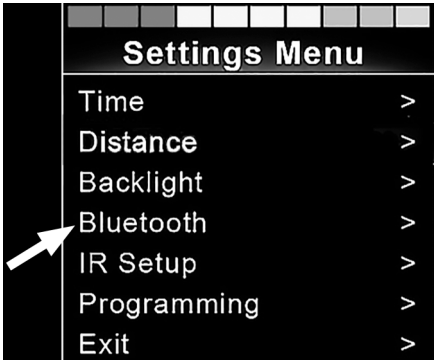


Figure 69. Select Bluetooth® to get access the submenu.

The screen now displays the submenu as illustrated.

Choose a device; set it to On with a right deflection by the joystick.

The R-net system must now be switched off and then on again.

The name of each device can be changed by using a computer with an installed R-net programming tool.

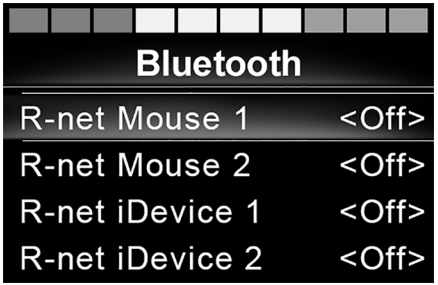


Figure 70. The Bluetooth® submenu.

Pairing setup

The control panel Bluetooth® must then be put into Discovery Mode by following this sequence description:

- Deflect the joystick in the forward direction and hold until there is a beep. This takes approximately 10 seconds; then release.
- Deflect the joystick in the reverse direction and hold until there is a beep. This takes approximately 10 seconds; then release.

The screen will display a flashing Bluetooth® icon to the right above the computer image. This confirms that the control panel Bluetooth® is set in Discovery Mode. It is now discoverable for other Bluetooth® devices.

Figure 71. The arrow points to the flashing Bluetooth® icon.

Pairing with different devices

Depending on the type of device you are pairing with; a PC, an Android™ device or an iDevice®, you will need to follow a specific procedure depending on the device you want to connect to.

Some procedures are described below.

Pairing with a PC

The following process should be carried out on a PC:

- Open the window where you can select a Bluetooth® device to add to the PC. The name and path will differ slightly for different versions of Windows.
- Enter the password 1234 if prompted.
- Click on R-net Mouse X when it appears in the screen and the connection will be finalized. The R-net mouse will now appear in the list of devices on the PC.
- When an connection is established the Bluetooth® icon on the control panel display stops flashing.

Pairing with an Android™ device

The following process should be carried out on the Android™ device

- Select system settings and set Bluetooth® to on.
- Select R-net Mouse X from the list of available devices.
- Enter the password 1234 if prompted.
- R-net Mouse X should now appear as a paired device.
- When an connection is established the Bluetooth® icon on the control panel display stops flashing.

Pairing with iDevice®

The following process should be carried out on the iDevice®.

- Select settings and set Bluetooth® to on.
- Select R-net iDevice® X from the list of available devices.
- R-net iDevice® X should appear as a paired device.
- When an connection is established the Bluetooth® icon on the control panel display stops flashing.

Updating the list of devices

The control panel stores the Bluetooth® IDs of up to four devices. To replace an entry on the list of devices, one of the existing pairings must be deleted. This process is initiated from the paired device and will vary depending on the type of device.

Once a device is unpaired, a new device can be added.

Operating Bluetooth® devices

This section describes the basic settings of a wheelchair delivered with a control panel with integrated Bluetooth®.

Accessing a Bluetooth® device

The following section describes how to access one of the paired Bluetooth® devices.

To enter Bluetooth® mode

ⓘ Joystick module with 2.8" screen is more compact and lacks Mode and Profile buttons.

Press button Mode button (A) a number of times until Bluetooth® mode is entered or press and hold key B for more than 2 seconds to enter Bluetooth® mode, M3.

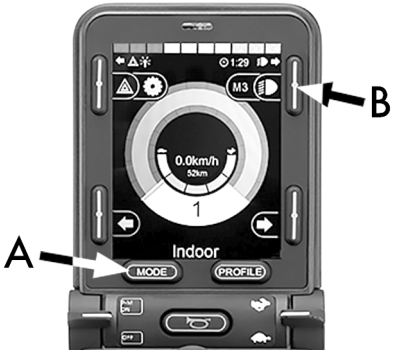


Figure 72. Two ways to access a Bluetooth® device.

If more than one Bluetooth® device is paired and enabled, a screen will appear where a Bluetooth® device can be selected for connection and use.

If only one Bluetooth® device is enabled it will be shown directly on the screen.

Step between the devices by deflecting the joystick forward or back.

Select the device by right deflection.

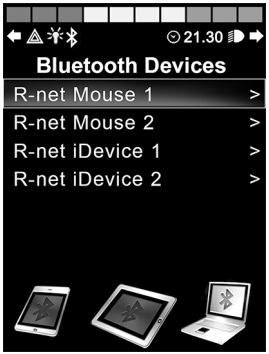


Figure 73. The Bluetooth® Device screen from which paired devices are chosen.

When a Bluetooth® device is selected, the screen will show an icon representing the chosen device type.

If only one Bluetooth® device is enabled, this screen will appear as soon as Bluetooth® mode is activated.

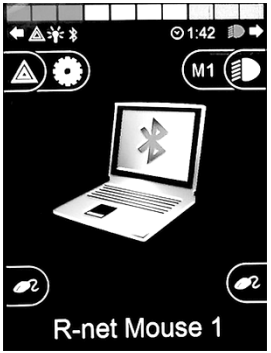


Figure 74. A selected Bluetooth® device.

Operating buttons in Bluetooth® mode

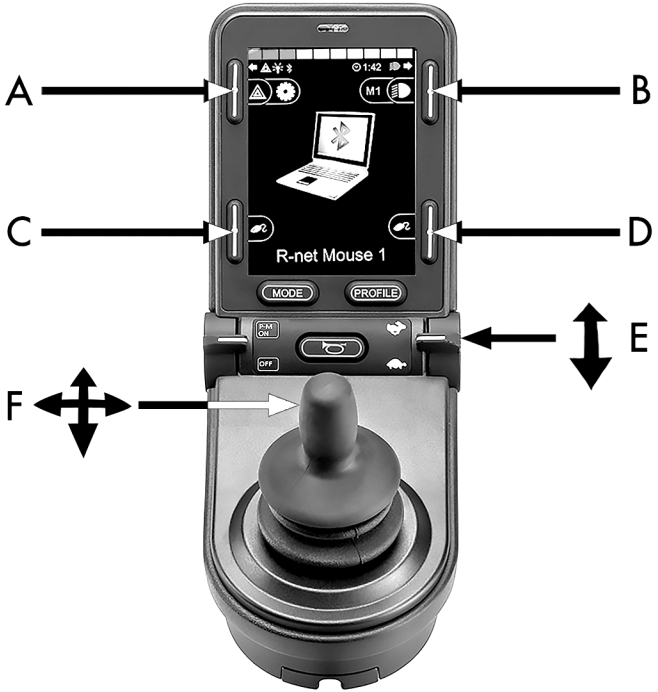


Figure 75. Buttons and other controllers for operating in Bluetooth® mode.

A. Access settings, page 118.
B. Return to drive mode, page 118.
C. Left mouse click, page 119.
D. Right mouse click, page 119.
E. Scroll up or down, page 119.
F. Joystick functions, page 120.

Buttons A to D, paddle switch E and joystick F, as shown in the previous overview illustration, have predefined functions when a Bluetooth® device is selected in Bluetooth® mode. The functions are described below.

A – accessing settings

Press the button for more than 2 seconds. This opens the Setting Menu; see *Settings Menu*, Page 104.

A short press turns the hazard flashers on or off.

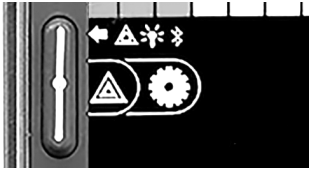


Figure 76. Button to access settings in Bluetooth® mode.

B – return to drive mode

Press the button for more than 2 seconds. This puts the wheelchair into drive mode.

A short press turns head lights on or off.

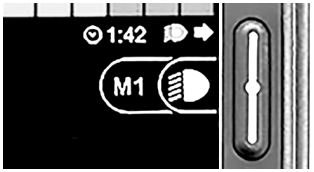


Figure 77. Button to return to drive mode from Bluetooth® mode.

C – left mouse click

Press button to perform a left mouse click.

Figure 78. Left button for left mouse clicks.

D – right mouse click

Press button to perform a right mouse click.

Figure 79. Right button for right mouse clicks.

E – scroll up or down

Push the paddle switch to scroll up.

Pull the paddle switch to scroll down.

Figure 80. In mode Bluetooth® the right paddle switch is used to scroll up or down.

F – joystick functions

Move cursor in desired direction by deflecting the joystick.

Nudge forward to scroll up.

Nudge back to scroll down.

Left mouse click; left nudge.

Right mouse click; right nudge.

ⓘ A nudge is a quick, full deflection; settings can be changed to accommodate your needs using a computer with the programming tool installed.

Figure 81. With the use of Bluetooth® the joystick can take control of the mouse functions.

Notes - Bluetooth® mode settings changed after delivery

Button, toggle switch or joystick	Function

IR mode

ⓘ Applicable only for R-net control panels with integrated IR, 3.5″ or 2.8″ color display with IR.

General

The infrared control, integrated in the joystick module, makes it possible to replicate commonly used IR devices, such as remote controls for TV, audio, cable, satellite or environmental controls. IR codes can either be learned without any tools or loaded by the PC-based IR configurator software. The programming abilities of the IR configurator entail more than just loading codes.

This manual describes only the learning method.

The wheelchair is prepared for IR mode but there are no IR codes stored in the system at delivery.

IR setup

IR Setup menu can be accessed via the Settings Menu; see *Settings Menu*, Page 104.

On entering the IR Setup menu, the default appliances will appear. When an appliance is selected, its commands are shown.

Figure 82. The IR Setup screen.

When a command is followed by a check mark it means that it has a stored IR code. When a command is not checked, its IR code has not yet been stored.

IR codes can be stored or deleted as described in the following sections.

Figure 83. Commands on the TV MENU screen.

Learning an IR code

The IR receiver is located above the screen on the control panel, marked with an A in the figure.

When learning a code, the remote control device must be held so that its IR transmitter points towards the IR receiver on the control panel, i.e. the little window marked A in the figure.

Figure 84. The IR receiver location.

Learning an IR code procedure

Enter the IR Setup menu.

Select an appliance, e.g. TV – (Device 1) as illustrated. "(Device 1)" shows where the equipment's unique name may appear on the screen.

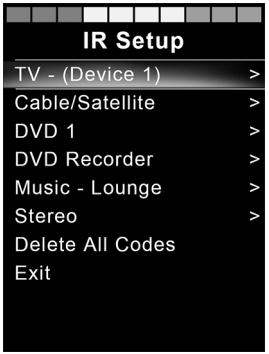


Figure 85. Sample of IR Setup.

The commands for the appliance will appear on the screen as shown in figure. Select a command to learn.

In this example; Channel Up will be selected from the TV MENU.

Figure 86. The screen displayed when an appliance has been selected.

Select Learn Code, by deflecting the joystick right while the command is highlighted.

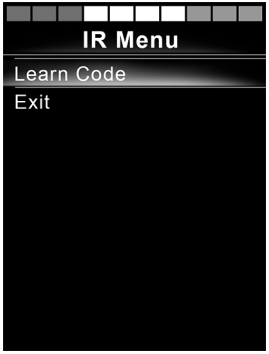


Figure 87. IR Setup menu, Learn Code.

Point the TV remote control towards the control panel's IR receiver and press the channel up button twice.

Figure 88. Point the remote control at the IR receiver. Press the button twice.

If the Learn Code operation has been successfully completed, a green check mark will be displayed on the screen.

Figure 89. Learning operation successful.

If the Read Code operation fails, a red cross will be displayed on the screen. Please retry the Learn Code operation.

Figure 90. Learning operation unsuccessful.

After the code has been learned, scroll down to highlight Exit. Deflect the joystick to the left to return to the appliance menu, IR Setup.

The first time an IR code is learned, it is necessary to cycle the power by turning the power off at the control panel and on again. If other IR codes have already been learned, it is not necessary to cycle the power.

Figure 91. Scroll down to Exit.

Learning sequenced IR codes

Multiple IR codes can be learned for a single command in the IR Setup menu. This enables multiple IR codes to be transmitted through a single command when in IR mode.

Examples:

1. The on/off function for multiple appliances, the TV and the DVD for example, can be learned by a single entry in the IR Setup menu. The control panel will then transmit the codes for the learned command in one burst. In this case, turning the TV set and the DVD recorder on or off practically simultaneously.
2. Previously, selecting a TV channel required the user to select the individual channel's digits from a list. This could be quite inconvenient when trying to select a TV channel with multiple digits e.g. Channel 143. Now the individual codes for the numbers 1, 4 and 3 can be learned by a single command in the IR Setup menu. When this command is selected in IR Setup menu the IR codes are transmitted practically simultaneously.

