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Invacare® G50

**Power Wheelchair
User Manual**



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1 Introduction

Dear user,

First we would like to thank you for purchasing our product! We hope that you will have a great deal of pleasure with your new power wheelchair.

This operating manual contains important information and notes about:

- **Safety**
- **Operation**
- **Care and maintenance**

Please take care to read the operating manual thoroughly before starting out on your first journey.

This wheelchair has been constructed for a large circle of users with different requirements.

The decision whether the model is suitable for the user may only be taken by medical specialists with appropriate expertise.

Invacare® or their statutory representatives can accept no liability in cases in which the wheelchair has not been adapted to suit the users' handicaps.

Some maintenance and settings can be performed by the user or his/hers attendants. Certain adjustments do however require technical training and may only be carried out by your Invacare® specialist dealer. Damages and errors caused by nonobservance of the user manual or as a result of incorrect maintenance are excluded from all guarantees.

This manual contains copyrighted information. This manual may not be reproduced or reprinted either partly or completely without previous written consent from Invacare® or its statutory representatives. We reserve the right to make any necessary alterations on the grounds of technical improvements.

1.1 Important symbols in this manual



General risks

This symbol warns you of general hazards!

- *Always follow the instructions to avoid injury to the user or damage to the product.*
-



EXPLOSION HAZARD!

This symbol warns you of an explosion hazard, which can be caused by excessive tyre pressure in a pneumatic tyre.

- *Always follow the instructions to avoid injury to the user or damage to the product.*
-



BURN HAZARD!

This symbol warns you of the danger of chemical burns, for example due to the discharge of battery acids!

- *Always follow the instructions to avoid injury to the user or damage to the product.*
-



BURN Risk!

This symbol warns of the risk of burns, for example, as a result of hot motor surfaces.

- *Follow the instructions in order to avoid injury or damage to the product.*
-



RISK OF CRUSHING!

This symbol warns of a risk of crushing caused by being careless with heavy components.

- *Always follow the instructions to avoid injury to the user or damage to the product.*
-



Wear eye protection

This symbol refers to the requirement for wearing eye protection, for example when working with batteries.

- *You must wear safety goggles when this symbol is displayed.*
-



Wear protective gloves

This symbol indicates the requirement to wear protective gloves, for example when working with batteries.

You must wear protective gloves when this symbol is displayed.



NOTE:

This symbol identifies general information which is intended to simplify working with your product and which refers to special functions.



Requirements:

- This symbol identifies a list of various tools, components and items which you will need in order to carry out certain work. Please do not attempt to carry out the work if you do not have the listed tools available.
-



READ WELL BEFORE OPERATION!

This symbol advises you to read information carefully.

1.2 Important symbols found on the vehicle



DO NOT APPLY HEAVY WEIGHT TO THIS AREA! Danger of damage to the vehicle!

- *Never apply pressure or heavy weight to areas marked with this symbol!*
-



This product has been supplied from an environmentally aware manufacturer. This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.

- *The 'crossed out wheelie bin' symbol is placed on this product to encourage you to recycle wherever possible.*
 - *Please be environmentally responsible and recycle this product through your recycling facility at its end of life.*
-



This symbol indicates the “Drive” position of the coupling lever. In this position the motor is engaged and the motor brakes are operational. You can drive the wheelchair.

- *Please note that for driving purposes both motors must always be engaged.*



This symbol indicates the “Push” position of the coupling lever. In this position the motor is disengaged and the motor brakes are not operational. The wheelchair can be pushed by an attendant and the wheels turn freely.

- *Please note that the control panel must be switched off.*
 - *Please also note the information provided in section "**Pushing the wheelchair in freewheel mode**" on page 38.*
-



This symbol indicates the position of an anchor point when using a lashing system during transport.



If the symbol appears on a bright yellow sticker, the anchoring point is suitable for fixation of the wheelchair in a vehicle for use as a vehicle seat.



This wheelchair may not be used as a vehicle seat!

- *This wheelchair does not satisfy the requirements of ISO 7176-19:2001 and may not under any circumstances be used as a vehicle seat or to transport the user in a vehicle.*
 - *Using a wheelchair that does not fulfill these criteria as a vehicle seat can lead to the most severe injuries and even death in the event of a traffic accident.*
-



If the power wheelchair is fitted with a table, it is imperative that it is removed and safely stowed when transporting the wheelchair in a vehicle!

1.3 Type classification and permissible use

This vehicle was designed for persons whose ability to walk is impaired, but who are still physically and mentally able to operate an electric vehicle. It has been classified according to EN 12184 as a **class B and C mobility product** (for indoor/outdoor and outdoor usage, depending on the configuration). It is therefore compact and agile enough for indoor areas, but also able to overcome many obstacles in outdoor areas.

You can find exact information on speed, turning radius, range, safe climbing ability, maximum obstacle height and permissible operating conditions in chapter "**Technical specifications**" on page **140**.

Please also pay attention to all safety information in chapter "**Safety notes**" starting from page **19**.

The vehicle was successfully tested according to German and international standards as to its safety. It was also tested successfully according to EN60529 IPX4 as to its resistance to spray water, and is therefore well suited for typical middle European weather conditions. When equipped with an appropriate lighting system, the vehicle is suitable for use on public roads.

1.4 Indications

The use of this mobility product is recommended for the following indications:

The inability or a greatly restricted ability to walk within the scope of the basic requirement to be able to move within one's own four walls. The need to leave the dwelling place in order to get some fresh air during a short walk or to reach those places generally to be found at close distance to the dwelling and where everyday business is carried out.

Provision of power wheelchairs for interior and exterior areas is advisable if the use of hand-operated wheelchairs is no longer possible on account of the disability, yet proper operation of an electromotive drive unit is still practicable.

Because of its larger turning radius, the type of steering mechanism used on these wheelchairs is better suited to outdoor use, and interior areas of adequate size. The wheelchair must be parked in a place that affords protection from weather and theft.

1.5 Usability

Only use a power wheelchair when it is in perfect working order. Otherwise, you might put yourself and others at risk.

The following list does not claim to be exhaustive. It is only intended to show some of the situations that could affect the usability of your power wheelchair.

In certain situations, you should immediately stop using your wheelchair. Other situations allow you to use the wheelchair to get to your dealer.

- You should immediately stop using your power wheelchair if its usability is restricted due to:
 - brake failure
- You should immediately contact an authorised Invacare® dealer if the usability of your power wheelchair is restricted due to:
 - the lighting system failing or being defective
 - reflectors falling off
 - worn thread or insufficient tyre pressure
 - damage to the armrests (e.g. torn armrest padding)
 - damage to the legrest hangers (e.g. missing or torn heel loops)
 - damage to the postural belt
 - damage to the joystick (joystick cannot be moved into the neutral position)
 - cables that are damaged, kinked, pinched or have come loose from the holder

- the wheelchair drifting when braking
- the wheelchair pulling to one side when moving
- unusual sounds developing or occurring

Or if you have the feeling that something is wrong with your wheelchair.

1.6 Warranty

The terms and conditions of the warranty are part of the general terms and conditions particular to the individual countries in which this product is sold.

1.7 Life expectancy

We estimate a life expectancy of five years for this product, provided it is used in strict accordance with the intended use as set out in this document and all maintenance and service requirements are met. The estimated life expectancy can be exceeded if the product is carefully used and properly maintained, and provided technical and scientific advances do not result in technical limitations. The life expectancy can also be considerably reduced by extreme or incorrect usage. The fact that we estimate a life expectancy for this product does not constitute an additional warranty.

2 Safety notes



READ WELL BEFORE OPERATION!

2.1 General safety notes



Danger of injury if mobility device is used in any other way than the purpose described in this manual!

- *Only ever use the mobility device in accordance with the instructions in this User's Manual (see chapter "Type classification and permissible use" on page 16).*
- *Pay strict attention to the safety information.*

Danger of injury if the mobility device is driven when ability to operate a vehicle is impaired by medication or alcohol!

- *Never drive the mobility device under the influence of medication or alcohol. If necessary, the mobility device must be operated by an attendant who is physically and mentally able.*

Danger of damage or injury if mobility device is accidentally set into motion!

- *Switch the mobility device off before you get in, get out or handle unwieldy objects.*
 - *When the drive is disengaged, the brake inside the drive is deactivated. For this reason, pushing the mobility device by an attendant is only recommended on flat surfaces, never on gradients. Never leave your mobility device on a gradient with its motors disengaged. Always re-engage the motors immediately after pushing the mobility device (see chapter "Pushing the wheelchair in freewheel mode" on page 38).*
-



Danger of injury if the mobility device is switched off while driving, for example by pressing the On/Off Button or disconnecting a cable, due to it coming to an abrupt, sharp stop!

- *If you have to brake in an emergency, simply release the joystick which will bring you to a halt. (refer to the joystick operating manual for more information).*

Danger of injury when transferring mobility device to a vehicle for transport with the occupant seated in it!

- *It is always better to transfer the mobility device to a vehicle without the occupant seated in it.*
- *If the mobility device needs to be loaded up a ramp together with its driver, ensure that the ramp does not exceed the maximum safe slope (see chapter "Technical specifications" from page 140).*
- *If the mobility device does need to be loaded using a ramp which exceeds the maximum safe slope (see chapter "Technical specifications" from page 140), then you must use a winch. An attendant can safely monitor and assist the loading process.*
- *As an alternative you can use a platform lift. Ensure that the total weight of the mobility device including the user does not exceed the maximum permissible weight for the platform lift or winch if you are using.*

Danger of injury if maximum permissible load is exceeded!

- *Do not exceed the maximum permissible load (see chapter "Technical specifications" from page 140).*
 - *The mobility device is only designed for use by a single occupant whose maximum weight does not exceed the maximum permissible load of the device. Never use the mobility device to transport more than one person.*
-



Danger of injury due to wrong lifting or dropping of heavy components!

- *When maintaining, servicing or lifting any part of your mobility device, take into account the weight of the individual components especially the batteries. Be sure at all times to adopt the correct lifting posture and ask for assistance if necessary.*

Danger of falling out of the mobility device.

- *Do not slide forward on the seat, do not lean forward between your knees, do not lean backwards out over the top of the backrest, for example to reach an object.*
- *If a posture belt is installed, it should be correctly adjusted and used each time you use the mobility device.*
- *When transferring to a different seat, position the mobility device as close as possible to the new seat.*

Danger of injury by moving parts!

- *Make sure that no injury is incurred by moving parts of the mobility device, like wheels or one of the Lifter Modules (if fitted), especially when children are around.*

Risk of injury from hot surfaces!

