

B500 classic/advanced

*Otto Bock*<sup>®</sup>

QUALITY FOR LIFE



CE

**EN** Instructions for Use  
(User)

### Additional options for the B500 advanced

The model B500 advanced power wheelchair can be equipped with the following additional options (applicable options are checked):

Electronic drive-away lock*		
<input type="checkbox"/> Function enabled	<input type="checkbox"/> Function disabled	
If enabled, the function is activated by pressing the mode key on the control panel. The function is deactivated with the joystick.		

2-way adapter cable*		
<input type="checkbox"/> Adapter cable included	<input type="checkbox"/> Adapter cable not included	
The included adapter cable allows the following functions to be selected directly through separate buttons:		
<input type="checkbox"/> Footrest, left	<input type="checkbox"/> Footrest, right	<input type="checkbox"/> Seat tilt
<input type="checkbox"/> Seat height adjustment	<input type="checkbox"/> Back angle adjustment	<input type="checkbox"/> Light
<input type="checkbox"/> Direction indicator, right	<input type="checkbox"/> Direction indicator, left	<input type="checkbox"/> Horn
<input type="checkbox"/> Warning flasher	<input type="checkbox"/> other:	

\*See the "Usage" chapter for more information

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## 1 Foreword

### INFORMATION

These instructions for use (user) can be viewed and downloaded from our website [www.ottobock.com](http://www.ottobock.com). It is possible to increase the display size of the PDF document stored there.

For further questions about the instructions for use (user), please contact the authorised personnel who issued the product to you.

With this wheelchair, you have purchased a high quality product which can be put to versatile, daily use at home, and outdoors.

Be sure to read these instructions for use before you start using the wheelchair. Pay special attention to the "Safety" and "Usage" chapters.

#### **Please note the following:**

- If questions or problems arise which cannot be resolved despite reading the instructions for use, please contact the authorised personnel which fitted your wheelchair, or Otto Bock service (address inside back cover or on back cover).

- All users and/or attendants must be instructed in use of the product with the aid of these instructions for use. In particular, the user(s) and/or attendant(s) must be informed of the residual risk with the aid of the safety instructions in these instructions for use.
- The wheelchair was fitted to the user's requirements. Further changes may only be made by authorised personnel. We recommend a regular review of the wheelchair fit in order to ensure an optimal fit over the long term. For growing children and youth, fitting should be performed every six months.
- The wheelchair may only be combined with the options listed in these instructions for use. Otto Bock assumes no liability for combinations with medical devices and/or accessories from other manufacturers outside of the modular system.
- Please note the information in the "Liability" chapter as well.
- The operational safety of the wheelchair can only be ensured if it is used properly in accordance with the information contained in these instructions for use. The user is ultimately responsible for accident-free operation.

- Your wheelchair model may differ from the models shown. In particular, not all the options described in these instructions for use will be installed on your wheelchair.
- We reserve the right to make technical changes to the version described in these instructions for use.

## 2 Product description

### 2.1 Function

The wheelchair is designed solely for individual use by persons who are unable to walk or who have a walking impediment, and can be operated either by the patient or by another person.

The wheelchair can be used on solid ground both indoors and outdoors.

### 2.2 Product Overview



**Fig. 1 Main Components**

- |   |                            |   |                        |
|---|----------------------------|---|------------------------|
| 1 | Backrest                   | 5 | Brake release          |
| 2 | Joystick and control panel | 6 | Footplate              |
| 3 | Armrest (side panel)       | 7 | Motor with drive wheel |
| 4 | Seat cushion               | 8 | Anti-tipper            |

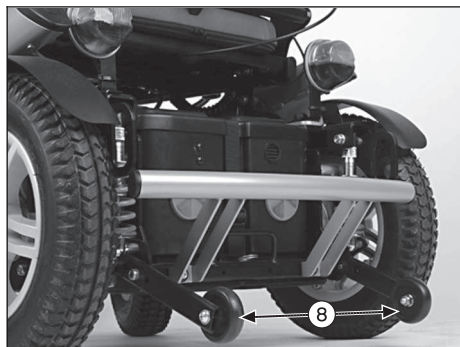


Fig. 2 Anti-tipper

### 3 Safety

#### 3.1 Explanation of warning symbols

	<b>WARNING</b>	Warnings regarding possible risks of severe accident or injury.
	<b>CAUTION</b>	Warnings regarding possible risks of accident or injury.
	<b>NOTICE</b>	Warnings regarding possible technical damage.

#### 3.2 General Safety Instructions

##### **WARNING**

##### **Improper wheelchair operation**

Risk of falling, tipping, collision with persons or nearby objects

- ▶ The power wheelchair may only be operated by a qualified user.
- ▶ Have the user or attendant trained in operation of the power wheelchair by authorised personnel instructed by Otto Bock.
- ▶ As the user, read the entire Instructions for Use.
- ▶ The power wheelchair may not be used in case of exhaustion or under the influence of alcohol or medications.
- ▶ Ensure that the power wheelchair is only operated by persons who do not have any mental limitations which can temporarily or permanently restrict attentiveness and judgment when driving in road traffic.
- ▶ You must observe road traffic regulations when driving in road traffic.



**⚠ WARNING****Failure to heed or observe the safety instructions**

Risk of pinching, crushing, being pulled in, tipping, falling

- ▶ Observe all safety instructions in these instructions for use and in all other applicable documents.

**⚠ WARNING****Improper use of the power wheelchair**

Risk of pinching, crushing, being pulled in, tipping, falling

- ▶ Only use the power wheelchair for its intended purpose.
- ▶ Only one person may be transported in the power wheelchair at any one time.

**⚠ CAUTION****Ignition of seat cushion and backrest cover**

Risk of burns

- ▶ The seat cushion and backrest cover of the wheelchair are not highly flammable, but there is a possibility they may catch fire. Utmost caution is therefore required near any open fires.

- ▶ Keep away from any sources of fire, in particular burning cigarettes.

**⚠ CAUTION****Extreme temperatures**

Risk of hypothermia or burns on wheelchair parts

- ▶ Do not expose the product to any extreme temperatures (e.g. direct sunlight, sauna, extreme cold).