Create a sequence

- Select the command to use as the sequence initiator. In this example, TV – ON.
- Select Learn Code, by deflecting the joystick to the right while the command is highlighted.
- Point the TV remote control at the control panel's IR receiver and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.
- Point the DVD remote control at the control panel's IR receiver and press the On/Off button twice.
- After each successfully learned operation, a check momentarily appears on the screen, selectLearn Code again.
- Complete the sequence by highlighting Exit and deflecting the joystick to the left.
- Now the TV – ON command will have a check mark and three dots beside it, showing a learned sequence.

Figure 92. A check mark followed by three dots showing a learned sequence.

Enabling and disabling IR codes

IR codes can be enabled or disabled in the IR Setup menu. If a code is disabled, it will not transmit and will not appear in IR mode.

To disable an IR code, deflect the speed paddle up or down. A disabled IR code appears with an X against the highlighted command.

To enable an IR code, deflect the speed paddles up or down. An enabled code appears with a check mark against the highlighted command.

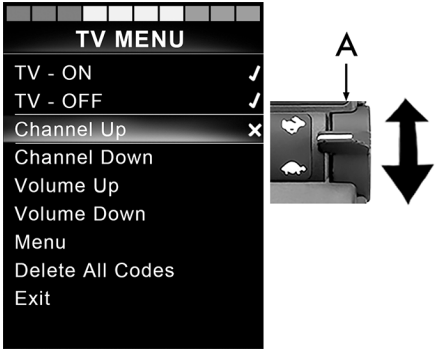


Figure 93. Screen and speed paddle switch marked A.

Deleting IR codes

To delete an IR code for a specific command, highlight the command in the appliance menu and deflect the joystick to the right. Then select the Delete Code option.

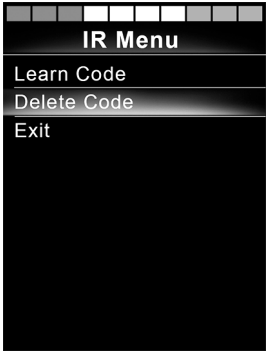


Figure 94. Deleting codes for specific commands.

To delete all IR codes for an appliance, select Delete All Codes within that appliance's submenu.

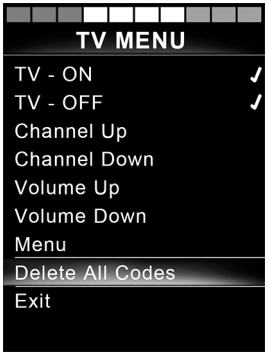


Figure 95. Deleting all codes for a specific appliance.

To delete all IR codes stored in the control panel, select Delete All Codes within the IR Setup menu.

Figure 96. Delete all codes from the IR Setup menu.

Locking and unlocking the control system

Locking

- Switch the control system on and move the paddle forward.
- After 1 second the control system will beep. Now release the paddle.
- Deflect the joystick forward until the control system beeps.
- Deflect the joystick rearward until the control system beeps.
- Release the joystick; there will be a long beep.
- The wheelchair is now locked.
- The wheelchair is switched off.

Figure 97. The lock symbol is displayed when the wheelchair is locked.

Unlocking

- If the control system has switched off, move the paddle forward.
- Deflect the joystick forward until the control system beeps.
- Deflect the joystick rearward until the control system beeps.
- Release the joystick; there will be a long beep.
- The wheelchair is now unlocked.

Seat functions

Not applicable to all seat models

On some seats, the power functions can be controlled using the control panel joystick. Some models can memorize three seat positions. The seat adjustment mechanism stores each memorized seat position. This makes it easy to retrieve a seat position saved earlier.

Maneuvering the seat

1. Push the mode paddle switch forward one or more times until a seat function icon appears in the control panel display.
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.

   The icons shown may vary depending on the seat model and available functions.
3. Move the joystick forward or rearward to activate the function.

NOTICE

The symbol M

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

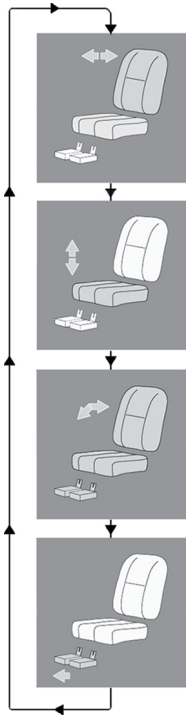


Figure 98. Move the joystick to the left or right to select a function. The icon for the seat function selected appears in the display.

Return to drive mode

Push the mode paddle switch forward one or more times until a standard display image with speed indicator appears in the control panel display.

Figure 99. Standard display image with speed indicator.

Memory

Retrieving position from memory

Some seat control systems can memorize three seat positions. The seat adjustment mechanism stores each memorized seat position. This makes it easy to retrieve a seat position saved earlier.

1. Push the mode paddle switch forward one or more times until a seat function icon appears in the control panel display.
2. Move the joystick to the left or right to select a memorized position (M1, M2 or M3). A seat icon and memory symbol M for the memorized position selected are shown in the control panel display.
3. Move and hold the joystick forwards. The seat adjusts to the position stored earlier. For reasons of safety, the joystick must be held forward until the seat is fully adjusted to the required position. Once the seat has assumed the saved position, it stops moving.

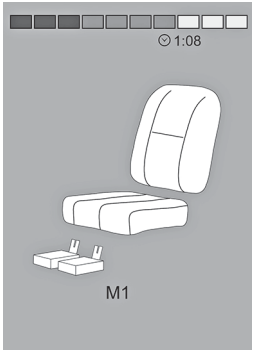


Figure 100. Memory function activated.

NOTICE

Releasing the joystick stops seat movement

Release the joystick at any time to stop seat movement.

Return to drive mode

Push the mode paddle switch forward one or more times until a standard display image with speed indicator appears in the control panel display.

Saving a seat position to memory

1. Set the seat's power functions to the desired position.
2. If not activated, activate the seat/memory function by pushing the "Mode" paddle switch forward 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 memorized position (M1, M2 or M3). A seat icon and memory symbol M for the memorized position selected are shown in the control panel display.
4. Move the joystick rearward to activate the Save function. An arrow will appear next to the memory symbol M.
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.

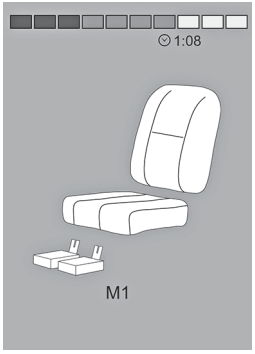


Figure 101. Memory function activated.

Return to drive mode

Push the mode paddle switch forward one or more times until a standard display image with speed indicator appears in the control panel display.

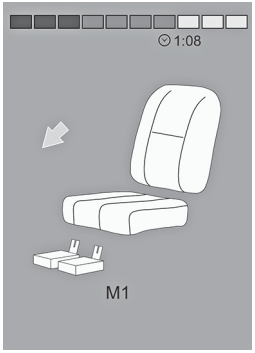


Figure 102. Save function activated.

R-net LED control panel

General

The control panel consists of a joystick and function buttons. At the front of the panel is the charger socket.

The wheelchair may also be equipped with a seat control panel in addition to the control panel.

Figure 103. Control panel.

Charger socket

This socket may only be used for charging or locking the wheelchair. Do not connect any type of programming cable to this socket. Do not use the socket as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the wheelchair's EMC (electromagnetic compatibility) performance.

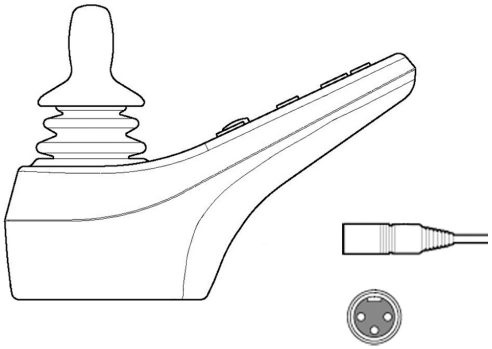


Figure 104. Charger socket.

NOTICE

Use only the supplied battery charger

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

Function buttons

The control panel has a total of 9 function buttons and a joystick.

On/Off button

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

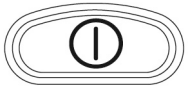


Figure 105. On/Off button.

Horn button

The horn will sound while this button is depressed.

Figure 106. Horn button.

Button and LED for adjusting speed or setting driving profile

This button usually reduces or increases the wheelchair's maximum speed. Alternatively, the button can be used to set the driving profile.

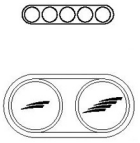


Figure 107. Button and LED for maximum speed or setting the driving profile.

Mode button

These buttons normally reduce or increase the wheelchair's maximum speed. Alternatively, the button can be used to set the driving profile.

Figure 108. Mode button.

Hazard warning button

ⓘ Only available if the wheelchair is fitted with lights.

This button switches the wheelchair hazards lights on or off. The hazards lights are used when the wheelchair constitutes an obstruction for others. Push the button to switch the hazard lights on and push it again to switch them off. When activated, the hazard LED will flash in sync with the wheelchair's hazard lights.

Figure 109. Hazard warning button and LED.

Lights button

ⓘ Only available if the wheelchair is fitted with lights.

This button switches the wheelchair lights on or off. Push the button to switch the lights on and push it again to switch them off. When on, the lights LED lights up.

Figure 110. Lights button and LED.

Left turn signal button

ⓘ Only available if the wheelchair is fitted with lights.

This button switches the wheelchair's left turn signal on or off. Push the button to switch the turn signal on and push it again to switch it off. When activated the left turn signal LED will flash in sync with the wheelchair's turn signal.

Figure 111. Left turn signal button and LED.

Right turn signal button

ⓘ Only available if the wheelchair is fitted with lights.

This button switches the wheelchair's right turn signal on or off. Push the button to switch the turn signal on and push it again to switch it off. When activated the right turn signal LED will flash in sync with the wheelchair's turn signal.

Figure 112. Right turn signal button and LED.

Battery voltage indicator

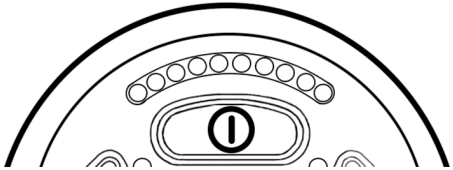
The battery voltage indicator does not show exactly how much charge is left in the battery, but it provides a rough idea to help you avoid unnecessary stops due to discharged batteries.

The indicator shows a more precise value after about 1 minute of driving.

NOTICE

Voltage indicator also used as fault indicator

The battery voltage indicator also functions as a fault indicator for the wheelchair's electronics. See page 259 for further information.



The display that shows the battery status (from left to right):

Red, Yellow and Green	Fully charged
Red and Yellow	Half charged
Red	Charge the batteries

Figure 113. Battery voltage indicator.

Maximum speed indicator

Speed

Indicates the maximum speed set for the wheelchair.

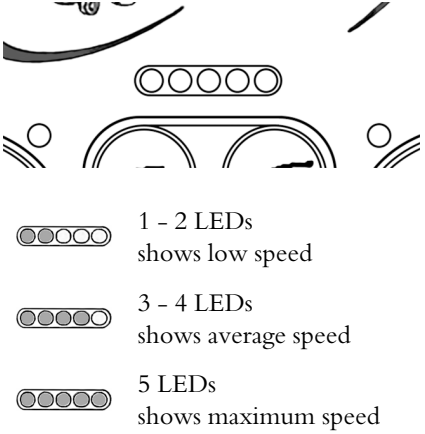


Figure 114. Maximum speed indicator.

Driving profile

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

NOTICE

Speed indicator also used as fault indicator

The maximum speed or driving profile indicator also functions as a fault indicator for the wheelchair's electronics. See page 259 for further information.

Seat indicator

On certain seats, the powered functions for seat lift, seat angle, backrest angle and leg rest angle are controlled by the control panel joystick. In this case, the active seat function is shown on the control panel seat indicator.

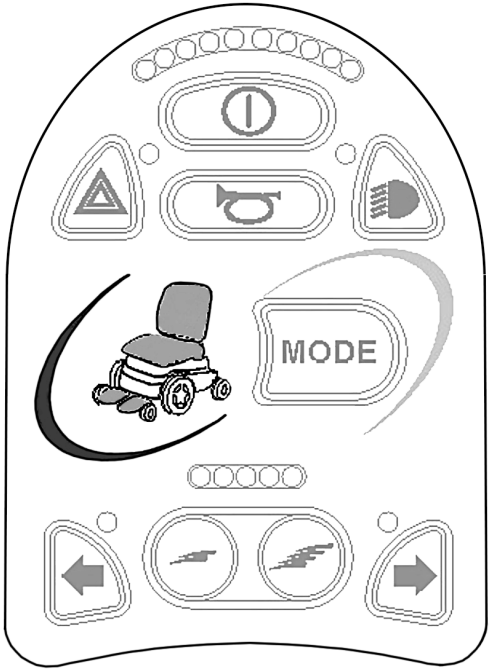


Figure 115. Seat indicator.