- *Do not leave the wheelchair in direct sunlight for prolonged periods. Metal parts and surfaces such as the seat and armrests can become very hot.*

Danger of fire or breaking down due to electric devices being connected!

- *Do not connect any electric devices to your mobility device that are not expressly certified by Invacare® for this purpose. Have all electrical installations done by your authorised Invacare® Dealer.*
-

2.2 Safety information with regard to care and maintenance



Danger of accident and loss of guarantee if maintenance is insufficient!

- *For reasons of safety and in order to avoid accidents which result from unnoticed wear, it is important that this electric mobility product undergoes an inspection once every year under normal operating conditions (see inspection plan contained in service instructions).*
 - *Under difficult operating conditions such as daily travel on steep slopes, or in the case of use in medical care cases with frequently changing wheelchair users, it would be expedient to carry out intermediate checks on the brakes, accessories and running gear.*
 - *If the mobility product is to be operated on public roads, the vehicle driver is responsible for ensuring that it is in an operationally reliable condition. Inadequate or neglected care and maintenance of the mobility product will result in a limitation of the manufacturer's liability.*
-

2.3 Safety information on electromagnetic interference

This electric vehicle was successfully tested in accordance with International standards as to its compliance with Electromagnetic Interference (EMI) regulations. However, electromagnetic fields, such as those generated by radio and television transmitters, and cellular phones can influence the functions of electric vehicles. Also, the electronics used in our vehicles can generate a low level of electromagnetic interference, which however will remain within the tolerance permitted by law. For these reasons we ask you to please observe the following precautions:



WARNING: Danger of malfunction due to electromagnetic interference!

- *Do not switch on or operate portable transceivers or communication devices (such as radio transceivers or cellular phones) when the vehicle is switched on.*
 - *Avoid getting near strong radio and television transmitters.*
 - *In case the vehicle should be set in motion unintentionally or the brakes are released, switch it off immediately.*
 - *Adding electrical accessories and other components or modifying the vehicle in any way can make it susceptible to electromagnetic interference. Keep in mind that there is no sure way to determine the effect such modifications will have on the overall immunity of the electronic system.*
 - *Report all occurrences of unintentional movement of the vehicle, or release of the electric brakes to the manufacturer.*
-

2.4 Safety information on driving and freewheel mode



Danger of injury if the wheelchair tips over!

- *Inclines and declines can only be travelled up to the maximum safe slope (see chapter "Technical specifications" from page 140).*
 - *Always return the backrest of your seat or the seat tilt to an upright position before ascending slopes. We recommend that you position the seat backrest and the seat tilt (if fitted) slightly to the rear before descending slopes.*
 - *Only ever drive downhill at a maximum of 2/3 of the top speed. Avoid abrupt braking or accelerating on gradients.*
 - *If at all possible, avoid driving on slippery surfaces (such as snow, gravel, ice etc.) where there is a danger of you losing control over the vehicle, especially on a gradient. If driving on such a surface is inevitable, then always drive slowly and with the utmost caution.*
 - *Never attempt to overcome an obstacle when on an uphill or downhill gradient.*
 - *Never attempt to drive up or down a flight of steps with your wheelchair.*
 - *When overcoming obstacles, always observe the maximum obstacle height (see chapter "Technical specifications" from page 140 and information about overcoming obstacles in chapter "Taking Obstacles" from page 34).*
 - *Avoid shifting your centre of gravity as well as abrupt joystick movements and changes of direction when the wheelchair is in motion.*
 - *Never use the wheelchair to transport more than one person.*
 - *Do not exceed the overall maximum permissible load or the maximum load per axle (see chapter "Technical specifications" on page 140).*
 - *Note that the wheelchair will brake or accelerate if you change the Driving Mode whilst the wheelchair is in motion.*
-



Danger of breaking down in adverse weather conditions, i.e. extreme cold, in an isolated area!

- *If you are a user with severely limited mobility, we advise that in the case of adverse weather conditions DO NOT attempt a journey without an accompanying attendant!*

Danger of injury if your foot slides off the footrest and gets caught underneath the wheelchair when it is in motion!

- *Make sure each time before you drive the wheelchair that your feet are squarely and securely in place on the footplates, and that both legrests are properly locked into place.*

Danger of injury if you collide with an obstacle when driving through narrow passages such as doorways and entrances!

- *Drive through narrow passages in the lowest driving mode and with due caution.*

If your power wheelchair has been fitted with angle-adjustable legrests, there is a danger of personal injury and damage to the wheelchair if you drive the wheelchair with the legrests raised!

- *To avoid unwanted displacement of the wheelchair centre of gravity to the front (especially when travelling downhill) and in order to avoid damage to the wheelchair, angle-adjustable legrests must always be lowered during normal travelling.*
-



CAUTION: Danger of tipping! Anti tip wheels (stabilisers) are only effective on firm ground! They sink in on soft ground such as grass, snow or mud if the mobility device rests itself on them. They lose their effect and the mobility device can tip over.

- *Only drive with extreme care on soft ground, especially during uphill and downhill journeys. In the process pay increased attention to the tip stability of the mobility device.*
-

2.5 Safety information regarding changes and modifications to the mobility device



CE marking of the wheelchair

The conformity assessment/ CE marking was carried out in accordance with Directive 93/42 EEC / MPG (Medical Devices Act) and only applies to the complete product.

The CE marking is invalidated if components or accessories are replaced or added that have not been approved for this product by Invacare.

In this case, the company that adds or replaces the components or accessories is responsible for the conformity assessment/ CE marking or for registering the wheelchair as a special design and for the relevant documentation.



CAUTION: Danger of injuries and damage to mobility aid due to unapproved components and accessory parts!

Seating systems, additions and accessory parts which have not been approved by Invacare® for use with this mobility aid can affect the tipping stability and increase tipping hazards!

- *Only ever use seating systems, additions and accessory parts which have been approved by Invacare® for this mobility aid!*

Seating systems which are not approved by Invacare® for use with this power wheelchair do not, under certain circumstances, comply with the valid standards and could increase the flammability and the risk of skin irritation.

- *Only use seating systems that have been approved by Invacare® for this power wheelchair.*

Electrical and electronic components which have not been approved by Invacare® for use with this mobility aid can cause fire hazards and lead to electromagnetic damage!

- *Only ever use electrical and electronic components which have been approved by Invacare® for this mobility aid!*

Batteries which have not been approved by Invacare® for use with this mobility aid can cause chemical burns!

- *Only ever use batteries which have been approved by Invacare® for this mobility aid!*
-



CAUTION: Risk of injuries, and damage to the wheelchair, if unapproved backrests are used!

A retrofitted backrest which is not approved by Invacare® for use with this power wheelchair may overload the backrest tube and thus increase the risk of injuries and of damage to the wheelchair.

- *Please contact your Invacare® specialist dealer who will perform risk analyses, calculations, stability checks etc. to ensure that the backrest can be used safely.*
-

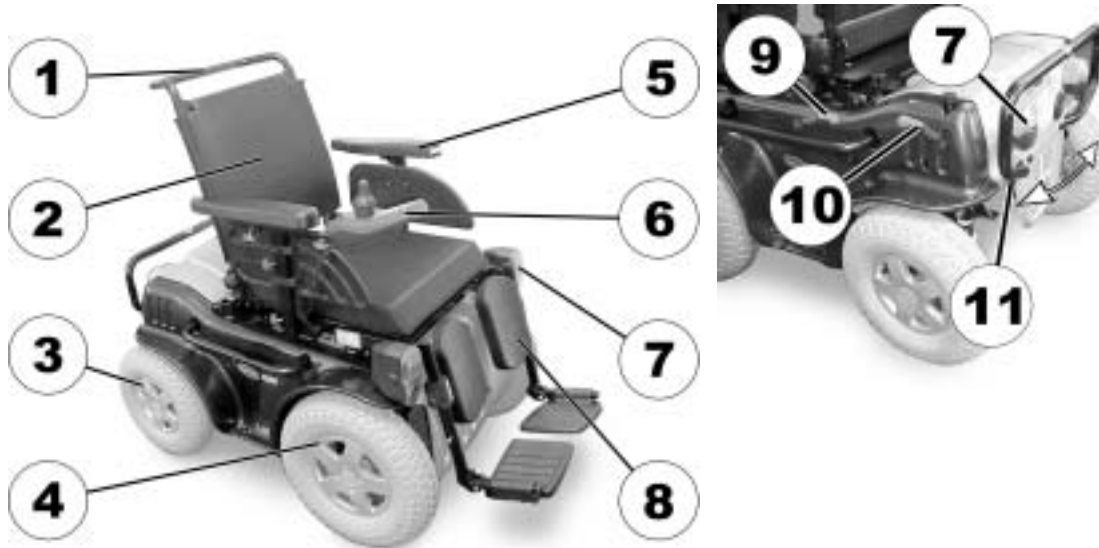
2.6 Safety information for using the wheelchair as a vehicle seat



Danger of injury in the event of the wheelchair being used as a vehicle seat.

- *Never use the wheelchair as a vehicle seat.*
 - *Only ever transport the wheelchair without occupants.*
 - *For transport the occupant should always be transferred to a normal vehicle seat.*
-

3 Key features



- 1) Sliding handle
- 2) Backrest
- 3) Steering wheels
- 4) Drive wheels
- 5) Armrest
- 6) Remote

- 7) Light/indicators/hazard indicators
- 8) Legrests
- 9) Parking brake
- 10) Disengaging lever (drive)
- 11) Disengaging lever (rear steering) (behind the faceplate)

4 Getting in and out of the wheelchair



Danger of injury if legrests break due to use as a stepping board!

- *Do not use the legrests as a stepping board when getting in and out of the wheelchair!*
-



Important information when side transferring in and out of the wheelchair

In order to side transfer it is necessary for the armrest to either be raised or removed completely depending on the model. A skirtguard can be installed as an option in connection with the parallel sliding armrest. This is attached in the same way as the standard armrest and must also be removed when transferring.

4.1 Remove the standard armrest in order to side transfer

Removing the side section

- Depending on the model, loosen the wing screw (1) or release handle (2).
- Pull the side section from the receptacle in an upward direction.



4.2 Raise the parallel sliding armrest / remove the skirtguard (optional)

Swivelling the armrest up

- Swivel the armrest up to access from the side.



Remove the clothes guard (option) for access

- Disengage the release handle (1).
- Pull the clothes guard out of the receptacle.



Getting into the wheelchair:

- Position your wheelchair as close as possible to your seat. This might have to be done by an attendant.
- Switch your wheelchair off.
- Apply the manual wheel lock of your wheelchair (if existing).
- Detach the skirt guard of your wheelchair or swivel it up.
- Now slide into the wheelchair.