**NOTICE****Overloading**

Risk of damage to the product

- ▶ Don't exceed the maximum load capacity of **140 kg / 310 lbs.**
- ▶ If the power wheelchair is equipped with a seat height adjustment feature, then the maximum load capacity is **130 kg / 285 lbs.**

**NOTICE****Use under wrong environmental conditions**

Risk of damage to the product



- Only use the power wheelchair within a temperature range of **-25 °C to +50 °C (-13 °F to 122 °F)**.


### **3.3 Reference to additional safety instructions**

Observe additional safety instructions in the following chapters:

- Chapter "Preparation for Use"
- Chapter "Usage" > "Driving Functions"
- Chapter "Usage" > "Batteries/Charging Process"
- Chapter "Usage" > "Power Seat Functions"
- Chapter "Usage" > "Manual Seat Functions"
- Chapter "Usage" > "Disassembly/Transport"
- Chapter "Usage" > "Use in a Wheelchair Accessible Vehicle"
- Chapter "Usage" > "Care"
- Chapter "Maintenance/Repair"
- Chapter "Disposal"

### 3.4 Rating Plate and Warning Labels

Label	Meaning
 <p>The rating plate is located on the side of the frame below the seat.</p>	<p><b>A</b> Type designation</p> <p><b>B</b> Maximum load capacity (see chapter "Technical Data")</p> <p><b>C</b> Maximum climbing ability (see chapter "Technical Data")</p> <p><b>D</b> Maximum speed (see chapter "Technical Data")</p> <p><b>E</b> Maximum front/rear axle load capacity</p> <p><b>F</b> Maximum gross weight</p> <p><b>G</b> Symbol for separate collection of electric and electronic devices. Components of the power wheelchair and batteries may not be disposed of in household waste.</p> <p><b>H</b> CE symbol – product safety according to EU guidelines</p> <p><b>I</b> Serial number</p> <p><b>J</b> Read the instructions for use before using the product. Observe safety instructions found in the instructions for use</p> <p><b>K</b> Manufacturer information / address</p> <p><b>L</b> Country of origin</p>
	<p><b>A</b> Electric driving mode: lock motor brake</p> <p><b>B</b> Manual pushing mode: unlock motor brake</p>

Label	Meaning
	Risk of pinching. Do not reach into the danger area.

## 4 Delivery

### 4.1 Scope of supply

The power wheelchair is normally shipped fully assembled and fitted to the personal requirements of the respective user.

The scope of delivery includes:

- Fitted power wheelchair with main components
- Installed options
- Battery charger
- Instructions for Use (user)

### 4.2 Options

The standard model can be fitted to the user's personal requirements through a large range of options.

A full list of the available modules and accessories is shown on the order form and in the accessories catalogue.

To use options: see Page 22 et. seq.

#### 4.2.1 Model B500 classic

The B500 classic power wheelchair can be equipped with up to 2 of the following power seat options:

- Power seat height adjustment

- Power seat tilt available in 3 different versions (up to 20°, up to 30°, up to 45°)
- Power back angle adjustment up to 30°
- Power adjustable footrests

The wheelchair is controlled by an enAble40 control unit.

#### 4.2.2 Model B500 advanced

The B500 advanced power wheelchair can be equipped with up to 4 of the following power seat options:

- Power seat height adjustment
- Power seat tilt available in 3 different versions (up to 20°, up to 30°, up to 45°)
- Power back angle adjustment up to 30°
- Power adjustable footrests with 3 programmable versions (only left, only right, or both sides control)

The wheelchair is controlled by an enAble50 control unit.

For additional information on enabling/user specific adjustment of certain enAble50 control unit functions: see inside front cover.

## 4.3 Storage

### 4.3.1 During daily use

The power wheelchair should always be protected against external influences.

The control unit must be turned off.

### 4.3.2 In case of extended disuse

#### NOTICE

##### Deep discharge due to standby current

Risk of battery damage

- ▶ Remove the fuse if the wheelchair is not used for more than 3 days.

#### INFORMATION

To remove the fuse: see Page 80 et. seq.

Please observe the following if the power wheelchair is not used for more than **3 days**:

### Storage Conditions

- Maintain an ambient temperature between **-40 °C and +65 °C (-40 °F to 149 °F)** and a relative humidity between **45 and 85 %**.
- Store the power wheelchair in a dry, enclosed room with sufficient air circulation and protection from external influences.
- Protect the wheels against ground frost, e.g. by relieving them completely through assembly blocks or wooden boards.
- Fill the wheels with slight overpressure and rotate them at regular weekly intervals to prevent flat tyres from extended standing.

### Note regarding the tires

- If the power wheelchair is not moved for several days, permanent colour changes may occur where the wheelchair comes into contact with the surface it is standing on. Therefore a suitable underlay should be used if the wheelchair is parked for extended periods of time.
- Tires contain chemical substances that can react with other chemical substances (such as cleaning agents or acids).

- Black tires contain soot particles. They may leave black marks where they come into contact with the ground. Therefore Otto Bock recommends grey tires if the wheelchair is primarily used indoors.
- Direct sunlight/UV light causes the tires to age prematurely. As a result, the tread surface hardens and corner pieces break out of the tread.
- Avoid unnecessary parking outdoors. The tires should be replaced every **2 years** regardless of wear and tear.

## 5 Preparation for use

### 5.1 Safety Instructions

#### **WARNING**

##### **Improper modification of the settings**

Risk of tipping, falling, improper user posture

- ▶ Do not modify the settings made by the authorised personnel.
- ▶ In case of problems with the settings (unsatisfactory sitting position, control panel problems, etc.), please contact the authorised person who fitted your power wheelchair.

#### **WARNING**

##### **Incorrect handling of packaging materials**

Risk of suffocation

- ▶ Packaging materials must be kept out of reach of children.

#### **CAUTION**

##### **Uncontrolled movement of components when making adjustments**

Risk of crushing, pinching, blows to limbs

- ▶ Ensure that body parts, such as hands or head, are never in the danger zone.
- ▶ Perform the work with the aid of a helper for support.

#### **CAUTION**

##### **Unsecured screw connections**

Risk of pinching, crushing, tipping, and falling due to components coming loose

- ▶ After all adjusting/readjusting work, re-tighten the attachment screws/nuts firmly. Observe any torque settings which may be specified.

- Any time you loosen a screw connection with thread lock, replace it with a new screw connection or secure the old screw connection with medium strength thread locker (e.g. Loctite 241®).