ICS seat control panel

General

The seat's powered functions may be controlled from the drive system control panel. On seats equipped with the control system ICS, the powered functions may also be controlled from the ICS control panel.

The seat's powered functions are controlled from the control panel. The control system may be in the form of push buttons or toggle switches for those users who find them easier to maneuver. Move the toggle switch forward to operate the front button and back to operate the rear button. The button box functions described here apply to conventional push buttons, but the functions are the same regardless of control system design.

Each switch location can have two functions, and the symbol for the active function is lit. Change functions with the shift function.

Figure 116. ICS seat control panels, the topmost equipped with push buttons and the lower with paddle switches.

NOTICE

Functions vary

The number of available functions will vary depending on how the wheelchair and seat are equipped.

Feedback

The control panel provides feedback regarding the available seat functions, active seat function inhibits, active drive speed limits and active drive inhibits through its LEDs.

The LED above the switch can assume three states:

1. Off

   The function icon is extinguished or off. This means the function is not currently active. Toggle selection of the left or right seat functions with the Shift Switch

2. Steady LED

   A steady LED provides the user with information concerning drive speed.

   - A steady green LED means the chair can be driven at full speed.
   - A steady yellow LED signifies that the drive speed is limited due to the position of this actuator.
   - A steady red LED means the drive is inhibited due to the position of this actuator.

3. Flashing LED

   A flashing LED provides the user with actuator-related information.

- A flashing green LED signifies a special or extended feature.
- A flashing yellow LED means the seat function is inhibited in one direction, due to a safety limit. The switches below the icon will only move the seat in the safe direction.
- A flashing red LED an actuator error has been detected. Depending on the type of error, the switches below may or may not operate the seat function. Note the circumstances when this indication occurs as this information may help your service provider. Contact your service provider for additional assistance, as service may be necessary.

Functions

WARNING!

Risk of pinching while using seat functions

There is a risk of pinch-point accidents when using the power seat functions. Make absolutely sure that nothing gets stuck between moving parts. Failure to do so may lead to personal injury.

Seat lift

The seat can be raised by pressing the upper part of the button and lowered by pressing the lower part.

Figure 117. Seat lift.

Backrest recline

The backrest can be reclined by pressing the lower part of the button and brought back by pressing the upper part.

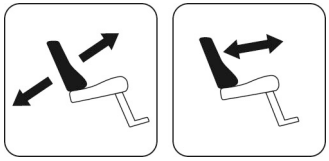


Figure 118. Backrest recline.

Seat tilt

The seat can be tilted backward by pressing the lower part of the button and forward by pressing the upper part.

Figure 119. Seat tilt.

Anterior tilt

The seat can be tilted forward by pressing the upper part of the button and backward by pressing the lower part. When the seat is being tilted forward or backward, the seat will stop when it reaches neutral position. To keep moving forward or backward from neutral position, press the same button again.

Figure 120. Anterior tilt.

Leg rest angle

The leg rest can be tilted forward by pressing the upper part of the button and backwards by pressing the lower part.

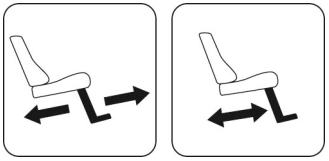


Figure 121. Leg rest angle.

Power adjustable leg length

The footplate can be raised by pressing the upper part of the button and lowered by pressing the lower part.

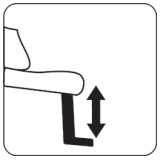


Figure 122. Power adjustable leg length.

Power footplates

The footplates can be raised by pressing the lower part of the button and lowered by pressing the upper part.

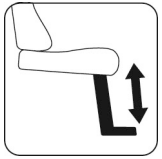


Figure 123. Power footplates.

Power transfer footplate

The footplate can be lowered at the same time as the seat lift is raised by pressing the upper part of the button. Pressing the lower part of the button will raise the footplate and at the same time lower the seat lift. This function can help the user get in and out of the wheelchair.

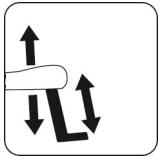


Figure 124. Power transfer footplate.

Shift

Change the control button functions by pressing the Shift button. Change the function back again by pressing the Shift button. The symbol for the active function will light up.

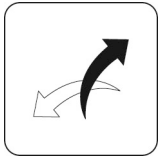


Figure 125. Shift.

Memory function

ICS control panels equipped with memory can store and recall up to three seat positions. A seat function (e.g. power tilt, power recline, power legs, etc.) can only memorize a position if it has an actuator with position feedback installed.

Figure 126. Memory function.

Recalling memory

1. Enter memory mode by pressing and holding the memory button (8) for two seconds. While in memory mode, the memory LED flashes green.
2. Press and hold the appropriate Recall button (1, 2 or 3) to move the seating system to the desired memory position. As a safety feature, releasing the Recall button stops actuator movement. When the stored position is reached, actuator movement stops, the LED above the memory position lights up green and the control panel beeps.
3. Return to standard seat function operating mode by pressing the Memory button (8).

Figure 127. Memory function.

Storing memory

Before storing a seating position in memory, configure the seat system in the desired position.

1. Enter memory mode by pressing and holding the memory button (8) for two seconds. While in the memory mode, the LED flashes green.
2. Press and hold button (4) until the LED immediately to the left of the Memory LED lights up green. Memory is now enabled and ready to memorize a seat position.
3. Press and hold the desired Store button (5, 6 or 7) for three seconds to memorize the current seat position. The LED above the memory position will light up red and the control panel will beep once the memory is successfully stored.
4. Return to standard seat function operating mode by pressing the Memory button (8).

Figure 128. Memory function.

Handling

General

The wheelchair is designed for use both indoors and out. When driving indoors, take care in e.g. narrow passages, when passing through doors and entrances and when using lifts, ramps, etc.

Also bear in mind the crush hazard when using the power seat lift and seat angle functions, especially if the wheelchair has been driven under tables, benches, etc. When driving outdoors, remember to drive very slowly down steep slopes and to take great care when driving on uneven surfaces, up slopes, on side slopes and over obstacles. Always observe a good safety distance when driving near edges and drops.

We recommend users make repeated test drives in environments where they feel safe to familiarize themselves with how the wheelchair and its accessories behave in different situations before starting to use the wheelchair on public roads and in other public spaces.

General - driving

Check that the control panel is correctly fitted and the joystick is in the neutral position. Make sure you have good support, for example the wheelchair's arm rest, for the part you use to handle the joystick.

Do not use the joystick alone as a support. Fast turns and driving on uneven surfaces can interfere with your ability to handle the wheelchair safely.

1. Switch on the power.
2. Select a suitable driving profile with the Profile button (if the system is programmed for more than one driving profile).
3. Move the joystick carefully forward to drive forward or backward to back up.
4. Adjust the speed setting with the higher and lower speed buttons. The wheelchair's electronics allow very slow driving over obstacles. Drive up to the obstacle, then carefully drive over it.

WARNING!

Risk of injury - place your feet correctly

Always make sure your feet are correctly and securely positioned on the footplates before you operate the wheelchair. Use foot straps if necessary. Failure to do so increases the risk of personal injury.

Joystick error

Joystick error at startup

Do not move the joystick before, during or immediately after the control system is switched on. If the joystick is moved from the central position, a joystick error can be created.

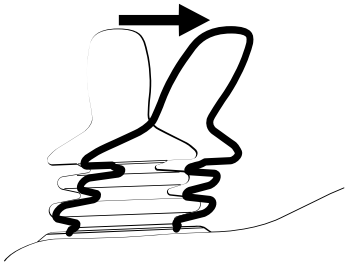


Figure 129. Joystick moved from the central position.

Joystick error LCD panel

While the control system checks if an error has occurred, the screen image for a shifted joystick will be displayed for 5 seconds.

If the control system detects an error in the wheelchair electronics, a diagnostics screen will appear. To enable the wheelchair to be driven again, make sure the joystick is in the central position. Then switch the wheelchair off and on again. If this does not work and the diagnostic screen still appears, contact your service provider.

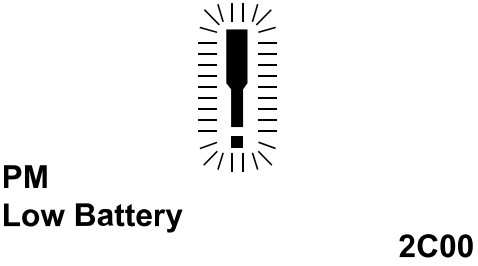


Figure 130. The LCD diagnostics screen.

Joystick error LED panel

While the control system checks if an error has occurred, the LEDs on the battery voltage indicator will wander backward and forward.

If the control system detects an error in the wheelchair electronics, the battery voltage indicator LEDs will flash rapidly. To enable the wheelchair to be driven again, make sure the joystick is in the central position. Then switch the wheelchair off and on again. If this does not work and the LEDs still flash rapidly, contact your service provider.

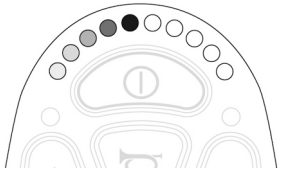


Figure 131. The LEDs on the battery voltage indicator.

Driving technique

The control panel electronics interpret joystick movements and move the wheelchair accordingly. No complex user techniques are required for normal driving, which is an advantage if the user is inexperienced. A good way to get started is simply to move the joystick in the direction you want to go. The wheelchair will then move 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.

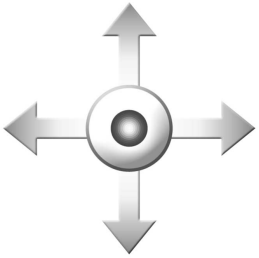


Figure 132. Joystick maneuvering.

CAUTION!

First test drive

Do not take the first test drive alone. 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.

CAUTION!

Driving - surface conditions

Never drive at full speed in narrow or confined spaces or on sloping or inclined surfaces. Use extra caution when driving the wheelchair on surfaces that have ridges that could cause the chair to steer in a different direction.

WARNING!

Release the joystick at the first sign of unexpected behavior!

Do not 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 stop whatever it is doing.

Driving restrictions

Driving restrictions related to different surfaces

Do not drive at high speed, avoid sudden stops and starts, avoid sudden evasive maneuvers or sharp turns and use extreme caution in any of the following situations:

- when near edges and drops or on elevated surfaces.
- when on soft or uneven surfaces; such as grass, gravel, sand, ice, snow.
- when driving from an area of high traction (e.g. sidewalk) to an area of low traction (e.g. grass).
- when turning the wheelchair.
- when in narrow or confined spaces.
- when driving on surfaces that have ridges that could cause the wheelchair to move in a different direction.

These restrictions also applies to hereinafter following sections.

Driving over obstacles

You may be able to drive over obstacles up to 3.5 inches, as long as 4 of the 6 wheels stay in contact with the obstacle's surface as the transition takes place from front to rear.

Use extreme caution when negotiating these types of obstacle. Always approach the obstacle at a right angle. If you drive over higher obstacles, there is a greater risk of tipping and of damage to the wheelchair.

Figure 133. Driving over obstacles.

WARNING!

Driving - high obstacles

Do not drive the wheelchair over obstacles higher than 3.5 inches. Always exercise great caution when driving over obstacles.

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

Driving on side slopes

Always exercise great caution when driving over side slopes.

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

Figure 134. Driving on side slopes.

WARNING!

Risk of tipping on uneven surfaces

Take great care when driving on side slopes with an uneven surface (e.g. grass, gravel, sand and snow).

WARNING!

Risk of tipping on steep slopes

Do not drive the wheelchair on side slopes steeper than 9°. There is a risk of tipping.

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

Driving downhill

Always drive downhill at low speed and with great caution.

Note that the distance required to stop will increase when driving downhill.

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

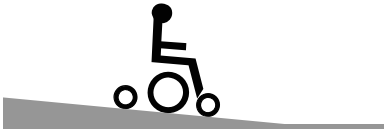


Figure 135. Driving downhill.

WARNING!

Risk of tipping on uneven surfaces

Take great care when driving on side slopes with an uneven surface (e.g. grass, gravel, sand and snow).

WARNING!

Risk of tipping when driving downhill

Do not drive downhill on gradients greater than 10°.

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

WARNING!

Increased stopping distances

The distance required to stop the wheelchair will increase when driving downhill.

Driving uphill

Always drive uphill with great care.

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

Figure 136. Driving uphill.

WARNING!

Risk of tipping on uneven surfaces

Take great care when driving on side slopes with an uneven surface (e.g. grass, gravel, sand and snow).

WARNING!

Risk of tipping when driving uphill

Do not drive uphill on gradients greater than 10.5°.

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

Manual brake release

The wheelchair is fitted with one or two manual brake releases acting on the magnetic wheel locks to allow manual movement of the wheelchair.