**Getting out of the wheelchair:**

- Drive your wheelchair as close as possible to your seat.
- Switch your wheelchair off.
- Apply the manual wheel lock of your wheelchair (if existing).
- Detach the skirt guard of your wheelchair or swivel it up.
- Now slide onto your new seat.



NOTE:

If you do not have sufficient muscle strength, you should ask other persons for help. Use a sliding board, if possible.

5 Driving



NOTE

The maximum load capacity that is stated in the technical data only states that the system is designed for this mass in total. However, this does not mean that one can sit a person with this body weight in the wheelchair without restrictions. Attention must be paid to the body proportions, such as height, weight distribution, abdominal girth, leg and calf girth and seat depth. These factors have a strong influence on driving features such as tilt stability and traction. The permissible axle loads in particular must be adhered to (see chapter "**Technical specifications**" as from page **140**)! It may possibly be necessary to carry out adaptations to the seat system.

5.1 Before driving for the first time...

Before you take your first trip, you should familiarise yourself well with the operation of the vehicle and with all operating elements. Take your time to test all functions and driving modes.



NOTE:

If installed, make sure to properly adjust and use the postural belt each time you use the wheelchair.

Sitting Comfortably = Driving Safely

Before each trip, make sure that:

- **You are within easy reach of all operating controls.**
- **The battery charge is sufficient for the distance intended to be covered.**
- **The postural belt (if installed) is in perfect order.**

- The rear mirror (if installed) is adjusted so you can look behind at all times without having to bend forward or shift your seating position.

5.2 Taking Obstacles

5.2.1 Maximum obstacle height

You can find information about maximum obstacle heights in the chapter entitled "**Technical specifications**" from page 140.

5.2.2 Safety information when ascending obstacles



CAUTION: Danger of tipping!

- *Before climbing up an obstacle set your backrest upright !*
-



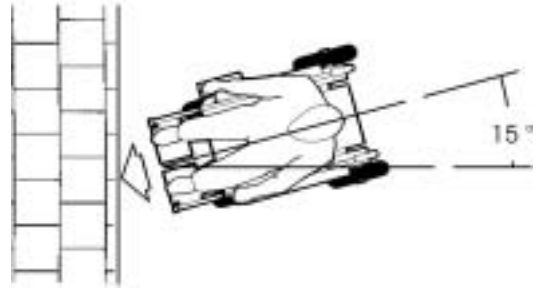
ATTENTION: Risk of falling out of the chair and damage to the power wheelchair such as broken castors!

- *Never approach obstacles that are higher than the maximum climbable obstacle height. For the maximum climbable obstacle height, see "Technical specifications" on page 140.*
 - *If unsure whether the kerb climb is possible or not, move away from the obstacle and if possible find another location.*
-

5.2.3 The correct way to overcome obstacles

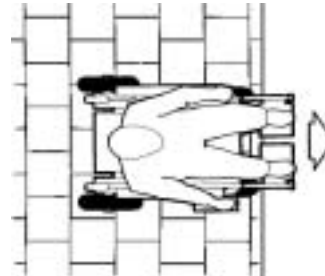
Climbing up

- Approach the obstacle or kerbstone at an angle of around 15°.
- Shortly before the front wheels touch the obstacle, slightly increase the speed and only reduce it once the rear wheels have climbed the obstacle.



Climbing down

- Approach the obstacle or kerbstone slowly at a right angle.
- Before the front wheels touch the obstacle, reduce speed and remain at this speed until the rear wheels have climbed down the obstacle.



5.3 Driving up and down gradients

For information concerning the maximum safe slope, please see chapter "**Technical specifications**" starting on page 140.



WARNING: Danger of tipping over!

- *Only ever drive downhill at a maximum of 2/3 of the top speed. Avoid sudden changes of direction or abrupt braking when driving on slopes.*
 - *Always return the backrest of your seat or the seat tilt (if adjustable seat tilt is available) to an upright position before ascending slopes. We recommend that you position the seat backrest or the seat tilt slightly to the rear before descending slopes.*
 - *Always lower the lifter (if fitted) to its lowest position before ascending or descending a slope.*
 - *Never attempt to ascend or descend a slope on slippery surfaces or where there is a danger of skidding (such as wet pavement, ice etc).*
 - *Avoid trying to get out of the vehicle on an incline or a gradient.*
 - *Always drive straight in the direction the road or path you are on goes, rather than attempting to zigzag.*
 - *Never attempt to turn around on an incline or a slope.*
-



CAUTION: Danger of tipping over, when driving down gradients! The centre of gravity of the power wheelchair is shifted forward when angle adjustable legrests are raised!

- *Before driving down gradients, always completely lower angle adjustable legrests (if installed)!*
-

5.4 Parking and stationary

When parking your vehicle or if your vehicle is stationary for a prolonged period:

- Switch the vehicle's power system off (ON-/OFF key).
- Activate your anti-theft lock, if existing.

5.4.1 Parking brake



Please note

In an emergency the parking brake can be used to slow the vehicle down.

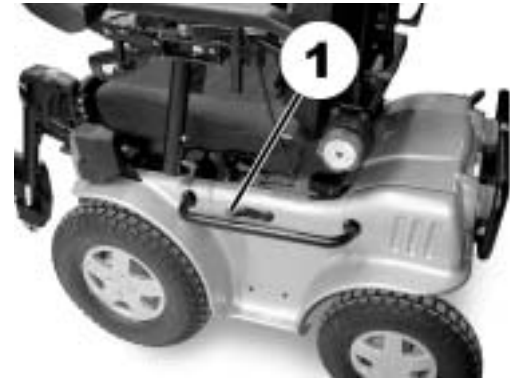
The brake lever is to be found on the left side.

Activating the parking brake

- Push the brake lever (1) forward.

Deactivating the parking brake

- Pull the brake lever (1) backward.



5.5 Use on public roads

If you wish to use your wheelchair on public roads and lighting is required by national legislation, then your wheelchair needs to be equipped with an appropriate lighting system.

Please contact your Invacare ® dealer if you have any questions.

6 Pushing the wheelchair in freewheel mode

In order to be able to push the powerchair, both the motor and the steering wheels must be disengaged

6.1 Disengaging Motors



Danger of the vehicle running away!

- *When the motors are disengaged (for push operation whilst freewheeling), the electromagnetic motor brakes are deactivated! When the vehicle is parked, the levers for engaging and disengaging the motors must without fail be locked firmly into the "DRIVE" position (electromagnetic motor brakes activated)!*
-



NOTE:

The motors may only be disengaged by an attendant, not by the user!

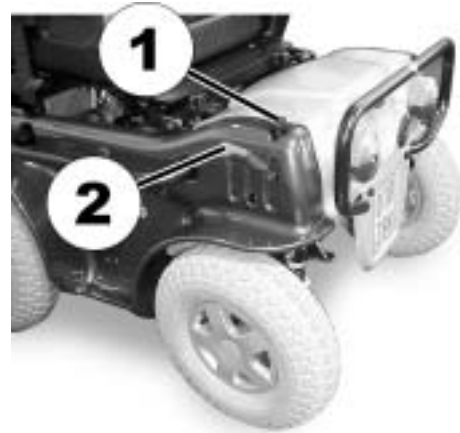
This ensures that the motors are only disengaged if an attendant is available to secure the wheelchair and prevent unintended rolling.

Disengaging the motors:

- Switch off the remote.
- Pull the release pin (1) upward.
- Push the release lever (2) forward.

Engaging the motors:

- Switch off the remote.
- Push the release lever backward.



6.2 Disengaging the steering wheels

The disengaging lever of the steering mechanism is to be found at the rear of the wheelchair underneath the plastic apron.



NOTE:

The motors may only be disengaged by an attendant, not by the user!

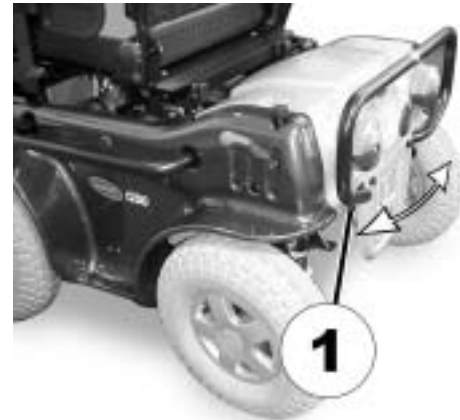
This ensures that the motors are only disengaged if an attendant is available to secure the wheelchair and prevent unintended rolling.

Disengaging the steering:

- Pull the release lever (1) to the rear.
- Turn the release lever 90° clockwise.

Engaging the steering:

- Turn the release lever (1) 90° counterclockwise.



7 Remotes

Your wheelchair may be equipped with one of several different remotes. For information on the different functions and how to operate a particular remote, please see its corresponding User Manual (enclosed).

8 Adjusting the wheelchair to the user's seating posture

This chapter discusses different ways to adapt the wheelchair to the seating posture of the user.



Electrical adjustment options

Please refer to the instruction manual for your remote for more information on operating electrical adjustment options.

8.1 Recaro® seats



Recaro® Seats

For more information on a Recaro® seat, please see the separate User Guide that comes with the Recaro® seat.

8.2 Adjusting the armrests and the control panel

8.2.1 Adapting the remote to the arm length of the user

8.2.1.1 Sliding armrest



Pre-requisites:

- 1x 3 mm Allen key
-

- Use the Allen key to loosen the screw (1).
- Set the remote to the desired length.
- Re-tighten the screw.



8.2.1.2 Transparent side section with boarding aid



Pre-requisites:

- 1x 3 mm Allen key

- Use the Allen key to loosen the screw (1).
- Set the remote to the desired length.
- Re-tighten the screw.



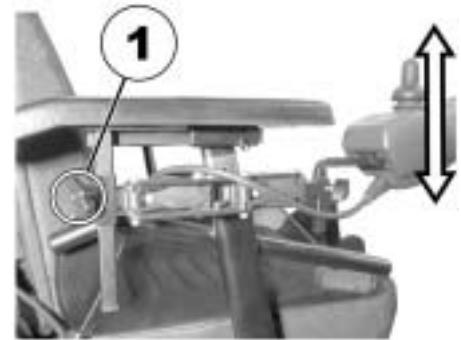
8.2.1.3 Standard side section

- Loosen the wing screw (1).
- Set the remote to the desired length.
- Re-tighten the wing screw.



8.2.2 Adjusting the height of the remote (lowerable remote holder)

- Loosen the wing screw (1).
- Set the remote to the desired height.
- Re-tighten the wing screw.