## 5.2 Initial operation

The specialist dealer ships the power wheelchair fully assembled and ready to use.

The following additional tasks may be required:

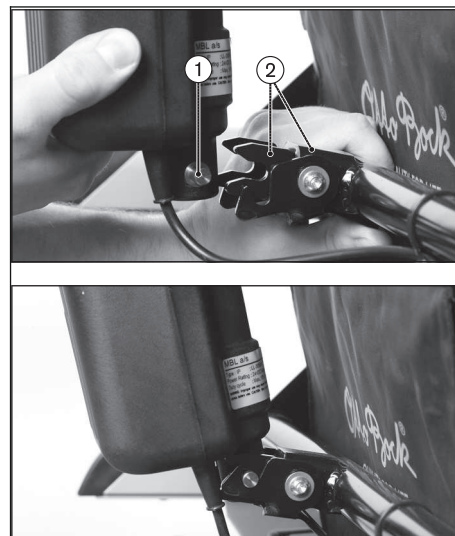
- Adjusting settings: see Page 17 et. seq.
- Installing the side panels: see Page 22
- Installing the footrests: see Page 23
- Charging the battery: see Page 40 et. seq.

### 5.2.1 Locking the back angle adjustment in place

If the power wheelchair is equipped with mechanical/power back angle adjustment, proceed as follows if necessary:

- 1) Fold the backrest up.
- 2) Place the cross bolt on the end of the gas compression spring or actuator into the bracket (see Fig. 3, item. 1).

- 3) Push the lever down until the lock engages (see Fig. 3, item. 2).
- 4) Check the bolt and lock to ensure that they are securely engaged.



**Fig. 3** Place the cross bolt into the bracket (top); locked cross bolt (bottom)

1 Cross bolt

2 Lock with lever



## 5.3 Adjustments

### 5.3.1 Prerequisites

Fine fitting/adjusting work should always be performed with the user. The user should sit upright in the wheelchair while adjustments are made.

Seat height, seat width, and seat angle are set according to the customer order and may only be changed by a specialist dealer.

The following can be adjusted by the user:

- Back angle
- Armrest height/position
- Lower leg length
- Strap lengths
- Control panel position

All parts of the product should be cleaned thoroughly before adjustments are made.

### 5.3.2 Adjusting the back angle

#### Standard/contour seat

- 1) Pull on the strap until the locking bolts are free.
- 2) Change the backrest angle to the desired position.
- 3) Release the strap. The locking bolts engage at the desired position.



**Fig. 4** Adjusting the back angle

- |                         |                 |
|-------------------------|-----------------|
| 1 Release/locking strap | 2 Locking bolts |
|-------------------------|-----------------|

## Recaro® Seat

### **⚠ WARNING**

#### **Incorrect Recaro® Seat settings**

Risk of falling, tipping

- ▶ Note that the maximum backrest angle is **30°** while standing and **20°** while driving.

### **INFORMATION**

For further Recaro® Seat settings: Adjusting the Recaro® Seat.

- ▶ Turn the knob on the left or right side of the backrest until the backrest is in the desired position (see Fig. 5, item. 2).



**Fig. 5** Adjusting the Recaro® Seat angle

- 1 Release handle
- 2 Back angle adjustment knob

### **5.3.3 Adjusting the side panels**

#### **INFORMATION**

To remove and install the side panels: see Page 22.

### Adjusting the armrest height

- 1) Loosen the Allen head bolt on the side panel (see Fig. 6).
- 2) Slide the armrests up or down to the desired position.
- 3) Tighten the Allen head bolt.

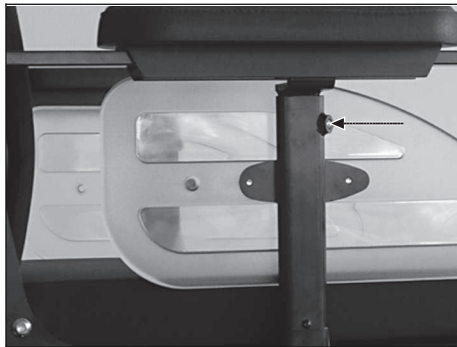


Fig. 6 Allen head bolt for height adjustment

### Adjusting the armrest to the forearm length

- 1) Loosen the 2 Allen head screws on the bottom of the armrest (see Fig. 7).

- 2) Slide the armrest with the spare tube forward or backwards along the attachment rail to the desired position.
- 3) Tighten the 2 Allen head screws.



Fig. 7 Adjusting the armrest depth

### 5.3.4 Adjusting the footrests

#### INFORMATION

To remove and install the footrests: see Page 23.

## Adjusting the lower leg length

### **CAUTION**

#### **Exposed pinch points**

Pinching, crushing of fingers

- ▶ Ensure that your fingers are not in the danger area when flipping the footrests up or down.

- 1) Loosen the 2 Allen head screws on the footrest bar (see Fig. 8).
- 2) Slide the footplate up/down to the desired position.  
**INFORMATION Do not pull the footrest bar more than 160 mm out of the bracket, otherwise it no longer provides secure support.**
- 3) Re-tighten the footrest bar screws.



Fig. 8 Adjusting the lower leg length

### 5.3.5 Adjusting the belt lengths

To adjust the belt lengths: see Page 64.

### 5.3.6 Adjusting the control panel

#### **INFORMATION**

The power wheelchair may be equipped with an optional height-adjustable or swing-away control panel holder (see Page 63)

### Adjusting the control panel to the forearm length

- 1) Loosen the 3 set screws on the bottom of the armrest.
- 2) Slide the rail with control panel forwards or backwards.  
**INFORMATION** If the control panel rail is too long, then the excess length can be trimmed.
- 3) Tighten the 3 set screws on the bottom of the armrest.

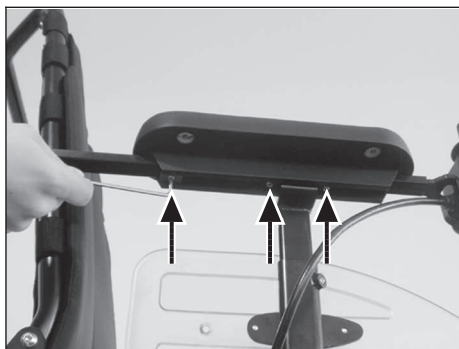


Fig. 9 Adjusting the control panel

### Changing the control panel side

By default, the control panel is mounted on the side specified in the order. It can also be mounted on the other side later on if the user so desires.