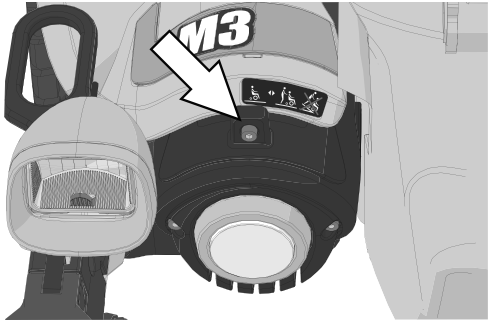


Figure 137. Release lever location.

WARNING!

Wheel locks

Do not release or engage the wheel locks unless power to the wheelchair is off.

To prevent the wheelchair rolling away, make sure it is on a level surface before releasing the wheel locks.

Be aware that the wheelchair has no brakes when the wheel locks are in free-wheel position.

Make sure that the person pushing the wheelchair has full control when the wheel locks are released.

Always engage the wheel locks after the wheelchair has been pushed manually.

Releasing wheel locks

1. Switch off the wheelchair using the start button on the control panel.
2. Looking at the wheelchair from the front; slide the left lever clockwise and the right lever anti-clockwise until they reaches their end positions. The wheelchair can now be moved manually.

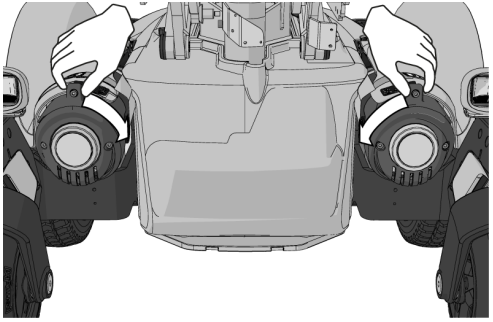


Figure 138. Releasing wheel lock.

WARNING!

Malfunctioning wheel locks

When the wheel locks are released, the wheelchair cannot be driven. If it can be driven, contact an authorized Permobil service center as soon as possible.

Engaging wheel locks

1. Switch off the wheelchair using the start button on the control panel.
2. Looking at the wheelchair from the front; slide the left lever anti-clockwise and the right lever clockwise until they reaches their end positions. The wheel locks shall now be engaged.

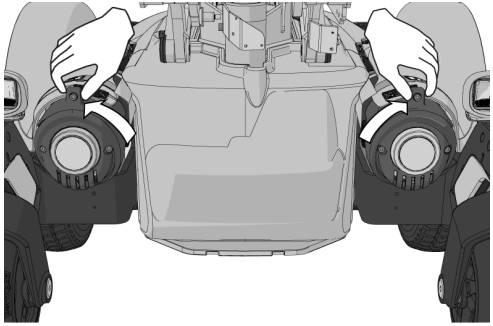


Figure 139. Engaging wheel locks.

Batteries - charging

How frequently you need to charge the wheelchair's batteries depends on a number of factors, including how you use the wheelchair, the temperature, the age of the batteries. All batteries 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 or discharged.

NOTICE

Discharged batteries

Should the batteries be drained completely, charge them again as soon as possible since a complete loss of charge reduces battery service life.

To achieve the best service life, never let batteries discharge completely. Always charge the batteries immediately after they have been discharged.

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

Charging batteries

Make sure that the wheelchair is switched off with the On/Off button on the control panel and then plug the charging jack into the charger socket. The battery voltage indicator on the wheelchair's control panel will light up and show charging status during charging.

Once charging has been completed, the wheelchair must be switched off and on again with the On/Off button on the control panel before it can be driven.

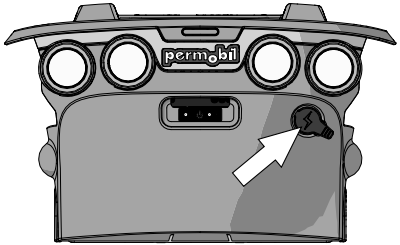


Figure 140. Charger socket.

NOTICE

Battery charger - see supplied manual

For a description and battery charger directions, refer to the manual supplied.

WARNING!

Risk of fire or explosion - charging conditions

Use only the charger supplied with your wheelchair or a charger recommended by Permobil. The use of other chargers may damage the batteries, the wheelchair electronics or the charger itself. It may also result in parts becoming overheated, which may entail a greater risk of fire.

Only use chargers with a max 10 A charging current (average value). The effective value of the charging current must not exceed 12 A. The batteries must be charged in a well-ventilated room, not in a closet. The batteries must not be charged in a bathroom or wet room.

WARNING!

Risk of fire or explosion - do not short-circuit

Exercise caution when using metallic objects during work with batteries. A short-circuit can easily cause an explosion. Always use safety gloves and goggles.

WARNING!

Risk for overheating, sparks or short-circuit

To interrupt the charging process, turn off the power supply at the switch on the charger before removing the charging jack from the wheelchair's charger socket. This is to avoid sparking and unnecessarily high wear on the charging contact.

The charger may get hot and must not be covered. The charger must be placed so that it has free space on all sides.

The charging jack must be replaced if it is damaged or gets hot during charging. Both the jack on the charger cable and the wheelchair's charger socket must be replaced if one part is damaged or worn. The contacts must be replaced by qualified personnel.

NOTICE

Procedures when charging the batteries

The charging cable may not be extended.

Carefully read the instructions supplied with the charger before starting to charge the wheelchair.

Switch off the wheelchair with the On/Off button on the control panel before charging but make sure the main circuit breaker is in the On position.

Make sure the charger connector is fully inserted in the wheelchair's charger socket.

The wheelchair may not be driven when the charger is connected.

Transporting the wheelchair

General

The wheelchair may only be transported in vehicles approved for this purpose.

Check that the wheelchair is properly secured and that the wheel locks are engaged. When transporting the wheelchair in a vehicle, the wheelchair must be locked into position by running tie-down straps through the tie-down eyes at the front and rear, marked with yellow stickers.

Secure the wheelchair according to the instructions from the manufacturer of the vehicle restraint system. Always make sure that the tie-down points in the transporting vehicle are well-anchored.

ⓘ To make transporting the wheelchair easier, the backrest can be removed or folded down in a few simple moves; see *Removing backrest*, Page 76
If necessary, the headrest can also be removed; see *Headrest*, Page 84

Figure 141. Sticker showing where to find the tie-down eyes.

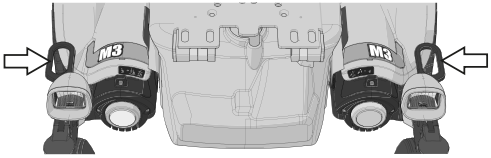


Figure 142. Front tie-down eyes.

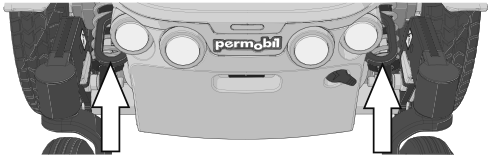


Figure 143. Rear tie-down eyes.

DANGER!

Risk of injury – user transported in wheelchair

Permobil recommends that users not be transported in any vehicle, while seated in the wheelchair.

If the wheelchair must be transported while the user is seated in it, the following requirements must be fulfilled:

- the vehicle is equipped with a locking system that is approved by Permobil. For alternative vehicle securement options, please consult your dealer.
- the locking system must be dimensioned for the total weight of the wheelchair and the user.
- the user uses a three-point seat belt attached to the vehicle.
- the wheelchair itself must be crash tested and approved.
- the wheelchair should be fitted with a headrest during transit.

If any of these requirements are not met, the user must be transferred to a vehicle seat and use a factory installed three-point seat belt during the journey.

DANGER!

Risk of injury – correct position of seat belt

The correct positioning of the vehicle's three-point seat belt is on the inside of the wheelchair's armrest. The three-point seat belt should fit closely to the user's body without anything getting in the way. Failure to correctly position the three-point seat belt may cause bodily harm and/or death, if the vehicle is in an accident

WARNING!

Requirements for vehicles used for transportation

The wheelchair may only be transported in vehicles approved for this purpose. Make sure the vehicle is suitably designed and equipped to transport a person in a wheelchair and that the fastening points on the transporting vehicle are well-anchored.

Figure 144. The left figures show the correct positioning of the seat belt.

CAUTION!

Damage during transport

It is extremely important to inform Permobil if the wheelchair and its accessories have suffered transport damage, damage during driving or damage from other causes as soon as possible after the event. There is a risk that the wheelchair and its accessories can no longer be used safely and securely. You need to contact your service provider or Permobil for further information. See contact information:
Head office of the Permobil group.

WARNING!

Positioning belt does not replace a seat belt

The seating system's positioning belt is designed only to position the user; it does not provide any protection in the event of a road traffic accident. The positioning belt does not replace the use of vehicle-mounted three-point seat belt during journeys.

WARNING!

Positioning belt

The positioning belt is an accessory.

A qualified service technician should install the positioning belt. Before operation the wheelchair, make sure that the positioning belt is correctly installed and that no excess material hangs down. Excess belt strap material could become caught in the wheelchair or other places in the surrounding area and cause injury to the user or damage to the wheelchair and its surroundings.

While the wheelchair is in use, the positioning belt, and any other components installed for the unique safety and positioning needs of the user, should be securely fastened.

If any sign of damage or wear appears, contact your Permobil dealer right away to obtain a replacement.

WARNING!

Secure loose objects during transportation

Auxiliary wheelchair equipment, loose or mounted on the wheelchair, must either be secured to the wheelchair or removed from it. Disassembled or movable auxiliary equipment must be properly secured in the vehicle during transportation. This is to prevent loose parts or parts that may come lose from causing injury to the occupants while in transit.

WARNING!

Securing the wheelchair in vehicles

The wheelchair may only be locked into position using a locking system approved by Permobil or by tie-down straps.

Secure the wheelchair by tie-down straps through the brackets in the front and the back, each marked with a yellow sticker. Do not attach the tie-down straps to any other part of the wheelchair. Secure the tie-down straps to the vehicle according to instructions for the restraint system in the vehicle.

Always make sure that the tie-down points on the transporting vehicle are well-anchored.

Set the brake release on the wheelchair to locked position.

General advice for air transportation

NOTICE

Preparations for air transportation

Airlines have different rules regarding wheelchair transport. Please contact your specific airline for more information and to make sure the wheelchair can be transported safely.

Batteries

Gel batteries: in most cases, gel batteries do not have to be removed from the wheelchair.

The main circuit breaker 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.

The wheelchair's dimensions and weight

The wheelchair's weight and dimensions are important, depending on the size and type of airplane in which the wheelchair is to be transported. Always check with the airline what rules apply.

Preventing damage to wheelchair

Since the wheelchair will be put with other goods in a confined space during air transportation, it is important to take preventive measures to minimize transportation damage to the wheelchair.

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

Maintenance and repairs

Tool bag

The wheelchair comes with a tool bag with the following contents for use for maintenance and minor repairs.

Tool	Area of use
Allen keys.	General maintenance and seat adjustment.
11, 13 mm wrenches.	General maintenance and replacing batteries.

Frequency of maintenance and inspection

Permobil recommends compliance with the following maintenance and inspection schedule. Contact your authorized dealer for all service-related needs or questions.

Maintenance and inspection schedule	Daily	Weekly	Month-ly	Yearly
Check battery level indicator and charge if necessary.	X			
Check that the joystick panel and other control panels are not damaged.	X			
Make sure all removable parts are securely fastened.	X			
Check positioning belts for wear and make sure buckles work.	X			
Check tires and inflate as necessary.		X		
Make sure lights and turn signals are operational and clean.		X		
Clean the wheelchair and upholstery.			X	
Check upholstery, seating, headrest, arm pads and calf pads for wear.			X	

Maintenance and inspection schedule	Daily	Weekly	Month-ly	Yearly
Check that the brake release and the brake release lever work properly.			X	
Complete inspection, safety check and service performed by an authorized wheelchair dealer.				X

Serial number labels

Serial number label on chassis

The serial number label is located on the lower, left hand side of the wheelchair chassis. Look between the rim spokes.

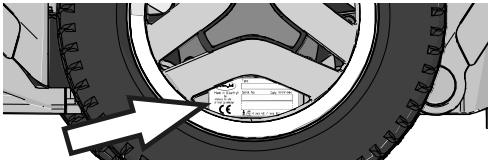


Figure 145. Chassis identification number label.

Serial number label description

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.

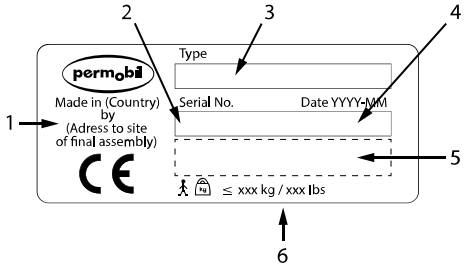


Figure 146. Serial number label.