8.2.3 Adjusting the height of the armrests

8.2.3.1 Sliding armrest



Requirements:

- Allen key 2 mm
-

- Use the Allen key to loosen the screws (1) 2 mm on both sides of the spindle.
- Turn the spindle in a clockwise direction (A). The armrest is raised.
- Turn the spindle in an anti-clockwise direction (B). The armrest is lowered.
- Re-tighten the screws.



8.2.3.2 Transparent side section with boarding aid



Pre-requisites:

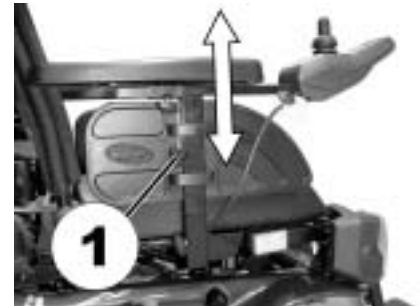
- 1x 5 mm Allen key

- Use the Allen key to loosen the screw (1).
- Set the armrest at the desired height.
- Re-tighten the screw.



8.2.3.3 Standard side section

- Loosen the wing screw (1).
- Set the remote to the desired height.
- Re-tighten the wing screw.



8.2.4 Adjusting the angle of the armpad on the parallel sliding armrests



Requirements:

- Allen key 4 mm
- Open-end spanner 10 mm

- Loosen the screw (1, on the inner side of the armrest), which allows adjustment of the angle of the armpad, while countering the nut (2, outer side of the armrest) with the open-end spanner, if necessary.



- Adjust the angle of the armpad.
- Re-tighten the screw (1), while countering the nut (2).



8.2.5 Adjusting the width of the armrests

The space between the side sections can be adjusted 2 cm on both sides (4 cm total).

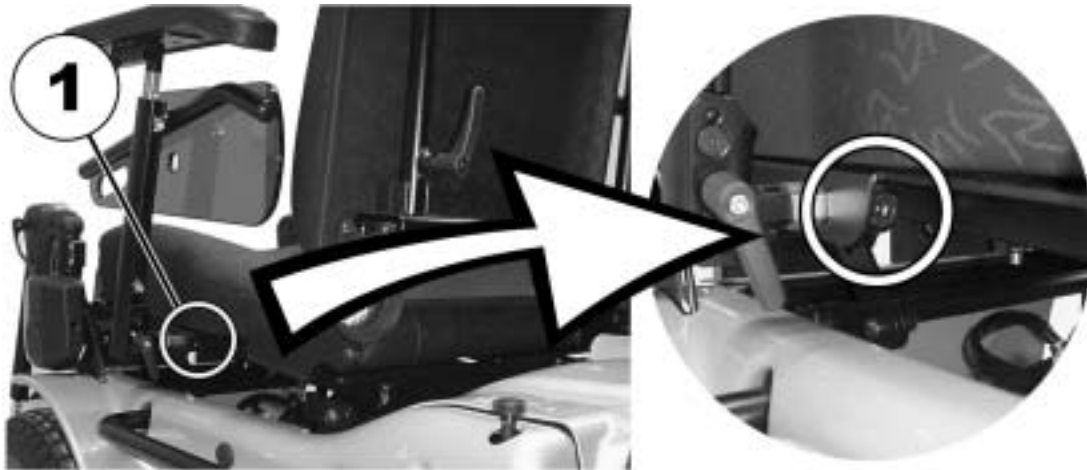


Requirements:

- Allen key 8 mm
-

Where to find the adjustment screws

The picture below shows the position of the screws that enable adjustment to the width of the armrests.



Doing the adjustment

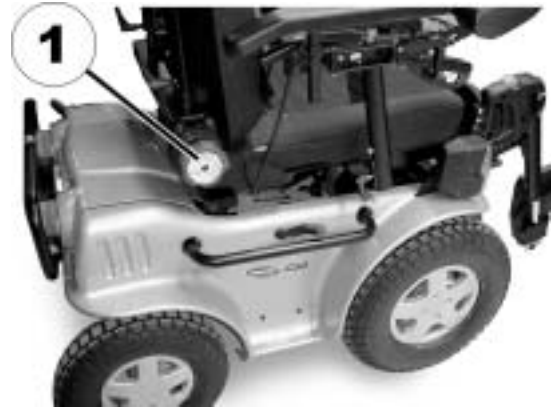
- Loosen the screw (1).
- Set the armrest in the desired position.
- Re-tighten the screw.
- Check that the armrest is fastened firmly.
- Repeat the procedure for the other armrest.



8.3 Adjusting the backrest

8.3.1 Flex and Contour seats

- Set the angle by turning the hand wheel (1).



8.4 Manually adjusting the seat tilt



Note!

The seat can be raised in the front to allow inspection of the components beneath it, such as batteries or the main fuse. However, maintenance work should not be carried out when the seat is in this position. We recommend removing the retaining screws at the rear of the seat frame and tipping the entire seat forward (service position).



Pre-requisites:

- 1x 6 mm Allen key
-
- Use the Allen key to loosen the screws (1) on both sides and remove.



The seat release button is to be found at the front underneath the edge of the seat (2).



WARNING: Damage to the wheelchair is possible!

- *When tipping the seat backward, make sure the fixation brackets of the backrest do not damage the side or rear cowlings!*
-

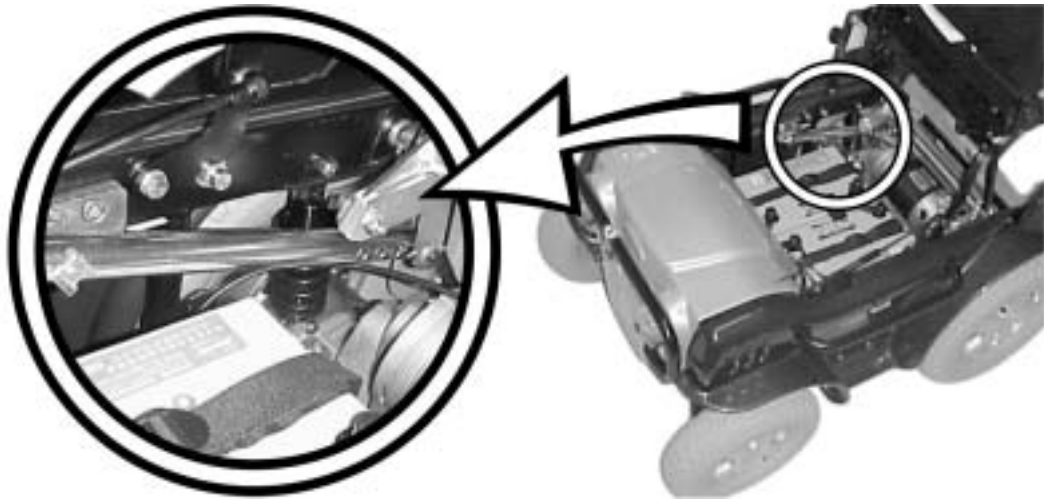
- Press the release button and tip the seat backward carefully. The seat locks into place in this position.



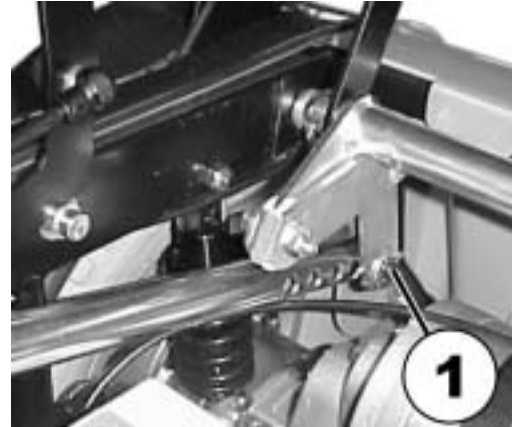
- Carefully pull the seat upward and to the front. Depending on the position of the tilt of the seat, this will remain in the position shown on the right or it will swivel further to the front.



The picture below shows the position of the rod that enables adjustment to the angle of the seat.



- Remove the SL locking device from the bolt using the flat screwdriver.
- Remove the bolt.
- Set the desired seat angle.
- Re-insert the bolt and secure using the SL locking device.



- Return the seat to the sitting position.
- Re-position the retaining screws (1) and tighten firmly.



- To lower the seat completely again, secure the seat with one hand to make sure it does not fall down and release the locking mechanism (1) with the other hand by pushing it back. The seat is now released and can be lowered carefully.



8.5 Postural belts

A postural belt is an option which can either be fixed to the wheelchair ex-works or can be retrofitted by your specialist dealer. If your wheelchair is fitted with a postural belt, your specialist dealer will have informed you about fitting and usage.

The postural belt is used to help the wheelchair user keep an optimum sitting position. Correct use of the belt assists the user in sitting securely, comfortably and well-positioned in the wheelchair, especially for such users who do not have such a good sense of balance while sitting.



NOTE:

We recommend using the postural belt whenever the wheelchair is used. The belt should be tight enough to ensure that you are sitting comfortably and that your body is in the correct sitting position.

8.5.1 Types of postural belts

Your wheelchair can be fitted with the following postural belt types ex-works. If your wheelchair has been fitted with a different belt to those listed below, please ensure that you have received the manufacturer's documentation with regard to correct fitting and use.

Belt with metal buckle, adjustable one side

Belt can only be adjusted on one side which can result in the buckle not sitting centrally.



Belt with metal buckle, adjustable both sides

Belt can be adjusted on both sides. This means that the buckle can be centrally positioned.



8.5.2 Adjusting the postural belt correctly

- Ensure that you are sitting correctly, which means that you are sitting right at the back of the seat, your pelvis is positioned erect and as symmetrically as possible, not to the front, to the side or at one edge of the seat.
- Position the postural belt so that your hipbones can be easily felt above the belt.
- Adjust the belt length using one of the adjustment aids described above. The belt should be adjusted so that you can fit a flat hand between the belt and your body.
- The buckle should be positioned as centrally as possible. In doing so, please carry out adjustments on both sides as much as possible.
- Please check your belt every week to ensure that it is still in good working condition; to ensure it has no damage or wear, and that it is fixed properly to the wheelchair. If the belt is only fastened with a bolted connection, ensure that the connection has not loosened or undone. You can find more information about maintenance work on belts in the service manual, which is available from Invacare®.

8.6 Adjusting and removing the tray



CAUTION: Injury hazard or material damage if a power wheelchair which is fitted with a table is transported in a vehicle!

- *If a table is fitted, always remove it before transporting the wheelchair.*



8.6.1 Laterally adjusting the tray

- Loosen the wing-screw (1).
- Adjust the tray towards the left or right.
- Re-tighten wing-screw.