### INFORMATION

The control panel mounting side may only be changed by authorised personnel.

### 5.3.7 Changing control unit parameters

### ⚠ WARNING

#### Wrong configuration settings

Risk of falling, tipping, collision with persons or objects in the vicinity

- ▶ Programming may only be performed by authorised personnel trained by Otto Bock. Otto Bock and the control unit manufacturer are not liable in case of damage caused by programming which was not performed properly and/or which was not adjusted properly according to the user's abilities.
- ▶ Note that modified parameter settings in the configuration can lead to changes in driving characteristics. In particular, changes to the speed, acceleration, braking or joystick settings can lead to unexpected and therefore uncontrollable driving characteristics and cause an accident.

- After configuration/programming is complete, the user must test the driving characteristics of the power wheelchair under the supervision of the authorised personnel.

If necessary, the authorised personnel can fit the already preprogrammed wheelchair control system and accessories to the specific user requirements.

## 6 Operation

### 6.1 Side panels

#### Removing the side panel

- 1) Loosen the thumb screw on the side panel holder (see Fig. 10).
- 2) Withdraw the side panel from the side panel holder and set it aside.
- 3) Only for side panel with control panel: Carefully allow the side panel with control panel to hang down.

**INFORMATION** If necessary, the hook and loop closures for routing the control panel cable can be loosened and the control panel can be removed.



Fig. 10 Side panel thumb screw

#### Installing the side panel

- 1) If necessary, install the control panel and fasten the hook and loop closures for routing the control panel cable.
- 2) Insert the side panel into the side panel holder.
- 3) Tighten the thumb screw on the side panel holder again.

## 6.2 Footrests

### CAUTION

#### Exposed pinch points

Pinching, crushing of fingers

- ▶ Ensure that your fingers are not in the danger area when flipping the footrests up or down.

#### Removing the footrests

- 1) Unhook the calf band.
- 2) Flip the footplate up.
- 3) Release the footrest lock (see Fig. 11).
- 4) Flip the footrest out or in.
- 5) Pull the footrest up and remove it.



Fig. 11 Locking the footrest

#### Installing the footrests

Proceed as follows if a footrest must be installed:

- 1) Hook the footrest into the holder from above.
- 2) Swing the footrest forward until the footrest lock engages.
- 3) Hook the calf band into the holder.

### 6.3 Getting in / transfer

#### CAUTION

##### Getting in and out incorrectly

Risk of falling, tipping, pinching, crushing

- ▶ Turn the control unit off while getting in and out, in order to avoid accidental driving.
- ▶ Note that the armrests are not capable of bearing full body weight, and therefore must not be used for getting into or out of the wheelchair.
- ▶ Ensure that your limbs are not in the danger area when flipping the footrests up or down.

The modular design of the power wheelchair and the ease with which you can remove the side panels and footrests make it easy to get into and out of the wheelchair from the side or from the front.

Users can choose the method for getting into and out of the wheelchair which is most suitable for them.

### Getting in from the front

#### CAUTION

##### Exposed pinch points

Pinching, crushing of fingers

- ▶ Ensure that your fingers are not in the danger area when flipping the footrests up or down.

- 1) Place the seat in the horizontal position.
- 2) Flip the footrests up (see Fig. 12) or remove them to gain a larger entry and exit area (see Fig. 11). Removing the footrests increases the available entry or exit area (see Fig. 13).
- 3) Have an attendant assist you or use a transfer lifter to get into and out of the power wheelchair.
- 4) Flip the footrest down or reinstall it and flip it down (see Page 23).
- 5) Put the lap belt on when necessary (when driving on the road).





Fig. 12 Footrest flipped up



Fig. 13 Footrest removed

### Getting in from the side

- 1) Place the seat in the horizontal position.
- 2) Bring the power wheelchair as close as possible to where the user is sitting.
- 3) Remove the side panel (see Page 22).  
**INFORMATION** If the control panel is on the side from which the user is getting into the wheelchair, it can be removed and laid onto the seat.
- 4) Remove the footrest if necessary (see Fig. 11).
- 5) Slide onto the seat from the side.  
**INFORMATION** A ramp makes it easier to get into and out of the wheelchair from the side.
- 6) Install the side panel (see Page 22).
- 7) Put the lap belt on when necessary (when driving on the road).

### 6.4 Control unit

**⚠ CAUTION**

**Uncontrolled driving behaviour due to interference from electromagnetic fields**

Risk of falling, tipping, collision with persons or nearby objects

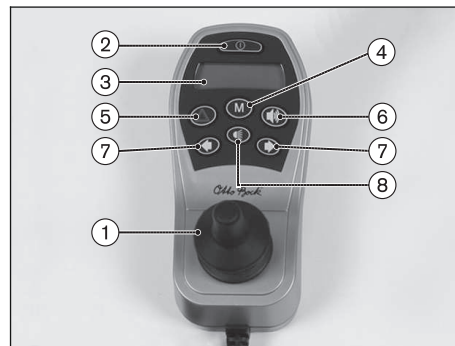
- ▶ Switch all mobile devices off while driving.
- ▶ Turn the control unit off when it is not needed.

The power wheelchair is controlled by a VR2 controller. Since the control unit is programmable, it can be adapted to the personal requirements of the user; e. g. the speed, acceleration and deceleration values can all be adapted.

### 6.4.1 Control Panel

The power wheelchair is operated using the control panel. The control panel consists of a keypad, LCD display and joystick. The charging/programming receptacle and two inputs for external push-buttons are located on the underside.

The control panel is used to switch the power wheelchair on and off, to enter driving commands and to display the current state of certain functions and components.