Serial number label on R-net power module

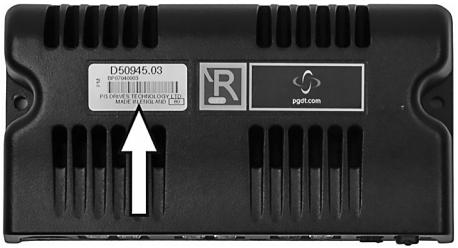


Figure 147. R-net power module ID number.

Serial number label on R-net control panel

Figure 148. R-net control panel ID number.

General

For the wheelchair to work well, it is important that it be used correctly and regularly maintained. A well maintained wheelchair lasts longer and has a lower risk of defects.

CAUTION!

Maintenance by a qualified service technician

Only carry out the adjustments and maintenance specified in the manual. All other service, repairs and maintenance should be performed or supervised by a qualified service technician. Read all instructions carefully before proceeding. If question mark occurs, contact Permobil or a Permobil authorized dealer for assistance.

NOTICE

When servicing batteries or circuit breakers, switch off main circuit breaker

The main circuit breaker 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 circuit breaker.

NOTICE

Additional tools may be required

Some repairs may require tools other than those supplied with the wheelchair.

General - batteries and storage

- The wheelchair must not be stored in areas subject to condensation (steam or moisture on surfaces), e.g. utility rooms or similar.
- If the wheelchair is equipped with acid batteries, the acid level must be regularly checked. If the wheelchair is equipped with gel or AGM batteries, the liquid level does not need to be checked.
- Battery service life depends entirely on regular charging.

Short-term storage

For short-term battery storage, the room should be at least 41.0°F. If the temperature is lower than this, the batteries may not charge fully and may be more vulnerable to corrosion.

Long-term storage

For long-term storage battery storage, the room may be unheated, but to guard against battery corrosion, make sure the room is a few degrees warmer than its surroundings, as this will keep the room drier.

Cleaning

Regular care and maintenance will prevent unnecessary wear and damage to your Permobil product.

(i) Use only the following cleaning methods.

(i) In the case of severe soiling of the upholstery or damage to the surface finish, contact Permobil for information.

CAUTION!

Switch of the wheelchair before cleaning

Always switch the power supply to the wheelchair off before cleaning.

Metal surfaces

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

Remove scuff marks from semi-matte 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 and 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 or soapy water residues with a clean, dry cloth. Repeat this procedure 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 and may void the wheelchair's warranty.

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, 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.

NOTICE

Hosing can cause damage to electronics

Never hose the wheelchair down as this may damage the electronics. Always switch the wheelchair off for cleaning.

Corrosion protection

The plastic and padded parts are corrosion resistant. The metal parts are protected against corrosion by a zinc layer underneath the powder coating.

Positioning belt

ⓘ Accessory

Check the condition of positioning belts regularly in case any damage or wear has occurred. If signs of damage or wear appear, replace the positioning belt immediately through your Permobil dealer.

Brake release

Every month, check that the brake release and the brake release lever(s) are working properly.

When the brakes are released, it should not be possible to drive the wheelchair. If it can be driven, contact an authorized Permobil service center as soon as possible.

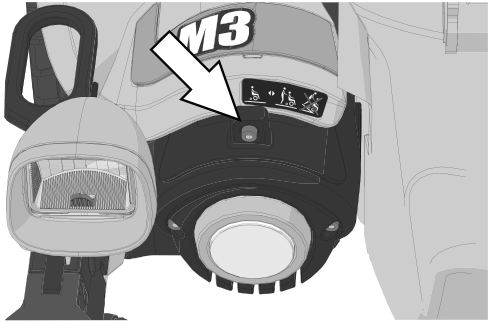


Figure 149. Brake release lever.

Wheels

Drive wheels

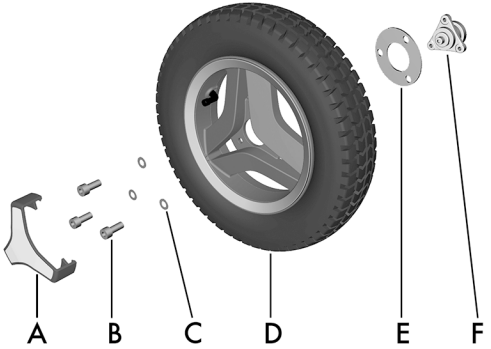


Figure 150. Assembly/removal of drive wheels.

A. Hub cap.

B. Screw, ISO 4762 M8x20 8.8 Fe/Zn 5 C1/LC DIN 267-28.

C. Washer, ISO 7089 8 200 HV Fe/Zn 5 C1 (8,4x16x1,6).

D. Drive wheel.

E. Spacer, in use only on some models.

F. Wheel hub, do not remove the hub from drive pack while performing service on the wheel.

The following tools are necessary for this task:

- 1 Torque wrench.
- 1 Allen key socket 6 mm.

NOTICE

Replace used wheel bolt

If a wheel bolt is removed for tire service, replace it with a new, unused bolt from Permobil and tighten it to the recommended torque. Also, inspect the drive axle and wheel rim for any damage. Damage to either part can cause the wheel bolt to loosen or fracture. Permobil recommends that wheel bolts be used only one time.

Removing the drive wheels

(i) Do not remove the wheelhub (F) from drive pack while performing service on a wheel.

1. Switch off the main power switch on the control panel.
2. Jack up the wheelchair so that the wheel turns freely.
3. Use wedges to secure the chair further.

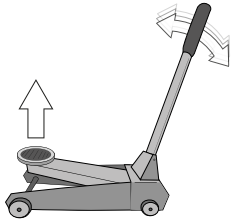


Figure 151. Use a jack or equivalent to lift up the wheelchair.

4. Remove the hub cap by carefully levering it out using a finger on two edges of the hub cap.

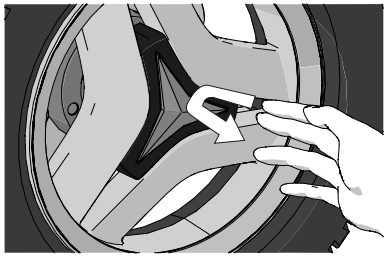


Figure 152. Use your fingers as follows on two edges of the hub cap.

5. Remove the three screws that hold the wheel in place. The central screw must not be removed.
6. Remove the wheel by pulling it straight out.
7. Remove the spacer (only on some models).

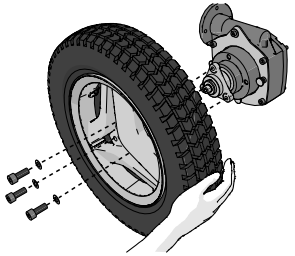


Figure 153. Pull the wheel straight out after you have removed the three screws.

Mounting drive wheels

1. Mount the spacer (only on some models).
2. Fit the wheel onto the wheel hub.
3. Insert the three screws and the three washers. Tighten the screws no more than 11 lb.ft.

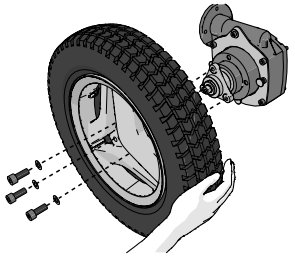


Figure 154. Mount the wheel onto the wheel hub.

4. When all screws and washers are in place tighten the screws. Tightening torque 17.7 lb.ft.

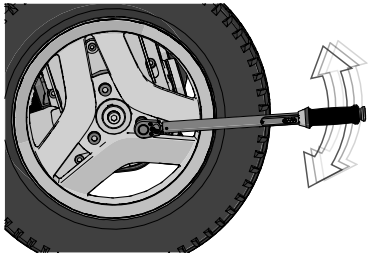


Figure 155. Use a torque wrench to tighten the screws.

5. Push the hub cap in place.

6. Remove the wedges.

7. Lower the wheelchair with the jack or equivalent.

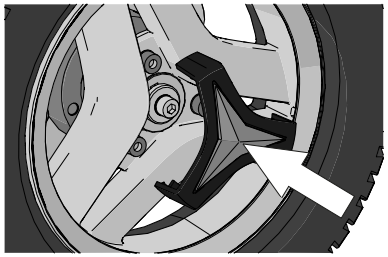


Figure 156. The hub cap snaps when it is in place.

Drive wheel rim

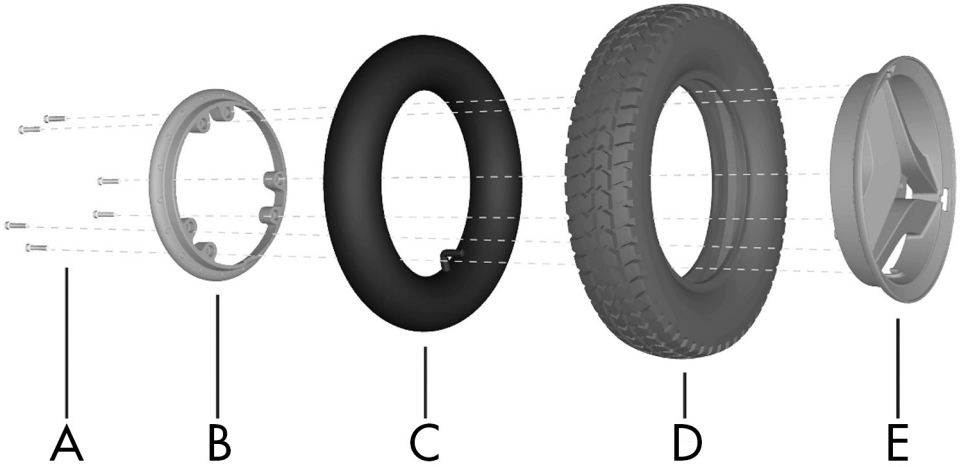


Figure 157. Assembling a tire to a split rim.

A. Screw, ISO 4762 M6x25 8.8 Fe/Zn 5 C1/LC DIN 267-28

B. Rim, inner section

C. Inner tube

D. Tire

E. Rim, outer section

Taking drive wheels rim apart

WARNING!

Risk of injury - release air from tire

Ensure that pneumatic tires are not pressurized before the rim is taken apart, otherwise there is a risk of personal injury.

The rim can be taken apart to make it possible to assemble/remove solid or pneumatic tires.

1. Remove the wheel from the wheelchair. See *Drive wheels*, Page 205.
2. If the tire is pneumatic, release the air.
3. Remove the six screws holding the two halves of the rim together.
4. Take the rim apart.

Putting drive wheels rim together

Read all warnings contained in this section before filling the tires. Failure to do so may result in bodily injury to the user and damage to the wheelchair and other property, and also void any warranty applicable to the wheelchair.

Assemble in the reverse order. Tighten the six screws using a torque wrench. Tightening torque: 16.2 lb.ft. Inflate the tire to the recommended tire pressure: 29–36 psi.

CAUTION!

Risk of injury when incorrect tire pressure

Before operating your wheelchair the first time and at regular intervals, check the tire pressure as is specified in this manual. Also, check the tire pressure when there has been a significant change in temperature or altitude. Incorrect tire pressure may cause the wheelchair to be less stable and less maneuverable.

NOTICE

Risk of damage if tires are overfilled

Do not overfill the tires. Overfilling may result in risk of damage to the wheel assembly.

NOTICE

Risk of reduced performance when insufficient tire pressure

Insufficient tire pressure may result in abnormal wear and a shorter driving range.

CAUTION!

Maintenance by a qualified service technician

Only carry out the adjustments and maintenance specified in the manual. All other service, repairs and maintenance should be performed or supervised by a qualified service technician. Read all instructions carefully before proceeding. If question mark occurs, contact Permobil or a Permobil authorized dealer for assistance.

Inflating tires

Read all warnings contained in this section before filling the tires. Failure to do so may result in bodily injury to the user and damage to the wheelchair and other property, and also void any warranty applicable to the wheelchair.

At regular intervals, check that the wheelchair's tires have the prescribed tire pressure, between 29–36 psi. Incorrect tire pressure can impair stability and maneuverability, while extremely low tire pressure can cause abnormal wear as well as shorter tire life.

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

Figure 158. Filling valve on drive wheel.

CAUTION!

Risk of injury when incorrect tire pressure

Before operating your wheelchair the first time and at regular intervals, check the tire pressure as is specified in this manual. Also, check the tire pressure when there has been a significant change in temperature or altitude. Incorrect tire pressure may cause the wheelchair to be less stable and less maneuverable.

NOTICE

Risk of damage if tires are overfilled

Do not overfill the tires. Overfilling may result in risk of damage to the wheel assembly.