8.6.2 Adjusting the depth of the tray / removing the tray

- Loosen the wing-screw (1).
- Adjust the table to the desired depth (or remove it entirely).
- Re-tighten the screw.



8.6.3 Swinging the tray away to the side



CAUTION! Risk of injury! When the tray is raised it does not lock in place in this position!

- *Do not tilt the tray up and leave it leaning in this position.*
 - *Never attempt to drive with the tray tilted up.*
 - *Always lower the tray in a controlled manner.*
-

The tray can be swivelled upwards and pushed to the side as illustrated to enable getting on and off.



8.7 Using the KLICKfix adapter

Your wheelchair can be fitted with the mini-adapter from the Rixen + Kaul KLICKfix system. To this you can attach various accessories such as the cellphone case supplied by Invacare, which you can use to transport your cellphone, sports glasses etc.



CAUTION! Risk posed by unsecured accessories! Accessories can fall off and get lost if they are not properly secured.

- *Check that the accessory is correctly locked in and seated securely every time you use the wheelchair.*
-



CAUTION! Risk of breakage due to excessive load! The KLICKfix adapter can break if too great a load is applied.

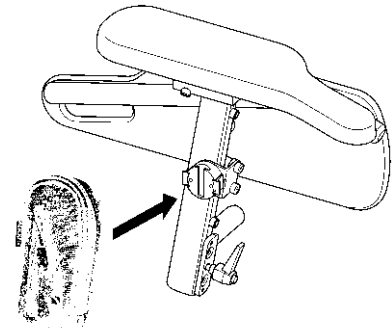
- *The maximum permitted load on the KLICKfix adapter is 1 kg.*
-

Securing the accessory:

- Push the accessory into the KLICKfix adapter.
The accessory locks in securely.

Removing the accessory:

- Press the red button and remove the accessory.



The adapter can turn in 90° steps, allowing you to attach an accessory from any of four different directions. Please refer to the installation instructions which are available from your Invacare® dealer or directly from Invacare®.

More information on the KLICKfix system is available at <http://www.klickfix.com>.

9 Adjusting the footrests and the legrests

9.1 Firmly mounted legrests

9.1.1 Standard legrests

9.1.1.1 Setting the calf plate (standard and electrically adjustable legrests)



Requirements:

- Phillips screwdriver
-

- Loosen the screws (1).
- Move the calf plate to the desired position.
- Re-tighten the screws.



9.1.1.2 Adjusting the length of the legrests (Standard and electrically adjustable legrests)



Requirements:

- Open-end spanner 10 mm
-

- Loosen the screw (1).
- Set the foot plate at the desired height.
- Re-tighten the screw.



9.1.2 Manually adjustable legrests

9.1.2.1 Adjusting the angle

Upward

- Pull the legrest upward until the desired angle has been achieved. The legrest locks in place automatically.



Downward

- Press the release lever (1) downward. The legrest can now be moved downward.



9.1.2.2 Adjusting the calf support (manually adjustable legrests)

The calf support on manually adjustable legrests is held by a clamp, and has two possible height settings



Requirements:

- Open-end spanner 13 mm
 - Allen key 6 mm
-

Upward

- Remove the plastic cap from the nut (lower side of the calf plate, not seen in the picture).
- Use the open-ended spanner to safeguard the nut against rotating.
- Use the Allen key to loosen the screw (1) and remove.
- Set the calf plate at the desired height.
- Re-insert the screw, fit and tighten the nut.



9.1.2.3 Adjusting the length of the legrest (manually adjustable legrests)

The lower leg support tube is held by a clamp.



Requirements:

- Open-end spanner 13 mm
-
- Use the open-ended spanner to loosen the screw (1).
 - Set the foot plate at the desired height.
 - Re-tighten the screw.



9.1.3 Electrically adjustable legrests

9.1.3.1 Adjusting the angle

Please consult the user manual for your remote for information about electrical adjustment.

9.1.3.2 Setting the calf plate (standard and electrically adjustable legrests)



Requirements:

- Phillips screwdriver
-

- Loosen the screws (1).
- Move the calf plate to the desired position.
- Re-tighten the screws.



9.1.3.3 Adjusting the length of the legrests (Standard and electrically adjustable legrests)



Requirements:

- Open-end spanner 10 mm
-

- Loosen the screw (1).
- Set the foot plate at the desired height.
- Re-tighten the screw.



9.2 Lowerable legrests

9.2.1 Standard footrest with pre-set angle

9.2.1.1 Swivelling the footrest outward and/or removing

The small unlocking button is located on the upper section of the footrest. When the footrest is unlocked, it can be swivelled inward or outward when getting into the wheelchair as well as being removed completely.

- Press the unlocking button (1) and swivel the footrest outward.
- Remove the footrest in an upward direction.



9.2.1.2 Setting the angle



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-



Pre-requisites:

- 6 mm Allen key
 - Hammer
 - Metal pin, 3 mm in diameter
-

- Loosen the screw (1) using the Allen key.
- If the footrest cannot be moved after loosening the screw, position a metal pin in the designated borehole (2) and use a hammer to knock on this lightly. The clamping mechanism in the interior of the footrest will be released by this. Repeat the procedure from the other side of the footrest if necessary.



- Loosen the screw (1) using the Allen key.
- Set the desired angle.
- Re-tighten the screw.



9.2.1.3 Setting the end stop of the footrest



Pre-requisites:

- 1x 6 mm Allen key
 - 1x 10 mm open-ended spanner
-

The end position of the footrest is determined by means of a rubber stop (1).



The rubber stop can be screwed in or out (A) or pushed up or down (B).



- Use the Allen key to loosen the screw (1) and swivel the footrest upward in order to access the rubber stop.



- Use the open-ended spanner to loosen the counternut (1).



- Move the rubber stop to the desired position
- Re-tighten the counternut



- Move the footrest to the desired position.
- Re-tighten the screw.



9.2.1.4 Adjusting the length of the footrest



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the spanner to loosen the screw (1).
- Adjust to the desired length.
- Re-tighten the screw.



9.2.2 Manually height adjustable legrest 90° - 0°

9.2.2.1 Swivelling the legrest outward and/or removing

The small unlocking button is located on the upper section of the legrest. When the legrest is unlocked, it can be swivelled inward or outward when getting into wheelchair as well as being removed completely.

- Press the unlocking button (1) and swivel the legrest outward.
- Remove the legrest in an upward direction.



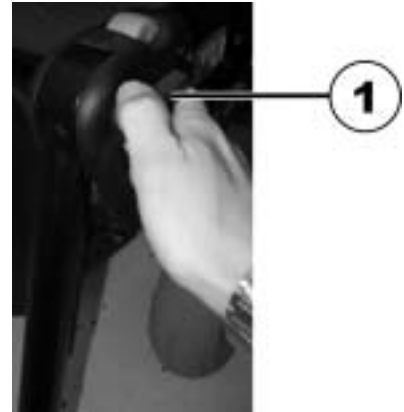
9.2.2.2 Setting the angle



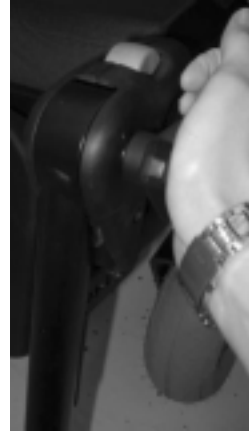
PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-

- Loosen the locking knob (1) counter-clockwise at least one turn.



- Hit the knob to release the locking mechanism.



- Set the desired angle.



- Turn the knob clockwise to tighten it.



9.2.2.3 Setting the end stop of the legrest



Pre-requisites:

- 1x 10 mm open-ended spanner
-

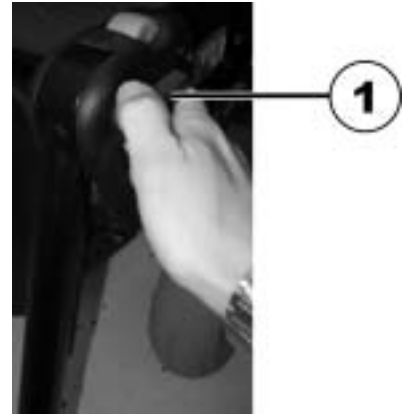
The end position of the legrest is determined by means of a rubber stop (A).



The rubber stop can be screwed in or out (A) or pushed up or down (B).



- Loosen the locking knob (1) counter-clockwise at least one turn.



- Hit the knob to release the locking mechanism.



- Swivel the legrest upward in order to access the rubber stop.



- Use the open-ended spanner to loosen the conternut (1).



- Move the rubber stop to the desired position
- Re-tighten the counternut



- Move the legrest to the desired position.
- Re-tighten the locking knob.



9.2.2.4 Adjusting the length of the legrest



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the spanner to loosen the screw (1).
- Adjust to the desired length.
- Re-tighten the screw.



9.2.2.5 Adjusting the depth of the calf plate

The depth of the calf plate can be adjusted via the holding plate. The holding plate hole combinations allow 5 different depth settings.



Pre-requisites:

- 1x 10 mm open-ended spanner
-
- Use the open-ended wrench to loosen the nut (1) and remove.
 - Adjust to the desired depth. Please observe that the round holes are intended for the calf plate retaining screw and the oblong holes for the aglet without thread.
 - Screw the nut back on and tighten.



9.2.2.6 Adjusting the height of the calf pad



Pre-requisites:

- 1x 4 mm Allen key
-

- Use the Allen key to loosen the screws (1).
- Adjust to the desired position.
- Re-tighten the screws.



9.2.2.7 Unlocking and swivelling the calf plate backward when alighting

- Press the calf plate straight down.



- Unlock the legrest and swivel outward. The calf plate swivels backward on its own.



- Lift leg over the heel strap and place on the ground.



9.2.2.8 Adjusting the angle adjustable foot plate



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the Allen key to loosen both set screws on the foot plate.
- Adjust to the desired angle.
- Re-tighten the screws.



9.2.2.9 Adjusting the angle and depth adjustable foot plate



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the Allen key to loosen the set screw on the foot plate (1).
- Adjust the foot plate to the desired angle or depth.
- Re-tighten the screw.



9.2.3 Manually height adjustable legrest 80° - 0° with ergonomic length adjustment

9.2.3.1 Swivelling the legrest outward and/or removing

The small unlocking button is located on the upper section of the legrest. When the legrest is unlocked, it can be swivelled inward or outward when getting into wheelchair as well as being removed completely.

- Press the unlocking button(1) and swivel the legrest outward.
- Remove the legrest in an upward direction.