**Fig. 14 enAble50 control panel (identical to: enAble40)**

- |   |                 |   |   |
|---|-----------------|---|---|
| 1 | Joystick        | 5 | [Warning Flasher On/Off] Button         |
| 2 | [On/Off] Button | 6 | [Horn] Button                           |
| 3 | LCD Display     | 7 | [Direction Indicator Left/Right] Button |
| 4 | [Mode] Button   | 8 | [Lights On/Off] Button                  |

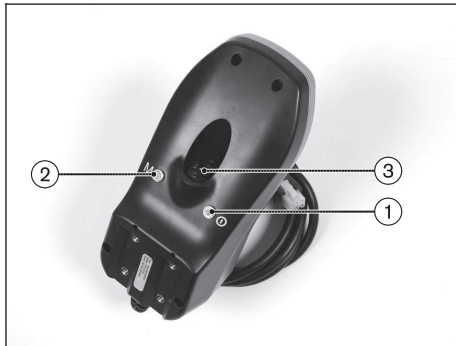


Fig. 15 Connections on the underside

- 1 External button connection [On/Off] (only with enAble50)
- 2 External button connection [Mode] (only with enAble50)
- 3 Charging / programming receptacle

## 6.4.2 Buttons and display functions

### Joystick

The speed and driving direction are controlled with the joystick. When a seat option is activated, the joystick operates this seat option.

### [On/Off] Button

Holding this button turns the power wheelchair on or off and activates/deactivates the drive-away lock.

### [Mode] Button

Pressing the button briefly increases/decreases the speed level. After reaching the maximum speed level, you can change back to speed level 1 by pressing the button again (1-2-3-4-5-1-...).

Holding the button (for at least 2 seconds) switches the control unit into the **Power Seat Functions** menu.

### [Warning Flasher On/Off] Button

All 4 warning flashers are activated/deactivated when this button is pressed.

### [Horn] Button

The horn will sound as long as the button is pressed.

### [Direction Indicator Left] and [Direction Indicator Right] Button

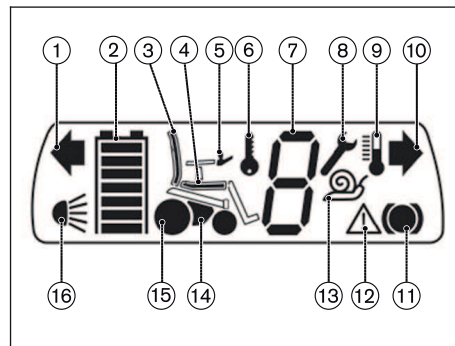
Pressing these buttons activates/deactivates the respective front and rear direction indicators. The direction indicator lights turn off automatically after 20 seconds.

### [Lights On/Off] Button

The front and rear lights are activated/deactivated by pressing the button.

### LCD Display

The LCD display is the communication interface between the user and the control unit. It indicates the selected speed level, the remaining battery capacity, the status of power options as well as warnings and errors. All display symbols are displayed while the power wheelchair turns on.




**Fig. 16** LCD display with all symbols

- |   |                           |    |                            |
|---|---------------------------|----|----------------------------|
| 1 | Direction indicator, left | 9  | Excess temperature         |
| 2 | Battery capacity          | 10 | Direction indicator, right |
| 3 | Power backrest            | 11 | Drive wheel brake          |
| 4 | Power seat tilt           | 12 | Warning                    |
| 5 | Control Panel             | 13 | Creeping speed             |
| 6 | Drive-away lock           | 14 | Power module               |
| 7 | Speed level               | 15 | Drive motor                |
| 8 | Open-end wrench           | 16 | Light                      |

**Selected speed level (LCD display)**

After turning the wheelchair on, the display indicates the selected speed level and battery capacity in the **Driving** menu:

Display	Information
	Right: Selected speed level = 1 Left: Battery capacity


**Battery capacity indicator (LCD display)**





The "Battery Capacity" LCD display (see Fig. 16, item 2) is divided into 7 segments which indicate the current battery capacity:

- Immediately after switching the power wheelchair on, the battery indicator shows the last saved battery capacity. Charge condition following last use.
- After driving for a little bit, the battery display indicates the exact battery status.
- A charge of 100% corresponds to 7 segments on the battery symbol.

- If one segment turns of, this means that the battery's capacity has decreased by approximately 14 %. At a total range of **approximately 25 km** over even terrain, each segment corresponds to a range of approximately **3.5 km** when the speed is kept constant.
- If only 1 blinking segment is shown on the LCD display, then the battery is in a low voltage state. Since further use results in battery damage, the warning signal is also shown on the LCD display. The battery must be charged immediately.
- If all 7 segments on the LCD display are flashing, this means that the battery is over voltage. Since further use results in battery damage, the warning signal is also shown on the LCD display.
- The charging process is indicated by the battery segments lighting up one after the other. The driving function is locked out while the battery is charging.

**Battery indicator on the control panel**

Display	Information
	Full battery capacity (right: selected speed level)

Display	Information
	Low battery capacity
	Charging process with drive-away lock
	Battery is under voltage, with warning symbol
	Battery is over voltage, with warning symbol

### Further LCD display functions

Further LCD display symbols are described in the following chapters:

- see chapter "Usage" > "Drive-away Lock"
- see chapter "Usage" > "Seat Functions"
- see chapter "Maintenance/Repair" > "Troubleshooting"

## 6.5 Driving Functions

### 6.5.1 Safety Instructions

#### CAUTION

##### Lack of driving experience

Risk of tipping, falling

- ▶ Practice on level, open ground first.

### Dangers while driving

#### WARNING

##### Uncontrolled rolling

Risk of collision with persons nearby objects

- ▶ Note the lack of brake functionality when the brake is deactivated. The brake function may only be released in the presence of an attendant.
- ▶ Should the user be unable to release the brake himself, the brake can be released by the attendant.
- ▶ Note that when the power wheelchair is moved on an incline, the attendant must provide the required brake force.

- ▶ Lock the brake every time before parking the power wheelchair.

**⚠ CAUTION**

**Insufficient support of the seated person**

Risk of falling out of the power wheelchair

- ▶ Always wear the safety belt / lap belt when driving in public.

**⚠ CAUTION**

**Risk of uncontrolled driving behaviour**

Risk of falling, tipping, collision with persons or nearby objects

- ▶ If any faults, defects or other hazards that can lead to personal injury are detected, the power wheelchair must be taken out of service immediately.
- ▶ Contact your authorised specialist dealer if uncontrolled movement of the power wheelchair occurs due to a malfunction.

**⚠ CAUTION**

**Driving in the dark**

Risk of an accident involving other traffic, collision with persons or objects in the vicinity.

- ▶ Wear bright clothing or clothing with reflectors.
- ▶ Turn the lights on (if available) or install active lights.
- ▶ Ensure that the reflectors on the power wheelchair are clearly visible.