NOTICE

Risk of reduced performance when insufficient tire pressure

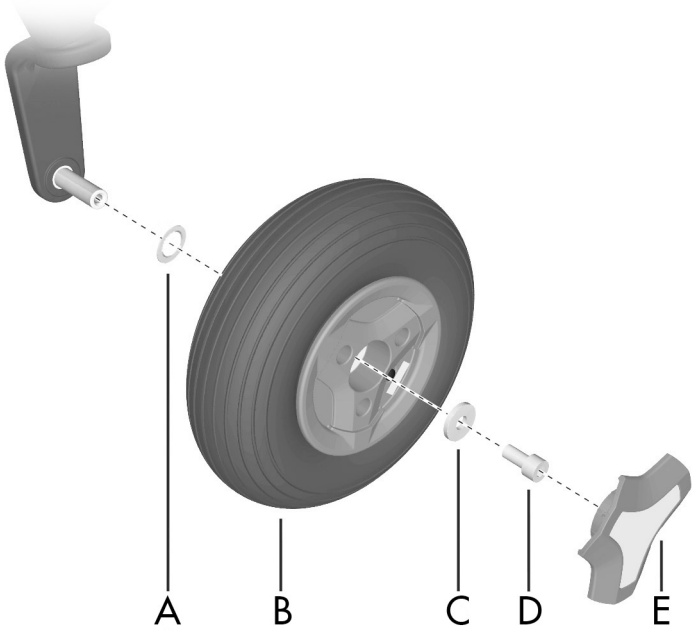
Insufficient tire pressure may result in abnormal wear and a shorter driving range.

CAUTION!

Maintenance by a qualified service technician

Only carry out the adjustments and maintenance specified in the manual. All other service, repairs and maintenance should be performed or supervised by a qualified service technician. Read all instructions carefully before proceeding. If question mark occurs, contact Permobil or a Permobil authorized dealer for assistance.

Casters



A. Spacer
B. Wheel
C. Washer, 8,5x23x3
D. Screw, ISO 4762 M8x16 10.9 Fe/Zn
E. Hub cap

Figure 159. Assembly of rim.

For this task the following tools are necessary:

- 1 Torque wrench.
- 1 Allen key socket 6 mm.

Removing caster

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 hub cap (E) by carefully levering it out using a screw driver.
4. Remove the screw (D) and the washer (C).
5. Pull the wheel off the shaft.

Mounting caster

NOTICE

Replace used wheel bolt

If a wheel bolt is removed for tire service, replace it with a new, unused bolt from Permobil and tighten it to the recommended torque. Also, inspect the drive axle and wheel rim for any damage. Damage to either part can cause the wheel bolt to loosen or fracture. Permobil recommends that wheel bolts be used only one time.

1. Check that the wheel shaft and rim are undamaged. Clean as necessary to remove dirt and rust. Replace damaged parts.
2. Assemble the wheel onto the axle with the use of hand force only. Make sure the rim is fully seated upon the axle.
3. Assemble the washer (C) onto the screw (D) and secure the wheel. Tighten the screw using a torque wrench. Tightening torque: 17.7 lb.ft. Do not use a pneumatic impact wrench.
4. Assemble the hubcap (E).

Taking the caster rim apart

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. See *Removing caster*, Page 217.
4. Remove the three bolts with nuts which holds the inner and outer parts of the rim together.
5. Take the rim apart.

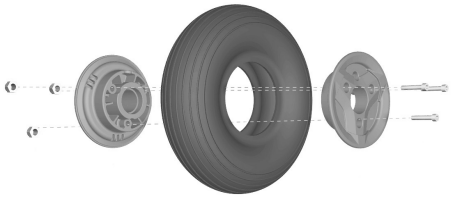


Figure 160. Rim with solid tire.

Putting the caster rim together

1. Fit the two rim halves together with tire.
2. Tighten the three screws using a torque wrench.
   Tightening torque: 7.2 lb.ft.
3. Fit the wheel on to the wheelchair. See *Mounting caster*, Page 218.

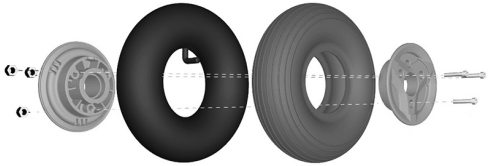


Figure 161. Rim with pneumatic tire.

Inflating casters

(i) Applies only if the wheelchair is fitted with pneumatic tires.

(i) Read all warnings contained in this section before filling the tires. Failure to do so may result in bodily injury to the user and damage to the wheelchair and other property, and also void any warranty applicable to the wheelchair.

At regular intervals, check that the wheelchair's tires have the prescribed pressure. Incorrect tire pressure can impair stability and maneuverability, while extremely low tire pressure can cause abnormal wear as well as shorter tire life. Accordingly, check regularly to ensure tire pressure is maintained at 29–36 psi.

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

Figure 162. Filling valve.

CAUTION!

Risk of injury when incorrect tire pressure

Before operating your wheelchair the first time and at regular intervals, check the tire pressure as is specified in this manual. Also, check the tire pressure when there has been a significant change in temperature or altitude. Incorrect tire pressure may cause the wheelchair to be less stable and less maneuverable.

NOTICE

Risk of damage if tires are overfilled

Do not overfill the tires. Overfilling may result in risk of damage to the wheel assembly.

NOTICE

Risk of reduced performance when insufficient tire pressure

Insufficient tire pressure may result in abnormal wear and a shorter driving range.

CAUTION!

Maintenance by a qualified service technician

Only carry out the adjustments and maintenance specified in the manual. All other service, repairs and maintenance should be performed or supervised by a qualified service technician. Read all instructions carefully before proceeding. If question mark occurs, contact Permobil or a Permobil authorized dealer for assistance.

Replacing batteries

Removing batteries

The following tools are necessary for this task:

- Torque wrench.
- 1 Allen key socket 6 mm.
- 1 Ring wrench 10 mm.

WARNING!

Use safety gloves and safety goggles

Exercise caution when using metallic objects during work with batteries. A short-circuit can easily cause an explosion. Always use safety gloves and safety goggles. Remember that the batteries are heavy and must be handled with great caution.

NOTICE

Disposal of malfunctioning batteries

Used or malfunctioning batteries must be disposed of responsibly in accordance with local recycling regulations.

1. Place the wheelchair on a level surface. If possible, raise the seat lift halfway up, to facilitate removal of the chassis top cover.
2. Switch off the power supply using the on/off key on the control panel and switch the automatic main circuit breaker to Off.

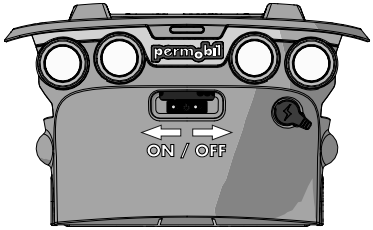


Figure 163. Main circuit breaker.

3. Remove the two knobs holding the chassis top and front covers.

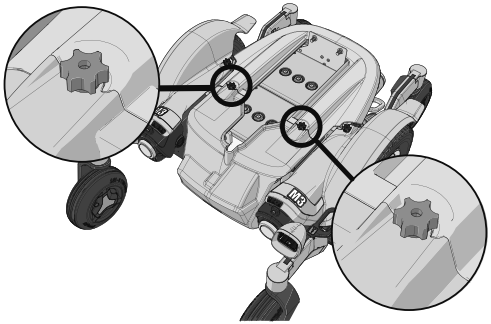


Figure 164. The chassis covers are secured with two knobs.

4. Slide the top cover off the chassis.

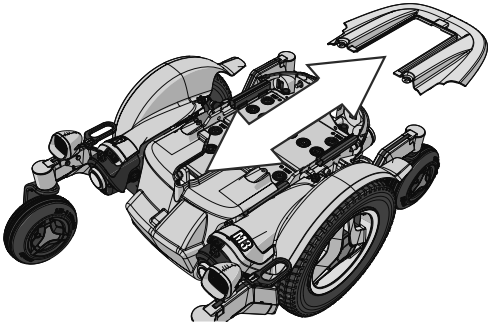


Figure 165. Top cover.

5. Pull the rear cover off the dual locks and off the chassis.

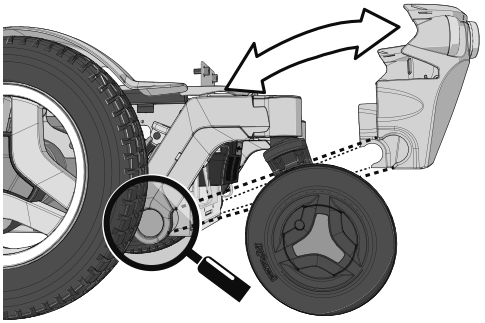


Figure 166. Rear cover.

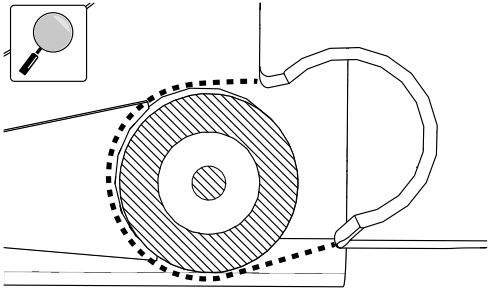


Figure 167. Enlargement showing the location of the cover on the rear axle.

WARNING!

No load on the seat

No load on the seat or the AP elevator during this operation. If there is any load on the seat or the AP elevator could it cause permanent damage to the wheelchair or damage to the person(s) in the wheelchair and in close proximity to the wheelchair. This applies until the screws are re-installed to the correct torque.

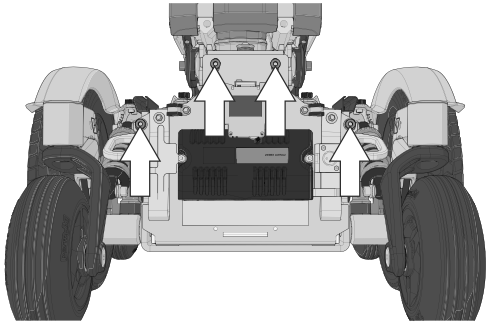


Figure 168. The battery box is secured with four bolts.

6. Remove the four screws holding the battery box.

7. Disconnect the left motor and inhibit cable connector (C).
8. Disconnect the the left motor and the bus cable connector (B).
9. Disconnect the control panel connector (A).

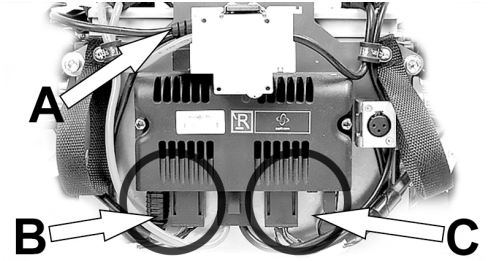


Figure 169. Connectors (B) and (C); for disconnection.

10. Use the straps to pull the battery box out of the chassis.

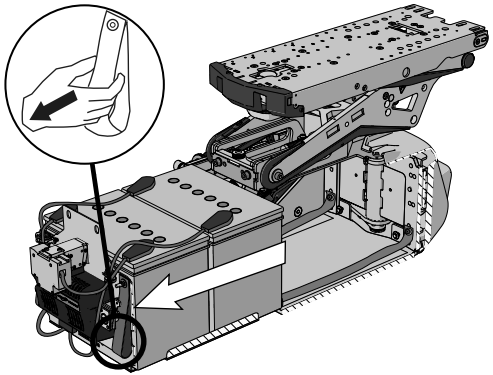
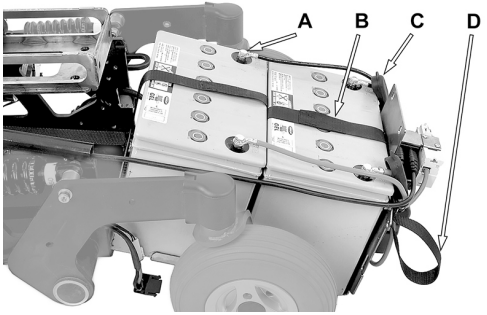


Figure 170. Straps for pulling out battery box.

11. Remove the battery terminal covers.
12. Unscrew the cables from the battery terminals.
13. Lift the batteries out of the battery box using the battery straps.



A. Battery terminal.
B. Battery strap.
C. Battery terminal cover.
D. Battery box pull-out strap.

Figure 171. Battery box when pulled out from chassis.

Installing batteries

The following tools are necessary for this task:

- Torque wrench.
- 1 Allen key socket 6 mm.
- 1 Ring wrench 10 mm.

NOTICE

Different types of batteries

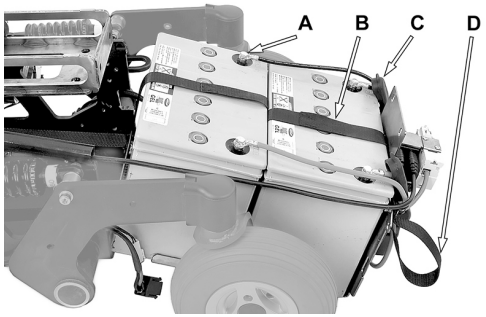
There are different types of batteries for this model. Check carefully which battery you have.

CAUTION!

Always use recommended batteries

Always use batteries recommended by Permobil. Batteries that replace original batteries must have the same dimensions and specifications as the original batteries'.

1. Use the battery straps and lift the new batteries in reverse order (leave the straps on the new batteries).



A. Battery terminal.

B. Battery strap.

C. Battery terminal cover.

D. Battery box pull-out strap.

Figure 172. Battery box when pulled out from chassis.