9.2.3.2 Setting the angle



PLEASE NOTE: Danger of crushing!

- *Do not reach inside the swivelling range of the legrest!*
-



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-

- Raising: Pull the legrest upward until the desired angle has been achieved.



- Lowering: Keep the legrest in the foot plate area, pull the lateral adjusting lever (1) and lower the legrest slowly.



9.2.3.3 Adjusting the length of the legrest



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the spanner to loosen the screw (1).
- Adjust to the desired length.
- Re-tighten the screw.



9.2.3.4 Adjusting the depth of the calf plate

The depth of the calf plate can be adjusted via the holding plate. The holding plate hole combinations allow 5 different depth settings.



Pre-requisites:

- 1x 10 mm open-ended spanner
-
- Use the open-ended wrench to loosen the nut (1) and remove.
 - Adjust to the desired depth. Please observe that the round holes are intended for the calf plate retaining screw and the oblong holes for the aglet without thread.
 - Screw the nut back on and tighten.



9.2.3.5 Adjusting the height of the calf pad



Pre-requisites:

- 1x 4 mm Allen key
-

- Use the Allen key to loosen the screws (1).
- Adjust to the desired position.
- Re-tighten the screws.



9.2.3.6 Unlocking and swivelling the calf plate backward when alighting

- Press the calf plate straight down.



- Unlock the legrest and swivel outward. The calf plate swivels backward on its own.



- Lift leg over the heel strap and place on the ground.



9.2.3.7 Adjusting the angle adjustable foot plate



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the Allen key to loosen both set screws on the foot plate.
- Adjust to the desired angle.
- Re-tighten the screws.



9.2.3.8 Adjusting the angle and depth adjustable foot plate



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the Allen key to loosen the set screw on the foot plate (1).
- Adjust the foot plate to the desired angle or depth.
- Re-tighten the screw.



9.2.4 Electrically height adjustable legrest 80° - 0° with ergonomic length adjustment

9.2.4.1 Swivelling the legrest outward and/or removing

The small unlocking button is located on the upper section of the legrest. When the legrest is unlocked, it can be swivelled inward or outward when getting into wheelchair as well as being removed completely.

- Press the unlocking button (1) and swivel the legrest outward.
- Remove the legrest in an upward direction.



9.2.4.2 Setting the angle



PLEASE NOTE: Danger of crushing!

- *Do not reach inside the swivelling range of the legrest!*
-



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-

The electrically height adjustable legrest is operated via the remote. Please refer to the remote manual for more information.

9.2.4.3 Adjusting the length of the legrest



PLEASE NOTE: Danger of injury due to incorrect adjustment of the footrests and legrests.

- *Before and during every journey it is imperative to ensure that the legrests contact neither the castor wheels nor the ground!*
-



Pre-requisites:

- 1x 10 mm open-ended spanner
-

- Use the spanner to loosen the screw (1).
- Adjust to the desired length.
- Re-tighten the screw.



9.2.4.4 Adjusting the depth of the calf plate

The depth of the calf plate can be adjusted via the holding plate. The holding plate hole combinations allow 5 different depth settings.



Pre-requisites:

- 1x 10 mm open-ended spanner
-

- Use the open-ended wrench to loosen the nut (1) and remove.
- Adjust to the desired depth. Please observe that the round holes are intended for the calf plate retaining screw and the oblong holes for the aglet without thread.
- Screw the nut back on and tighten.



9.2.4.5 Adjusting the height of the calf pad



Pre-requisites:

- 1x 4 mm Allen key
-

- Use the Allen key to loosen the screws (1).
- Adjust to the desired position.
- Re-tighten the screws.



9.2.4.6 Unlocking and swivelling the calf plate backward when alighting

- Press the calf plate straight down.



- Unlock the legrest and swivel outward. The calf plate swivels backward on its own.



- Lift leg over the heel strap and place on the ground.



9.2.4.7 Adjusting the angle adjustable foot plate



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the Allen key to loosen both set screws on the foot plate.
- Adjust to the desired angle.
- Re-tighten the screws.



9.2.4.8 Adjusting the angle and depth adjustable foot plate



Pre-requisites:

- 1x 5 mm Allen key
-

- Use the Allen key to loosen the set screw on the foot plate (1).
- Adjust the foot plate to the desired angle or depth.
- Re-tighten the screw.



10 Electrical system

10.1 Electronics protection system

The vehicle drive electronics is fitted with an overload protection.

If the drive is severely overloaded over a long period (e.g. during steep climbs) and, above all, at simultaneous high external temperatures, the electronic system can overheat. In this case, the vehicle performance is gradually reduced until it comes to a standstill. The status display shows a corresponding blink code (please refer to the user manual for your remote). If you switch the drive electronics off and then on again, the error message is deleted and the electronics can be switched on again. It can however take up to five minutes until the electronics has cooled down enough for the drives to apply their full performance.

If the drive is blocked due to an insurmountable obstacle, for example a kerb or similar which is too high, and the driver attempts to run the drive for more than 20 seconds against this obstacle, the electronic system switches the drives off to avoid damage. The status display shows a corresponding flash code (please refer to the user manual for your remote). If you switch the drive electronics off and then on again, the error message is deleted and the electronics can be switched on again.

10.1.1 The main fuse

The entire wheelchair electric system is protected against overloading by means of a main fuse. The main fuse is to be found on the connecting cable between the batteries.



NOTE

A defective main fuse may be replaced only after checking the entire electric system. An Invacare® specialised dealer must perform the replacement. You can find information on the fuse type in chapter "**Technical specifications**" starting on page **140**.

10.2 Batteries

Power is supplied by two 12 V batteries. The batteries are maintenance-free and only need regular charging.

In the following, you find information on how to charge, handle, transport, store, maintain, and use batteries.

10.2.1 Charging the batteries

10.2.1.1 General information on charging

New batteries should always be fully charged once before their first use. New batteries will be at their full capacity after having run through approx. 10 - 20 charging cycles (break-in period). This break-in period is necessary to fully activate the battery for maximum performance and longevity. Thus, range and running time of your mobility device could initially increase with use.

Gel/AGM lead acid batteries do not have a memory effect as NiCd batteries.

10.2.1.2 General instructions on charging

Follow the instructions listed below to ensure safe use and longevity of the batteries:

- Charge 12 hours prior to initial usage.
- We recommend charging the batteries daily after every discharge even after partly discharge, as well as each night over night. Depending on the level of discharge, it can take up to 12 hours until the batteries are fully charged again.
- When the battery indicator reached the red LED range, charge the batteries for 16 hours minimum, neglecting the charge complete display!
- Try to provide a 24 hour charge once a week to make sure that both batteries are fully charged.
- Do not cycle your batteries at a low state of charge without regularly recharging them fully.
- Do not charge your batteries under extreme temperatures. High temperatures above 30 °C are not recommended for charging as well as low temperatures below 10 °C.
- Use only charging devices in Class 2. This class of chargers may be left unattended during charging. All charging devices which are supplied by Invacare® comply with these requirements.
- You cannot overcharge the batteries when using the charger supplied with your vehicle, or a charger that has been approved by Invacare®.
- Protect your charger from sources of heat such as heaters and direct sunlight. If the battery charger overheats, charging current will be reduced and the charging process delayed.

10.2.1.3 How to charge the batteries

Please see the instruction manuals for your remote and battery charger for the position of the charging socket and further information about charging the batteries.



WARNING!**Risk of explosion and destruction of batteries if the wrong battery charger is used!**

- *Only ever use the battery charger supplied with your vehicle, or a charger that has been approved by Invacare®.*

Risk of electric shock and damage to the battery charger if it gets wet!

- *Protect the battery charger from water.*
- *Always charge in a dry environment.*

Risk of short circuit and electric shock if the battery charger has been damaged!

- *Do not use the battery charger if it has been dropped or damaged.*

Risk of electric shock and damage to the batteries!

- *NEVER attempt to recharge the batteries by attaching cables directly to the battery terminals.*

Risk of fire and electric shock if a damaged extension cable is used!

- *Only ever use an extension cable if it is absolutely necessary. In case you must use one, make sure it is in good condition.*

Risk of injury if using the wheelchair during charging!

- *DO NOT attempt to recharge the batteries and operate the wheelchair at the same time.*
 - *DO NOT sit in the wheelchair while charging the batteries.*
-

- Switch off the mobility device.
- Connect the battery charger to the charger socket.
- Connect the battery charger to the power supply.

10.2.1.4 How to disconnect the batteries after charging

- Once charging is complete, first disconnect the battery charger from the power supply, then disconnect the plug from the remote.

10.2.2 Storage and Maintenance

Follow the instructions listed below to ensure safe use and longevity of the batteries:

- Always store the batteries fully charged.
- Do not leave the batteries in a low state of charge for an extended length of time. Charge a discharged battery as soon as possible.
- In case your mobility device is not used for a longer period of time (that is more than two weeks), the batteries must be charged at least once a month to maintain a full charge and always be charged before use.
- Avoid hot and cold extremes when storing. We recommend to store batteries at a temperature of 15 °C.
- Gel and AGM batteries are maintenance-free. Any performance issues should be handled by a properly trained mobility device technician.

10.2.3 Instructions on using the batteries



CAUTION! Risk of damaging the batteries.

- *Avoid ultra-deep discharges and never drain your batteries completely.*
-

- Pay attention to the Battery Charge Indicator! Charge the batteries when the Battery Charge Indicator shows that battery charge is low.

How fast the batteries discharge depends on many circumstances, such as ambient temperature, condition of the surface of the road, tyre pressure, weight of the driver, way of driving and utilisation of lighting.

- Try to charge the batteries always before you reach the red LED range.

The last 3 LED (two red and one orange) mean a remaining capacity of about 15 %.

- Driving with blinking red LED's means an extreme stress for the battery and should be avoided under normal circumstances.
- When only one red LED is blinking, the Battery Safe feature is enabled. From this time, speed and acceleration is reduced drastically. It will allow you to move the mobility device slowly out of a dangerous situation before the electronic finally cuts off. This is deep discharging and should be avoided.
- Be aware that for temperatures below 20 °C, the nominal battery capacity starts to decline. For example, at -10 °C the capacity is reduced to about 50 % of the nominal battery capacity.
- To avoid damaging the batteries, never allow them to be fully discharged. Do not drive on heavily discharged batteries if it is not absolutely necessary, as this will strain the batteries unduly and shorten their life expectancy.
- The earlier you recharge the batteries, the longer they live.
- The depth of discharge affects the cycle life. The harder a battery has to work, the shorter is its life expectancy.