**⚠ CAUTION**

**Interference from electromagnetic fields**

Risk of falling, tipping, collision with persons or nearby objects

- ▶ Turn all mobile devices off while driving, since the driving characteristics of the power wheelchair are affected by electromagnetic fields (mobile phones or other radiating devices).
- ▶ Turn the control unit off when it is not required, since the power wheelchair may generate electromagnetic fields that can cause interference with other devices. The power wheelchair has been tested according to EMC regulations.

**INFORMATION**

During use of the power wheelchair, electrical discharges (high voltage with low current; discharge via the user) may occur which are caused by factors such as friction. However, these do not represent a health hazard. The resulting discomfort can be prevented by customisation measures (attaching a mechanical discharge contact / grounding strap to the power wheelchair frame). The user's environment must be taken into consideration.

Electrostatic discharge may also occur if the power wheelchair is equipped with puncture-proof tires. Retrofitting the wheelchair with pneumatic tires can correct this problem.

**Danger during use of public transportation, elevators, lifting platforms****⚠ WARNING****Use of public transportation, elevators, lifting platforms**

Risk of tipping, collision with persons or objects in the vicinity

- ▶ Always turn the power wheelchair control unit off when using buses, trains, elevators, or lifting platforms.

- ▶ Engage the brake.

**Danger due to defective tires****⚠ CAUTION****Defective tires**

Risk of accident/falls due to poor traction, reduced braking effect, or lack of manoeuvrability

- ▶ Check for proper tire pressure. The correct tire pressure is printed on the casing.
- ▶ Ensure that the drive wheels have the same pressure.
- ▶ Ensure that the tires have sufficient tread depth.
- ▶ Avoid parking outside and in direct sunlight (UV radiation) since this causes the tires to age quickly. Otto Bock recommends replacing the tires every **2 years** regardless of the amount of wear.
- ▶ Always ensure sufficient clearance to sources of heat. If the wheelchair is parked for an extended period of time or the tires overheat (e.g. in the vicinity of radiators or in case of exposure to strong sunlight behind glass), the tyres may become permanently deformed.
- ▶ Move your power wheelchair frequently or have a way to jack it up for storage.



### 6.5.2 Driving notes

#### General:

- Beginners should always drive slowly.
- Always take curves slowly.
- Uncontrolled driving behaviour may occur on uneven ground. Therefore the speed must always be adjusted to the ground conditions.
- Driving backwards should be limited to manoeuvring or short distances on level ground.

#### Obstacles (steps, curbs):

- The critical obstacle height is **50 mm (2 in)**. Obstacles higher than **50 mm (2 in)** may not be crossed.
- Always approach obstacles directly from the front (never at an angle with only one caster wheel).
- Always drive forward over obstacles.
- Always reduce speed to cross over obstacles (e.g. select speed level 1).
- Avoid jumping down from steps.
- Don't lean out of the wheelchair while crossing obstacles

- Uncontrolled driving behaviour may occur on uneven ground. The speed must always be adjusted to the ground conditions.

#### Inclines and downgrades:

- Ascending or descending slopes up to max. 17 % is permitted. Driving on steeper inclines or downgrades is not permitted. Otherwise safe braking is not ensured.
- In order to navigate downgrades safely, the speed must be reduced according to the slope (e.g. select speed level 1).
- Never drive downhill backwards.

#### All terrain driving:

The speed must be reduced in dangerous areas (e.g. select speed level 1).

- Typical dangerous areas include:
  - narrow paths along waterways/slopes/cliffs (e.g. quay walls, dikes, etc.)
  - cramped rooms or areas.
  - steep downgrades (e.g. in the mountains, facing streets).
  - unsurfaced areas (e.g. on construction sites, crossings, train crossings).
  - snow-covered or icy areas.

### 6.5.3 Switching on and off

#### **WARNING**

##### **Lack of brake functionality**

Risk of falling, tipping, collision with persons or nearby objects

- ▶ Ensure that the brake release lever is locked every time before you drive.
- ▶ Check to ensure that the brakes are operational and functional every time before you drive.

#### **WARNING**

##### **Defective safety functions**

Risk of falling, tipping, collision with persons or nearby objects

- ▶ Before every use, ensure that the power wheelchair and its safety functions are in safe and proper condition.
- ▶ Only use the power wheelchair if all safety functions, e.g. the automatic brakes, are functional.


#### **INFORMATION**

In dangerous situations, the power wheelchair can be turned off at any time using the on/off button. When the button is pressed, the power wheelchair brakes immediately and the electrical functions cease. Malfunctions such as an insufficient supply of power to the brake are recognised by the software, triggering an emergency stop or reducing the speed of the power wheelchair. A warning signal will also sound.

- Pressing the [On/Off] button (see Fig. 14, item 2) turns the power wheelchair control unit on or off. The power wheelchair turns off automatically if the control panel is not used for an extended period of time.
- The power wheelchair brakes automatically and comes to a stop if it is turned off with the [On/Off] button while driving.
- The specialist dealer can use the parameter settings to specify the speed level or menu of the power wheelchair after it is turned on, according to the user's requirements.

#### 6.5.4 Selecting the speed levels

- The power wheelchair has a programmable number of speed levels (delivery condition = 5 speed levels).
- The speed level is increased by briefly pressing the [Mode] button (see Fig. 14, item 4).
- After reaching the maximum speed level, the next speed level is 1.
- The LCD display indicates the selected speed level in the **Driving** menu:

Display	Information
	Selected speed level = 1 (left: battery capacity)

#### 6.5.5 Driving

##### **WARNING**

##### **Driving on slopes, over obstacles**

Risk of falling, tipping

- ▶ Only drive on slopes up to max. **17 %**.
- ▶ Only cross obstacles which are not higher than **50 mm (2 in)**.
- ▶ Do not cross over any obstacles while driving on inclines or downgrades.
- ▶ Reduce speed when driving downhill (e.g. select speed level 1).
- ▶ Only drive over obstacles such as steps or low curbs at a reduced speed (**max. 3 km/h**).
- ▶ Approach obstacles at right angles and drive over them at one go.

- ▶ Only drive on inclines and over obstacles with the seat tilt and seat height adjustments lowered and with a vertical backrest. The seat can be tilted back slightly when driving downhill.
- ▶ Avoid getting into or out of the power wheelchair on slopes.
- ▶ Do not drive over stairs.