2. Ensure that the battery pole positions match the appropriate specification in figure and connect the batteries according to matching specification. Also see the sticker on the inside of the chassis covers.

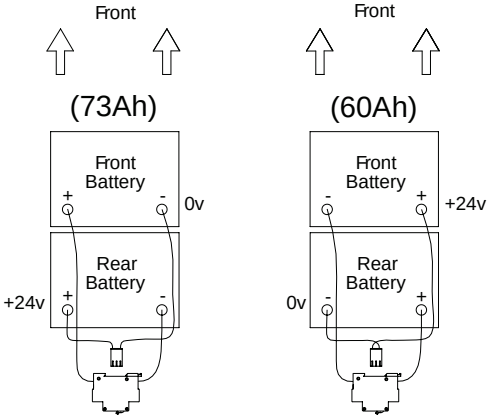


Figure 173. Wiring schematics for the 73 Ah and 60 Ah batteries.

3. Run and secure the cable connected to the left battery pole of the rear battery in the cable holder.

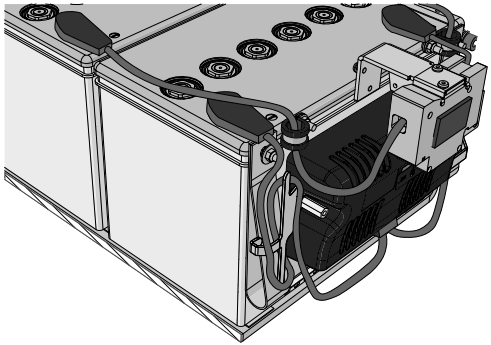


Figure 174. Run and secure the cable connected to the left battery pole of the rear battery as shown..

4. Run and secure the cable connected to the right battery pole of the rear battery in the cable holder.

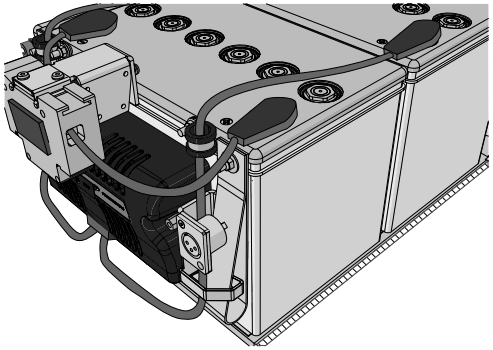


Figure 175. Run and secure the cable connected to the right battery pole of the rear battery as shown.

5. Push the battery box in to the chassis.

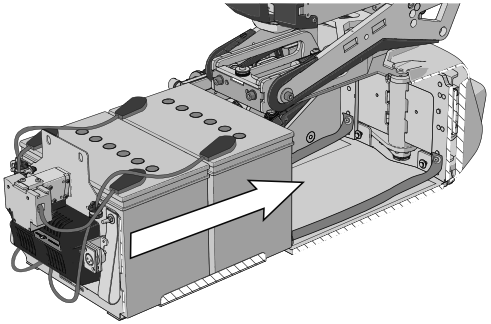


Figure 176. Push in the battery box.

6. Connect the the left motor and inhibit cable connector (C).
7. Connect the left motor and bus cable connector (B).
8. Connect the control panel connector (A).

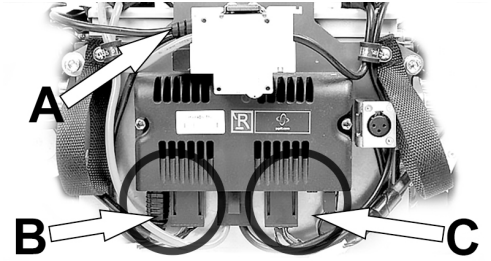


Figure 177. Connectors (B) and (C); for connection.

9. Refit the four screws securing the battery box. Use a torque wrench to tighten the screws. Tightening torque: 17.7 lb.ft.

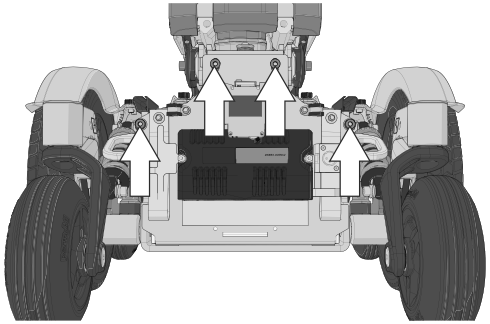


Figure 178. The battery box is secured with four bolts.

10. Refit the rear chassis cover on to the chassis.

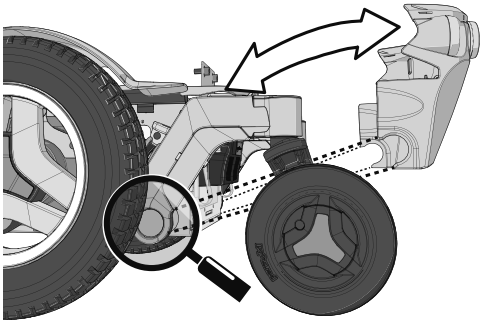


Figure 179. Rear cover.

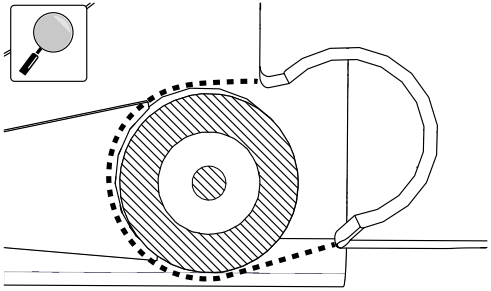


Figure 180. Enlargement showing the location of the cover on the rear axle.

11. Refit the top chassis covers on to the chassis.

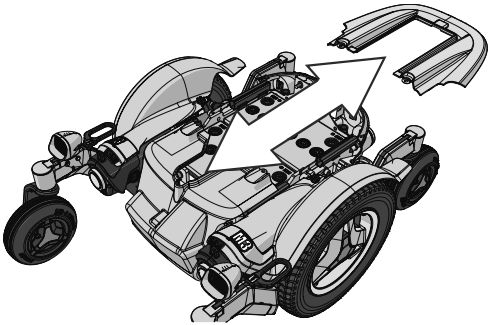


Figure 181. Top cover.

12. Refit the two knobs.

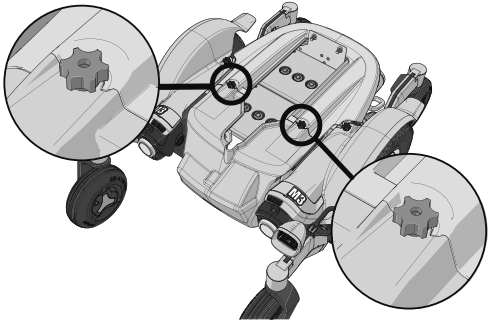


Figure 182. The chassis covers are secured with two knobs.

13. Switch the automatic main circuit breaker to the On position.

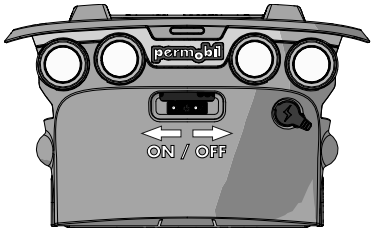


Figure 183. Main circuit breaker located under the rear lights.

Main circuit breaker

The main circuit breaker also functions as a battery isolator although it is referred to as the main circuit breaker in the user's manual.

The main circuit breaker is automatic and can be reset when it has been triggered. Reset it by putting the switch to the On position.

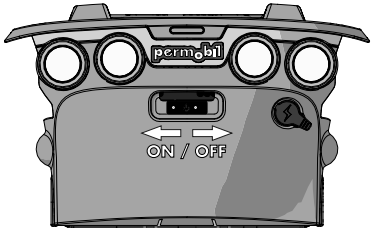


Figure 184. Main circuit breaker.

NOTICE

Investigate tripped main circuit breakers

A tripped main circuit breaker often indicates a major electrical fault. The cause should be carefully investigated before resetting.

NOTICE

Before using the main circuit breaker

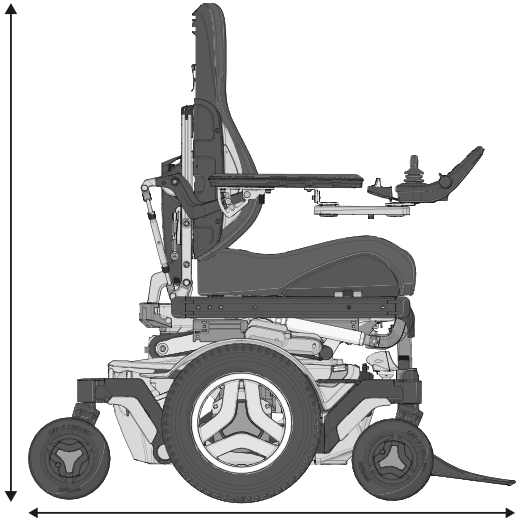
Always switch off the power to the control panel before switching off the main power with the main circuit breaker.

Accessories

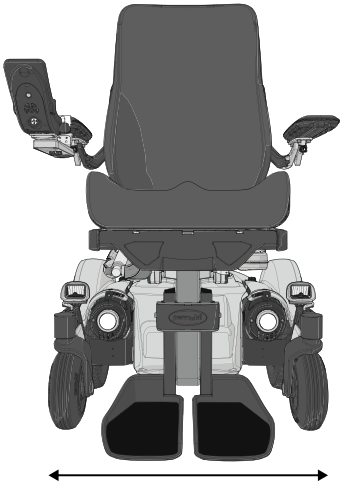
Accessories for Permobil products are subject to continuous development. Contact your nearest Permobil dealer for more information on the accessories available for your product.

Technical specifications

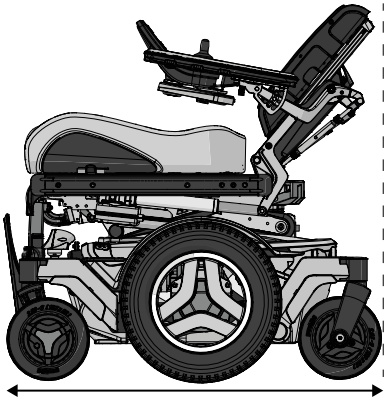
Overall dimensions



Base length 44.5"
Base height 38"– 46"



Base width 24" - 31"



Smallest transportation size
Base length 31" – 34"
Base width 24" – 31"
Base height 32"

General

Product name	M3 Corpus
Wheelchair class	Group B

Dimensions and weight

Base length	44.5"
Base width	24" - 31"
Base height	38" - 46"
Weight, including batteries	388 lbs Grp 34 / 403 lbs Grp 24
Minimum transportation length	31" – 34"
Minimum transportation height	32"
Minimum transportation width	24" – 31"
Seat plane angle	0°
Effective seat depth	14" - 22" (by 1" increments)
Effective seat width	17" - 23" (by 2" increments)
Seat surface height at front edge (with power seat lift)	17.5" – 31.5"
Seat surface height at front edge (with fixed seat tube)	17.5" – 18.5" – 19.5"
Max. Backrest angle	120° (manual) 180° (power)
Backrest height	20", 23"- 28" (by 1" increments)
Backrest width	14" – 20" (by 2" increments)
Footrest to seat distance	10"-17" / 5.5"-10.5"
Leg rest to seat surface angle	17.5", 18.5", 19.5" (power)

Dimensions and weight (continued)

Armrest to seat distance	7.25" – 12.5"
Distance between armrests	15" – 19"/19" – 22.5"
Front location of armrest structure	0" – 17"
Horizontal displacement of axle	13"

Power adjustable leg length

Maximum length from footplate to seat plate	20.5"
Minimum length from footplate to seat plate	11.8"
Maximum load	154 lbs

Wheels

Drive wheel tire dimensions	3.00" x 8" Air / solid
Recommended tire pressure	29–36 psi
Caster tire dimensions	180 x 62 mm Solid

Performance

Range	13 mi
Maximum speed forward	6 mph
Minimum braking distance from max speed	6' 11"
Hill-climbing ability	7.5°
Safe slope	7.5°
Static stability downhill	10°
Static stability uphill	10.5°

Performance (continued)

Static stability sideways	15.5°
Ability to negotiate obstacles (approach distance 0")	2"
Ability to negotiate obstacles (approach distance 20")	3"
Minimum ground clearance with user weight	3"
Maximum user weight	300 lbs
Required width of angled corridor	33"
Required doorway entry depth	45"
Required corridor width for side opening exiting the corridor	32"
Required corridor width for side opening entering the corridor	28"
Minimum turning diameter	Ø 44" / Radius 22 mm
Pivot width	43"
Reversing width	43"

Electronics

R-net drive electronics type	R-net 120A

Batteries

Recommended battery type	Group 34 gel
Battery capacity	2 x 60 Ah or 2 x 73 Ah
Charging time	8 hours