Examples:

- One deep discharge stresses the same as 6 normal cycles (green /orange display off).
- The battery life is about 300 cycles at 80% discharge (first 7 LED off), or about 3000 cycles at 10% discharge (one LED off).



NOTE:

The number of LED can vary depending on the remote type.

- Under normal operation, once a month the battery should be discharged until all green and orange LED are off. This should be done within one day. A 16 hour charge afterwards is necessary as reconditioning.

10.2.4 Transporting batteries

The batteries supplied with your electric vehicle are not hazardous goods. This classification is based on the German GGVS Hazardous Goods Road Transport Ordinances, and the IATA/DGR Hazardous Goods Rail Transport / Air Transport Ordinances. Batteries may be transported without restrictions, whether by road, rail or by air. Individual transport companies have, however, guidelines which can possibly restrict or forbid certain transport procedures. Please ask the transport company regarding each individual case.

10.2.5 Handling batteries

10.2.5.1 General instructions on handling the batteries

- Never mix and match different battery manufactures or technologies, or use batteries that do not have similar date codes.
- Never mix gel with AGM batteries.
- Always have your batteries installed by a properly trained mobility device technician. They have the necessary training and tools to do the job safely and correctly.

10.2.5.2 How to handle damaged batteries correctly



WARNING:**Corrosion and burns from acid leakage if batteries are damaged!**

- *Remove clothes that have been soiled by acid immediately.*

After contact with skin:

- *Immediately wash affected area with lots of water.*

After contact with eyes:

- *Immediately rinse eyes under running water for several minutes; consult a physician.*
-

- Always wear safety goggles and appropriate safety clothing when handling damaged batteries.
- Place damaged batteries in an acid-resistant receptacle immediately after removing them.
- Only ever transport damaged batteries in an appropriate acid-resistant receptacle.
- Wash all objects that have come into contact with acid with lots of water.

Disposing of dead or damaged batteries correctly

Dead or damaged batteries can be given back to your dealer or directly to Invacare®.

10.2.5.3 Tilting the seating system forward



Note!

The seat can be raised in the front to allow inspection of the components beneath it, such as batteries or the main fuse. However, maintenance work should not be carried out when the seat is in this position. We recommend removing the retaining screws at the rear of the seat frame and tipping the entire seat forward (service position).



Pre-requisites:

- 11 mm spanner
 - 6 mm Allen key
-

- Use the Allen key to loosen the screws (1) on both sides and remove.



The seat release button is to be found at the front underneath the edge of the seat (2).



WARNING: Damage to the wheelchair is possible!

- *When tipping the seat backward, make sure the fixation brackets of the backrest do not damage the side or rear cowlings!*
-

- Press the release button and tip the seat backward carefully. The seat locks into place in this position.



- Carefully pull the seat upward and to the front. Depending on the position of the tilt of the seat, this will remain in the position shown on the right or it will swivel further to the front.



10.2.5.4 Removing the batteries

- Remove the insulation shoe on the cable bridge with the fuse (1) at the negative terminal (blue cable).
 - Loosen battery clamp with spanner and remove screw.
 - Remove the insulation shoe on the cable bridge at the positive terminal (red cable).
 - Loosen battery clamp with spanner and remove cable.
-
- Remove the blue battery cable insulation shoe (2) on the negative terminal.
 - Loosen battery clamp and remove cable.
 - Remove the red battery cable insulation shoe (3) on the positive terminal.
 - Loosen battery clamp and remove cable.



- Open the battery fixing strap.
- Remove both batteries from the wheelchair frame using the carrying straps.



10.2.5.5 Connecting the New Batteries

- Place the batteries in the wheelchair frames with the battery terminals facing one another.
- Connect the cables to the batteries in the reverse order to that detailed in section "**Removing the batteries**" on page 121.



- Thread the fixing strap in as shown in the photo.
- Secure the batteries by tightening the fixing straps.



- Return the seat to the sitting position.
- Re-position the retaining screws (1) and tighten firmly.



- To lower the seat completely again, secure the seat with one hand to make sure it does not fall down and release the locking mechanism (1) with the other hand by pushing it back. The seat is now released and can be lowered carefully.



11 Care and maintenance

**NOTE:**

Have your vehicle checked once a year by an authorised Invacare® dealer in order to maintain its driving safety and roadworthiness.

Cleaning the vehicle

When cleaning the vehicle, pay attention to the following points:

- Only use a damp cloth and gentle detergent.
- Do not use any abrasive or scouring liquids.
- Do not subject the electronic components to any direct contact with water.
- Do not use high-pressure cleaning devices.

Disinfection

Spray or wipe disinfection using a tested and recognised product is permitted. A list of the current permitted disinfectants is available from the Robert Koch Institute at <http://www.rki.de>.

Maintenance Jobs	When Delivered	Weekly	Monthly
Seat and backrest padding:			
- Check for perfect condition.			✓
Side part and armrest:			
- Are all fastening elements installed?	✓	✓	
- Can armrests / side parts be removed and installed without too much physical effort?		✓	
- Are armrests secured in their positions?		✓	
Legrests:			
- Do legrests lock into place without any problem? (Only applies to detachable legrests)			✓
- Do the different adjustment functions work without any problem?			✓
Tyres:			
- Have tyres checked for specified air pressure (2,5 bar).	✓	✓	
Front wheel forks / Front wheels			
- Front wheels must be running smoothly.		✓	
- Check fork bearing for firm seat (torque 15 Nm +/- 1,5 Nm).			✓
Rear wheels:			
- Test wheel for firm seat on the axle drive shaft.			✓
- Rear wheels must turn without wobbling			✓

Maintenance Jobs	When Delivered	Weekly	Monthly
Electronics / Electrical System:			
- Check all plug connections for condition and firm seat.			✓
- Have all batteries been fully charged before the daily operation?	Before every trip		
- Are all holders, screws firmly fixed, tight and safe?			✓
- Are all electric bulbs of the lighting system (if applicable) in working order?	Before each trip		
Cleaning:			
- Clean all parts carefully.	When necessary		

12 Repair instructions

The following are instructions on repairs that can be performed by the user. For the specifications of spare parts please see "**Technical specifications**" on page **140**, or consult the Service Manual, available from Invacare® (in this connection please see the addresses and phone numbers in section "**How can you get in touch with Invacare®?**" on page **3**). In case you require assistance, please contact your Invacare® Dealer.

12.1 Repairing a flat tyre



WARNING: Danger of damage or injury if the vehicle is accidentally set into motion during repairs!

- *Switch the power off (ON/OFF Button)!*
 - *Engage the motors!*
 - *Secure the vehicle against rolling away by placing wedges under the wheels!*
-

12.1.1 Repairing a flat tyre (type 4.00-8" pneumatic tyres)



Pre-requisites:

- Torx TX-40 spanner
 - 5 mm Allen key
 - Repair kit for tyres with inner tube **or** a new hose.
 - Talcum powder
-

Removing the wheel

- Jack up the vehicle (place a piece of wood under the frame).
- Use the Torx spanner to remove the 4 countersunk screws (1).
- Remove the wheel from the wheel hub.



PLEASE NOTE

Assembly is carried out in the reverse order. Please ensure that the wheel is re-fitted on the same side and in the same running direction it was in before removal.

Repairing a flat tyre

- Unscrew the valve cap.
- Let the air out of the tyre completely by pressing the pin in the centre of the valve in.
- Use the Allen key to remove the 5 cheese-head screws (rear side of the wheel, 2).
- Remove the rim halves from the shoe.
- Remove the hose from the contact surface.
- Repair the hose and re-fit or fit a new hose.



PLEASE NOTE

If it is intended to repair and re-fit the old hose and this has become wet during repair work, it can simplify fitting if some talcum powder is applied to the hose.

- Re-fit the rim halves into the shoe from the outside.
- Fill the hose with some air.
- Re-fit the cheese-head screws and screw the rim together tightly. Make sure the inner tube does not get pinched between the rims halves!
- Check the exact fit of the contact surface.
- Pump up the tyre to the prescribed air pressure.
- Re-check the exact fit of the contact surface.
- Screw on the valve cap.
- Fit the wheel.

12.1.2 Repairing a flat tyre (type 4.1/3.5-6 pneumatic tyres)



Pre-requisites:

- Flat screwdriver
 - 10 mm Allen key
 - 24 mm open-ended spanner
 - Repair kit for tyres with inner tube **or** a new hose.
 - Talcum powder
-

Removing the wheel

- Jack up the vehicle (Place a piece of wood under the frame).
- Carefully remove the cover cap (1) using the flat screwdriver.



- Use the Allen key to secure the axle (2) and loosen the nut on the inner side of the rocker (covered) with the open-ended spanner.
- Pull off the wheel and the axle in an outward direction.



PLEASE NOTE

Assembly is carried out in the reverse order. Please ensure that the wheel is re-fitted on the same side and in the same running direction it was in before removal.

Repairing a flat tyre

- Unscrew the valve cap.
- Let the air out of the tyre completely by pressing the pin in the centre of the valve in.
- Use the Allen key to remove the 5 cheese-head screws (rear side of the wheel, 2).
- Remove the rim halves from the shoe.
- Remove the hose from the contact surface.
- Repair the hose and re-fit or fit a new hose.



PLEASE NOTE

If it is intended to repair and re-fit the old hose and this has become wet during repair work, it can simplify fitting if some talcum powder is applied to the hose.

- Re-fit the rim halves into the shoe from the outside.
- Fill the hose with some air.
- Re-fit the cheese-head screws and screw the rim together tightly. Make sure the inner tube does not get pinched between the rims halves!
- Check the exact fit of the contact surface.
- Pump up the tyre to the prescribed air pressure.
- Re-check the exact fit of the contact surface.
- Screw on the valve cap.
- Fit the wheel.

13 Transport



CAUTION: Injury hazard or material damage if a power wheelchair which is fitted with a table is transported in a vehicle!

- *If a table is fitted, always remove it before transporting the wheelchair.*



13.1 Transferring the wheelchair to a vehicle



WARNING: The wheelchair is in danger of tipping over if it is transferred to a vehicle while the driver is still seated in the wheelchair!

- *Transfer the wheelchair without the driver whenever possible!*
- *If the wheelchair with the driver has to be transferred to a vehicle using a ramp, ensure that the ramp does not exceed the maximum safe slope (see chapter "**Technical specifications**" starting on page **140**)!*
- *If the wheelchair has to be transferred to a vehicle using a ramp that does exceed the maximum safe slope (see chapter "**Technical specifications**" starting on page **140**), a winch must then be used! An attendant can then safely monitor and assist the transfer process!*
- *Alternatively, a platform lift may be used!*
- *Ensure that the total weight of the power wheelchair including the user does not exceed the maximum permitted total weight for the ramp or platform lift!*
- *The wheelchair should always be transferred to a vehicle with the backrest in an upright position, the seat lifter lowered and the seat tilt in the upright position (see chapter "**Driving up and down gradients**" on page **36**)!*

- Drive or push your wheelchair into the transport vehicle using a suitable ramp.