### WARNING

#### Driving on unsuitable surfaces

Risk of falling, tipping

- ▶ Do not operate the power wheelchair on very smooth surfaces (e.g. icy surfaces) or very rough surfaces (e.g. gravel or rubble).

### INFORMATION

The control unit of the power wheelchair switches to a safe mode at elevated temperatures and after driving uphill for extended periods of time, limiting the performance of the power wheelchair.

The user is able to drive the power wheelchair out of a hazardous situation at any time. The power wheelchair is

fully functional again once the unit has cooled down sufficiently (this may take several minutes depending on the ambient temperature).

The power wheelchair is controlled by moving the joystick:

- The further the joystick is deflected from the centre position, the faster the power wheelchair will drive in this direction.
- The maximum speed at full deflection of the joystick depends on the selected speed level.
- Releasing the joystick automatically activates the brake function, bringing the power wheelchair to a halt.

The mechanical brakes are activated automatically when the power wheelchair comes to a stop so that it cannot roll.

#### 6.5.6 Drive-away lock

### INFORMATION

For the B500 advanced/B500 plus, the drive-away lock can only be activated as described if the function was previously enabled (see front inner cover). The factory default setting can be changed by the specialist dealer.

Please ask your specialist dealer about the setting selected for your wheelchair.


The power wheelchair control unit features an electronic drive-away lock. This function is activated/deactivated via the control panel.

The drive-away lock can only be activated or deactivated if the "Drive-away lock" parameter is set to "Function enabled". Unless otherwise specified in the order, the drive-away lock is set to "Function disabled" at the factory.

If this setting needs to be changed, this is done by the authorised person who fitted the wheelchair.

### Activating the drive-away lock

- ▶ While the control unit is turned on, press and hold the mode button for at least 5 seconds.
- A short beep confirms that the drive-away lock was activated.
- INFORMATION If keypress beeps are activated, then the drive-away lock is only active after the second beep.**
- The control unit turns itself off.
- The key symbol on the LCD display indicates that the drive-away lock is activated:

Display	Information
	Drive-away lock

### Deactivating the drive-away lock

- 1) Push the [On/Off] button on the control panel.
  - The control unit is turned on. The LCD display indicates that the drive-away lock is activated:
- 2) Push the joystick all the way forward until a beep sounds.
- 3) Push the joystick all the way back until a beep sounds.
- 4) Release the joystick.
  - A long beep confirms that the driving function is enabled.
  - The battery indicator and speed level are shown on the LCD display.
  - The drive-away lock is deactivated and driving is enabled.

### Problem resolution

The drive-away lock remains active if the joystick is not moved correctly.

- 1) Turn the control unit off in order to deactivate the drive-away lock again.
- 2) Turn the power wheelchair on.
- 3) Deactivate the drive-away lock again.

### 6.5.7 Adjusting the driving characteristics

#### **WARNING**

##### **Wrong configuration settings**

Risk of falling, tipping, collision with persons or objects in the vicinity

- ▶ Programming may only be performed by authorised personnel trained by Otto Bock. Otto Bock and the control unit manufacturer are not liable in case of damage caused by programming which was not performed properly and/or which was not adjusted properly according to the user's abilities.

- ▶ Note that modified parameter settings in the configuration can lead to changes in driving characteristics. In particular, changes to the speed, acceleration, braking or joystick settings can lead to unexpected and therefore uncontrollable driving characteristics and cause an accident.
- ▶ After configuration/programming is complete, the user must test the driving characteristics of the power wheelchair under the supervision of the authorised personnel.

Adjusting and setting the speed, acceleration, and delay values to the individual user requirements is performed exclusively by authorised personnel trained by Otto Bock.

### 6.6 Activating/deactivating the brakes

#### **WARNING**

##### **Uncontrolled rolling**

Risk of collision with persons nearby objects

- ▶ Note the lack of brake functionality when the brake is deactivated. The brake function may only be released in the presence of an attendant.
- ▶ Should the user be unable to release the brake himself, the brake can be released by the attendant.

- ▶ Note that when the power wheelchair is moved on an incline, the attendant must provide the required brake force.
- ▶ Lock the brake every time before parking the power wheelchair.

**⚠ WARNING**

**Improper maintenance, repair, or adjustment work on the brake**

Risk of falling, tipping, collision with persons or nearby objects


- ▶ Repairs and adjustments to the brake may only be made by authorised personnel trained by Otto Bock. Incorrect settings can lead to a loss of braking power.

It is possible to push the power wheelchair in case of control unit failure or insufficient battery capacity. To do so, it is necessary to disable the brake using the release mechanism described below.

The brake release is located between the frame and seat, on either the right or left side according to customer preference.

**Disabling/deactivating the brake**

- 1) Pull the brake release bolt up (see Fig. 17, item 1).
  - The brake release lever (see Fig. 17, item 2) is unlocked.
- 2) Push the brake release lever forward until it engages.
  - The brake is disabled, all braking systems are turned off.
  - The control unit will recognise that the brake has been disabled and deactivate the driving function.
  - A warning will appear on the LCD monitor as soon as the joystick is deflected:

Display	Information
	Brake is disabled

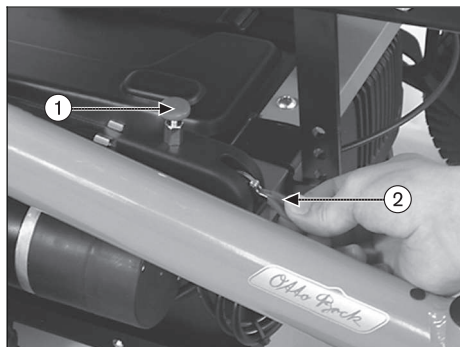


Fig. 17 Disabling the brake

- 1 Brake release bolt                      2 Brake release lever

### Enabling/activating the brake

- 1) Push the brake release lever (see Fig. 18, arrow) up until the brake release bolts engage.
  - 2) Turn the control unit off and on again.
- The driving function is activated.