Batteries (continued)

Weight (2 x 60 Ah)	2 x 42 lbs
Weight (2 x 73 Ah)	2 x 51 lbs

Circuit breakers

Main circuit breaker	63 A

Control force

Joystick	1.5 N
Keys	2 N

Anterior tilt

Anterior Mount Position	-5° - 0°
Anterior Tilt (Tone/Ortopedic Management	-10° - 0°
Anterior Tilt (Functional Reach)	-20° - 0°

Restrictions and limitations

ICS Switchbox Indications Conditions

Switchbox indication for the function			
LED Indication → Function ↓	Dark	Solid Yellow	Solid Red
Seat lift	-		
Tilt	Back tilt angle > 170°*)	When any of the Low Speed or Extra Low Speed conditions in the tables in the section of *Speed restriction conditions* occurs.	When any of the Drive Inhibit conditions in the section of *Speed restriction conditions* occurs.
Back recline	-		
Legs	-		

Speed restriction conditions

ⓘ User weight up to 297 lbs.					
Speed restriction	When	or when	or when		
Low speed	Seat elevated >2"	Tilt angle -7° - -10°	Back tilt angle >150° if lift <2"		
Extra low speed	Wide footrest mounted and "interfering" with front castor wheels	"Take-me-down" function active	Tilt angle -11° - -20°		
Drive inhibit	Tilt angle >25° or <-20°	Tilt angle >20° and lift >2"	Tilt angle >13° and lift >4"	Back tilt angle >135° and lift > 2"	Back tilt angle >120° and lift >4"
	Back tilt angle >140° and tilt angle >8°	Back tilt angle >135° and lift >8°	Back tilt angle >160°		

ⓘ User weight over 297 lbs.						
Speed restriction	When	or when	or when	or when	or when	or when
Low speed	Seat elevated >2"					
Extra low speed	Wide footrest mounted and "interfering" with front castor wheels	Wide footrest mounted and "interfering" with front castor wheels	"Take-me-down" function active			
Drive inhibit	Tilt angle<0° or >20°	Back tilt angle >135°	Back tilt angle >130° and lift >2"	Back tilt angle >110° and lift >4"	Tilt angle >15° and lift >2"	Tilt angle >8° and lift >4"
	Tilt angle <4° and >4"	Back tilt angle <90° and lift >4"	Back tilt angle <90° and lift >4"			

Conditions that limit seat movement

ⓘ User weight up to 297 lbs (actuator end-limits excluded).					
Speed restriction	When	or when	or when	or when	or when
Seat lift upwards stopped	Back tilt angle >130° and rear of seat raised less than >4.72" when user weight >220 lbs	At 4" when Back tilt angle >145° or tilt angle >8°	At when tilt >30°	At when back tilt angle >160° or tilt angle >30°	Back tilt angle >170° and tilt >25°
Tilt backwards stopped	Back tilt angle ≥175° *)	At 30° when lift 2"-4"	At 6° when lift >4"	Tilt angle ≥50°	Lift and back tilt angle >135°
Tilt forward stopped (anterior tilt is when tilt < 0°)	Back tilt angle >130° and rear of seat raised less than >4.72" when user weight >220 lbs	Back tilt angle ≤85° *)	When tilt ≤0° unless Tone, Reach option	When tilt ≤ –10° with Tone option	When tilt –10° with Reach option
Recline stopped	Back tilt angle ≥180° or ≤85°	At 170° when tilt 25°	At 160° when lift 2"-4"	At145° when 2"-4"	At 135° when lift >4" and tilt >2°

ⓘ User weight up to 297 lbs (actuator end-limits excluded).					
Speed restriction	When	or when	or when	or when	or when
Leg rest stopped	See table *Leg limits for various seat depth*				
	Observe ⋆) Tilt or anterior tilt may continue if 'pushed backrest' is selected.				

ⓘ User weight over 297 lbs (actuator end-limits excluded).					
Speed restriction	When	or when	or when	or when	or when
Seat lift upwards stopped	Back angle >130° and rear of seat raised less than >4.72"	Tilt angle >25°			At when back tilt angle >115° or tilt >8°
Tilt backwards stopped	Back angle ≥175° ⋆)	Back tilt angle >140° and lift 25/64"	At 25° when lift 2"-4"	At 6° when lift >4"	Tilt angle ≥50°
Tilt forward stopped (anterior tilt is when tilt < 0°)	When tilt angle ≤0°				

ⓘ User weight over 297 lbs (actuator end-limits excluded).					
Speed restriction	When	or when	or when	or when	or when
Recline stopped	Back tilt angle ≥175°	Back tilt angle ≤85°	At 160° when lift >25/64" and tilt angle 2°	At 140° when lift >25/64" and tilt angle 2°	
Leg rest stopped	See table *Leg limits for various seat depth*				
	Observe *) Tilt or anterior tilt may continue if 'pushed backrest' is selected.				

Limits given by the ratio of backrest recline and seat tilt

Seat lifted	Backrest recline	Seat tilted with backrest upright (90°)
Max = 300 mm	< 110°	20°
100 mm	< 140°	50° max
50 mm	< 180°	50° max

Leg limits for various seat depth

Seat depth	Seat mount	Minimum leg angle	Leg angle limit for speed reduction wide footplates
14" – 20"	0	85°	110°
21"	1"	85°	100°
22"	2"	85°	97°

Troubleshooting

Troubleshooting guide

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

Event	Possible cause	Remedy
The wheelchair does not start.	Batteries discharged.	Charge the batteries.
	The cable connection to the control panel has come loose.	Insert the cable in the control panel.
	Main circuit breaker switched to off position after e.g. battery replacement.	Reset the main circuit breaker. See page 237.
	Main circuit breaker tripped.	See page 237.
The wheelchair cannot be driven.	Battery charger connected.	Stop charging and disconnect the charging cable from the wheelchair's charger socket.
	Brake release activated.	Reset the brake release.
	Wheelchair locked.	Unlock the wheelchair.

Event	Possible cause	Remedy
The wheelchair switches itself off after a certain period of inactivity (20-30 min).	The electronics' energy saving mode has been activated.	Switch the wheelchair on again using the start button 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 circuit breaker tripped.	See page 237.
The wheelchair can only be driven at reduced speed.	Seat lift or seat angle raised too high. Applies only to an powered seat lift and seat angle.	Lower the seat lift or seat angle.
The wheelchair cannot be charged.	Main circuit breaker switched to off position after e.g. battery replacement.	See page 237.
	The charging circuit breaker has tripped.	Wait five minutes, the circuit breaker will automatically reset.

Diagnostics R-net LCD control panel

General

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

Troubleshooting and repairs must always be performed by qualified personnel with good knowledge of the wheelchair's electronics.

Diagnostic screens

Current diagnostic screen

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

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

NOTICE

The diagnostic screen displays error occasionally

If the fault is in a module not currently in use, it may still be possible to drive the wheelchair, but the diagnostic screen will display occasionally.

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

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

WARNING!

Performing diagnostics

Diagnostics may only be performed by personnel with knowledge of the wheelchair's electronic control system. Incorrect or poorly performed repair works may make the wheelchair dangerous. Permobil accepts no liability for any personal injury or damage to the wheelchair and its surroundings that occur due to incorrect or poorly performed repairs.

NOTICE

Unapproved replacement of parts

If any part is replaced without approval from Permobil, the wheelchair warranty will become void. 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

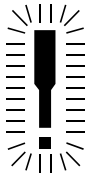
The system fault indicator is displayed on the screen when the control system module has detected a problem. The codes below indicate where the problem is located.

PM = Power module

JSM = Joystick module

Error message

The error message displayed in the bottom left corner of the screen provides a brief description of the error type.



PM
Low Battery

2C00

Figure 185. Screen showing system fault indication.

Error code

The four-digit code displayed in the bottom right corner of the screen indicates which protection circuit has tripped.

Diagnostics R-net LED control panel

Battery voltage indicator

Each time the wheelchair is started, parts of its electronics are checked. When a fault occurs in these parts, it is displayed on the control panel battery voltage indicator and the indicator for speed or driving profile in the form of one or more flashing LEDs.

Troubleshooting and repairs must always be performed by qualified personnel with good knowledge of the wheelchair's electronics.

NOTICE

Error signals

Error messages are not displayed on the indicators while the wheelchair is being driven. They appear when it is next started.

Steady

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

Slowly flashing red LEDs, 1–2 LEDs

The batteries must be charged immediately.

Rapidly flashing, 1–10 LEDs

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

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

WARNING!

Performing diagnostics

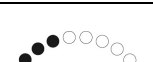
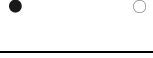
Diagnostics may only be performed by personnel with knowledge of the wheelchair's electronic control system. Incorrect or poorly performed repair works may make the wheelchair dangerous. Permobil accepts no liability for any personal injury or damage to the wheelchair and its surroundings that occur due to incorrect or poorly performed repairs.

NOTICE

Unapproved replacement of parts

If any part is replaced without approval from Permobil, the wheelchair warranty will become void. 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 error messages and remedies

Event	Indication	Remedy
1 LED Low battery voltage		Check the condition of the batteries. Check the contact between the battery and the control unit.
2 LEDs Failure in left drive motor		Check the connection of the left drive motor.
3 LEDs Short circuit in left drive motor		Check the left drive motor's contacts and cables.
4 LEDs Failure in right drive motor		Check the connection of the right drive motor.
5 LEDs Short circuit in right drive motor		Check the right drive motor's contacts and cables.
6 LEDs Battery charger connected		Disconnect the battery charger.
7 LEDs Joystick error		Check that the joystick has not been moved when starting the wheelchair.

Event	Indication	Remedy
8 LEDs Control system error		Check the contacts to the output stage.
9 LEDs Failure in brake circuit		Check the contacts to the magnetic brakes.
10 LEDs High battery voltage		Check the battery and the contacts between the battery and the output stage.
7+5 LEDs Communication error		A communication error has been detected. Check that the cable to the control panel is not damaged and is correctly inserted.
Actuator indicator Actuator error		An actuator error has been detected. If the wheelchair is fitted with more than one actuator, check which one is not working. Check the actuator cable connections.

Repairing defective units

Apart from specific OEM-approved spare parts, there are no replaceable parts in the R-net control system. Contact Permobil for further information on OEM-approved spare parts. Defective units must be sent for repair to Permobil or an authorized Permobil service center.

NOTICE

Unapproved replacement of parts

If any part is replaced without approval from Permobil, the wheelchair warranty will become void. 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.

Stickers

General

Take a good look at all the stickers on the wheelchair and get acquainted with their meaning. The stickers contain important information for safe and proper use.

WARNING!

Accident risk – Always replace missing stickers

Never remove a sticker from the wheelchair. If a sticker becomes difficult to read or falls off, order a replacement sticker from Permobil.

Read the instructions

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

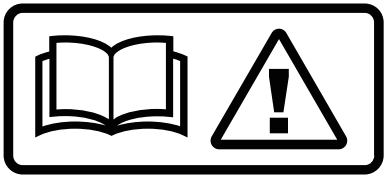


Figure 186. Read the instructions.

Main circuit breaker also battery isolator

The sticker shows switch positions for power supply Off or On.

A description of main circuit breaker function is found on page 237.

Figure 187. Main circuit breaker also battery isolator.

Wheel locks

The sticker shows the wheel lock release lever positions in released and activated states.

A description of wheel lock function is found on page 204.

Figure 188. Wheel locks.

Tie-down point

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

A description of wheelchair transportation is found on page 183.

Figure 189. Tie-down point.

Crush hazard

The sticker indicates a crush hazard.

Figure 190. Crush hazard.

Warning

The sticker indicates that special attention is required.

Exercise extreme caution where this warning symbol appears. Failure to observe warnings may lead to personal injury, including damage to the wheelchair and other property.

Figure 191. Warning, special attention is required.

Battery connections and main circuit breaker

The stickers shows the polarity which differs depending on which battery capacity, 60Ah or 73Ah, the product is equipped with.

The positive battery cable (+) is shown in red on the sticker.

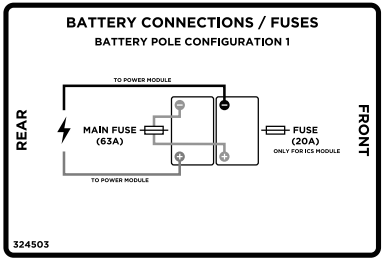


Figure 192. Battery terminals, main circuit breaker and fuse, apply to products equipped with 60Ah batteries.

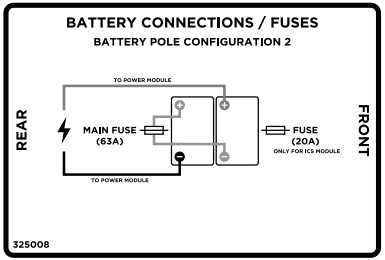


Figure 193. Battery terminals, main circuit breaker and fuse, apply to products equipped with 73Ah batteries.

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