13.2 Securing the wheelchair for transport



CAUTION: Injury hazard!

- *If you are unable to fasten your electric wheelchair securely in a transport vehicle, Invacare[®] recommends that you do not transport it!*
-

- Before transporting your wheelchair, make sure the motors are engaged and that the Joystick Box is switched off.

Invacare[®] strongly recommends that you additionally disconnect or remove the batteries. See "Removing the batteries" on page **121**.

- Invacare[®] strongly recommends securing the wheelchair to the floor of the transporting vehicle.

14 Refurbishment

The product is suitable for refurbishment. Actions to be carried out:

- Cleaning and disinfection. Please see chapter "Care and maintenance" on page **125**.
- Inspection according to service plan. Please consult service instructions, available from Invacare®.
- Adaptation to the user. Please see chapter "Adjusting the wheelchair to the user's seating posture" on page **41**.

14.1 Refurbishing the wheelchair for re-use



WARNING: Refurbishment of the wheelchair for re-use can lead to increased danger of tipping over!

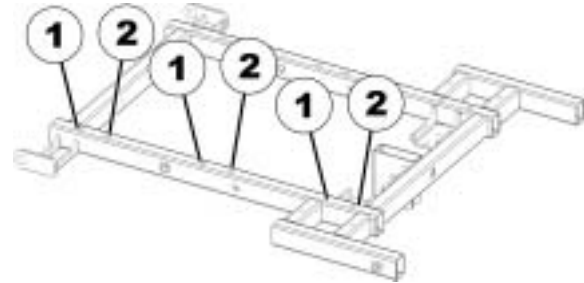
- *Always adhere to the table of permissible configurations when refurbishing the wheelchair for re-use!*
 - *With some seating systems and seat depths, the position of the seat needs to be moved backward! If necessary, a new seat frame that allows two different seat positions will need to be obtained from Invacare (available as a spare part)!*
-



Note!

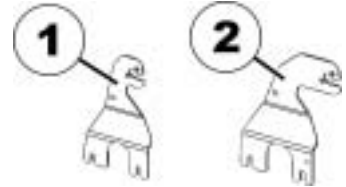
Use the different holes in the seat support to adjust the seat position (front or rear position).

- Seat in the rear position = use the rear holes (1) to mount the seat plate.
- Seat in the front position = use the front holes (2) to mount the seat plate.



Note!

When the seat is in the rear position, the short light fixation brackets (1) must be used to hold the headlights, when the seat is in the front position, long light fixation brackets (2) must be used (can be obtained as spare parts).



14.1.1 Configuration table

Seating system	Seat depth	Position of the seat	Wheel weights	Puncture proof tyres in the rear
Standard	41	Rear		
	46	Front		
	51	Front		
Contour	41	Rear	Necessary	Necessary
	46	Rear	Necessary	
	51	Front		
Flex	38	Rear	Necessary	Necessary
	43	Rear	Necessary	Necessary
	48	Rear	Necessary	
Recaro		Front		

15 Disposal

- The equipment wrapping is potentially recyclable.
- The metal parts are used for scrap metal recycling.
- The plastic parts are used for plastic recycling.
- Electric components and printed circuit boards are disposed of as electronic scrap.
- Exhausted or damaged batteries can be returned to your medical equipment supplier or Invacare®.
- Disposal must be carried out in accordance with the respective national legal provisions.
- Ask your city or district council for details of the local waste management companies.

16 Technical specifications

The technical information provided hereafter applies to a standard configuration or represents maximum achievable values. These can change if accessories are added. The precise changes to these values are detailed in the sections for the respective accessories.

Permissible operating and storage conditions	
Temperature range for operation according to ISO 7176-9:	• -25° ... +50 °C
Temperature range for storage according to ISO 7176-9:	• -40° ... +65 °C

Invacare® BAT-GC0812 charger	
Output current	• 8A
Output voltage	• 24V
Input voltage	• 200 – 250V
Operating temperature (surroundings)	• -25° ... +50°C
Storage temperature	• -40° ... +65°C

Powercharge® GBC04 charger	
Output current	• 12A
Output voltage	• 24V
Input voltage	• 200 – 250V
Operating temperature (surroundings)	• -25° ... +50°C
Storage temperature	• -40° ... +65°C

Electric System	6 km/h version	10 km/h version
Motors	• 500 W	• 680 W

Electric System	6 km/h version	10 km/h version
Batteries	<ul style="list-style-type: none"> • 2 x 12V, 47.4 Ah (5h) / 60 Ah (20h) • 2 x 12V, 63 Ah (5h) / 73.6 Ah (20h) • 2 x 12V, 80.5 Ah (5h) / 97.6 Ah (20h) (Recommended charger: Powercharge® GBC04) 	
Main fuse	<ul style="list-style-type: none"> • 50 A 	

Tyres	
Tyre pressure	The recommended maximum tyre pressure in bar or kpa is marked on the side wall of the tyre or the rim. If more than one value is listed, the lower one in the corresponding units applies. (Tolerance = -0.3 bar, 1 bar = 100 kpa)

Driving features	
Speed	<ul style="list-style-type: none"> • 6 km/h • 10 km/h
Min. braking distance	<ul style="list-style-type: none"> • 1000 mm (6 km/h) • 2100 mm (10 km/h)
Max. safe slope *****	• 10° (18 %) according to manufacturer's specifications with 150 kg payload, 4° seat angle, 20° backrest angle
Max. climbable obstacle height	• 110 mm
Turning diameter	• 2280 mm
Range according to ISO 7176-4:2008 (depending on type of battery) ***	<ul style="list-style-type: none"> • 45 km • 60 km • 80 km

Dimensions	Standard	Kontur	Flex	Recaro
Total height	• 1030 mm	• 1130 mm	• 1060 mm	• 1320 mm
Total width	• 700 mm	• 700 - 720 mm	• 700 - 720 mm	• 700 - 720 mm

Dimensions	Standard	Kontur	Flex	Recaro
Total length (incl. standard legrests)	<ul style="list-style-type: none"> • 1240 mm 			
Total length (excl. legrests)	<ul style="list-style-type: none"> • 1030 mm 			
Seat height ****	<ul style="list-style-type: none"> • 510 mm 			
Seat width (adjustable range of the armrests in brackets)	<ul style="list-style-type: none"> • 430 mm (440 - 480 mm**) 	<ul style="list-style-type: none"> • 430 mm (440 - 480 mm**) • 480 mm (490 - 530 mm**) 	<ul style="list-style-type: none"> • 380 mm (390 mm**) • 430 mm (440 - 480 mm**) • 480 mm (490 - 530 mm**) 	<ul style="list-style-type: none"> • 360/520 (490 - 530 mm)
Seat depth	<ul style="list-style-type: none"> • 410/460/510 mm 	<ul style="list-style-type: none"> • 410/460/510 mm 	<ul style="list-style-type: none"> • 380/430/480 mm 	<ul style="list-style-type: none"> • 460 - 510 mm
Height of backrest	<ul style="list-style-type: none"> • 480/540 mm 	<ul style="list-style-type: none"> • 640 mm 	<ul style="list-style-type: none"> • 550 mm 	<ul style="list-style-type: none"> • 770 - 830 mm
Backrest angle (manual)	<ul style="list-style-type: none"> • -10°, 0°, +7,5°, +15°, +22,5°, +30° 	<ul style="list-style-type: none"> • -10° ... +45° 	<ul style="list-style-type: none"> • -10° ... +45° 	<ul style="list-style-type: none"> • 0° ... +45°
Backrest angle (electric)	<ul style="list-style-type: none"> • 0° ... +16° 	<ul style="list-style-type: none"> • -10° ... +45° 	<ul style="list-style-type: none"> • -10° ... +45° 	<ul style="list-style-type: none"> • 0° ... +45°
Height of armrest	<ul style="list-style-type: none"> • 290 - 360 mm 	<ul style="list-style-type: none"> • 250 - 340 mm • 290 - 380 mm 	<ul style="list-style-type: none"> • 250 - 340 mm • 290 - 380 mm 	<ul style="list-style-type: none"> • 290 - 380 mm
Length of legrest	<ul style="list-style-type: none"> • 290 - 470 mm • 380 - 530 mm 			
Seat angle (fixed)	<ul style="list-style-type: none"> • 4° 			
Seat angle (electric)	<ul style="list-style-type: none"> • 1,5° ... 15° 			

Dimensions	Standard	Kontur	Flex	Recaro
Floor clearance	• 100 mm			

Weight *****	Standard	Kontur	Flex	Recaro
Kerb weight *	• 135 - 160 kg	• 140 - 170 kg	• 140 - 170 kg	• 140 - 170 kg

Loading				
Max. load	• 150 kg			

* Depending on fittings

** Width adjustable via side section adjustment.

*** Note: The range of an electric wheelchair is strongly dependent on external factors such as the charge state of the batteries, ambient temperature, local topography, condition of the road surface, tyre pressure, weight of the driver, manner of driving and the use of the batteries for lighting, servos, etc.

The specified values are theoretical maximum achievable values measured according to ISO 7176-4:2008.

**** Measured without seat cushion

***** The actual kerb weight depends on the fittings your mobility aid has been supplied with. Every Invacare® mobility aid is weighed when leaving the works. Please refer to the nameplate for the kerb weight (including batteries) measured.

***** Static stability according to ISO 7176-1 = 9° (15,8 %)
Dynamic stability according to ISO 7176-2 = 6° (10,5 %)

17 Inspections Performed

It is confirmed by stamp and signature that all jobs listed in the inspection schedule of the Service and Repair Instructions have been properly performed. The list of the inspection jobs to be performed can be found in the Service Manual which is available through Invacare®.

<u>Delivery Inspection</u>	<u>1st Annual Inspection</u>
Stamp of authorised Dealer / Date / Signature	Stamp of authorised Dealer / Date / Signature
<u>2nd Annual Inspection</u>	<u>3rd Annual Inspection</u>
Stamp of authorised Dealer / Date / Signature	Stamp of authorised Dealer / Date / Signature
<u>4th Annual Inspection</u>	<u>5th Annual Inspection</u>
Stamp of authorised Dealer / Date / Signature	Stamp of authorised Dealer / Date / Signature

Order No. of this Manual: 1491887.DOC
Release Date: 2012-08-09

English