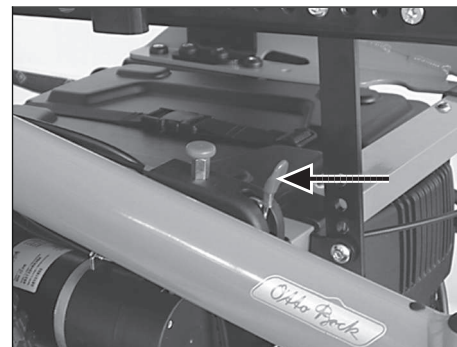


Fig. 18 Enabling the brake

## 6.7 Batteries/charging process

### 6.7.1 Safety Instructions

**NOTICE**

**Unauthorised battery replacement**

Risk of battery damage

- ▶ Replacing the battery or modifying the battery installation position may only be performed by authorised personnel trained by Otto Bock.



- The characteristic curve of the battery charger established at the factory matches the batteries included in the scope of delivery and may not be altered independently.

### 6.7.2 General

The standard version of the power wheelchair is equipped with 2 maintenance-free gel batteries with a capacity of **63 Ah**.

The batteries are located beneath the wheelchair seat in a battery drawer. If the power wheelchair is not equipped with a drive wheel suspension, then the batteries are located in a tray.

An option is also available to equip the power wheelchair with two lead-acid batteries with a capacity of **60 Ah**.

The range of the power wheelchair is determined by the battery capacity. The following factors influence battery capacity:

- Ambient temperature
- Age of the batteries
- Driving load
- Charging method

Extended driving at the lower end of the battery indicator results in deep discharge which causes battery damage.

When driving at a low charge condition, the power wheelchair control unit switches to a creeping speed which saves power.

### 6.7.3 Battery charging information

The following information should be observed for an optimal charging cycle:

- The batteries can be charged at any time, regardless of the remaining battery capacity.
- It takes about **10 hours** until a discharged battery (only 1 flashing segment) is completely charged. When the charging process is complete, the battery charger can remain connected to the power wheelchair with no risk of overcharging or damaging the battery. The battery charger features a programmed recharging phase that will maintain the battery capacity at the level that has been reached.
- If the power wheelchair is used every day, the battery should be charged every night.
- Never discharge the batteries completely (deep discharge).

- The batteries will gradually discharge if the wheelchair is not used for extended periods of time. If the power wheelchair is not used for an extended period, the batteries should be charged **1 x per week** to maintain their capacity.
- The fuse should be removed if the wheelchair is not used for more than 3 days.
- The power wheelchair control unit must be switched off while the batteries are charging to allow all of the charging current to be fed into the battery.

#### 6.7.4 Battery charger

##### NOTICE

##### Improper use of the battery charger

Risk of damage of or by the battery charger, battery damage

- ▶ Only use battery chargers from Otto Bock, which have been verified and approved by Otto Bock for use with the respective batteries (observe information on the battery charger).
- ▶ Ensure that the information on the battery charger rating plate matches the country-specific voltage of the respective mains grid.

- ▶ Only use the battery charger within the specified temperature and humidity limits.
- ▶ Place the rubber feet of the battery charger on a level surface.
- ▶ If you locate the battery charger near a window, protect it from direct sunlight.
- ▶ Avoid overheating of the battery charger. Ensure that the ventilation slits on the back of the battery charger are not covered during the charging process.
- ▶ Switch the power wheelchair control unit off during the charging process so that all of the charging current is fed into the battery.
- ▶ Avoid dust and dirt.
- ▶ Only clean the battery charger with a dry cloth.

The battery charger is designed for maintenance-free and low-maintenance batteries.

Please see the instructions for use supplied with the battery charger for further details on use and on the LED indicators.

### 6.7.5 Charging the battery

**⚠ WARNING**

**Discharge of explosive gases during battery charging**

Risk of injury due to fire or explosion

- ▶ Ensure sufficient ventilation in enclosed spaces.
- ▶ Don't smoke or light fires.
- ▶ Sparks must be avoided.
- ▶ Do not cover the ventilation slits in the case.
- ▶ Only use battery chargers which have been verified and approved by Otto Bock for use with the respective batteries (observe information on the battery charger). Non-observance may result in explosion of the battery, resulting in a health hazard through contact with the battery acid.
- ▶ Follow the battery manufacturer safety instructions.
- ▶ Wear protective goggles.

**⚠ WARNING**

**Sparks**

Risk of injury due to fire or explosion

- ▶ Switch the battery charger off and disconnect the mains plug before you disconnect the battery.

**NOTICE**

**Improper charging**

Risk of battery damage

- ▶ Avoid deep-discharge of the battery. Otto Bock does not provide any warranty for damage due to deep discharge.
- ▶ Charge the battery as soon as possible if the last three segments of the "Battery Capacity" LED indicator are flashing.
- ▶ Charge the batteries weekly if the power wheelchair is not used for an extended period of time.

- 1) Turn the control unit on the power wheelchair off.
- 2) Plug the battery charger plug into the charging/programming receptacle on the power wheelchair control panel (see Fig. 19).
- 3) Connect the battery charger to the mains plug and turn it on.

- The charging process starts automatically, and the battery charge condition is indicated by the LED indicator on the control panel and on the battery charger.
- 4) Turn the battery charger off when the charging process is complete.
  - 5) Remove the battery charger mains plug.
  - 6) Disconnect the battery charger plug from the control panel.
  - 7) Turn the power wheelchair control unit on.
- The power wheelchair is ready to use.



Fig. 19 Charging / programming receptacle on the control panel

## 6.8 Power seat functions

The power wheelchair can be equipped with a range of optional power seat functions.

### 6.8.1 Safety Instructions

**⚠ WARNING**

**Exposed pinch points in the seat adjustment and lifting areas**

Risk of pinching, crushing of limbs

- ▶ Note that when power seat options are used, inherent pinch and shear points are located between the seat frame and the power wheelchair frame.
- ▶ Ensure that no body parts, such as hands or feet, are in the danger area while power seat options are used.
- ▶ Ensure that no interfering objects, such as clothing or other obstacles, are in the danger area while power seat options are used.

**⚠ WARNING**

**Overloading of the actuators**

Risk of falling, tipping, pinching, crushing of limbs

- ▶ Avoid overloading the actuators. Overloading may cause the spindle nut to break, causing the seat to sag or the backrest to flip back suddenly.

**NOTICE**

**Improper use of power seat options**

Risk of damage to the product

- ▶ When using power seat options, note that the seat function actuators are not designed for continuous use, only for short-term use under limited loads (10% load, 90% idle time).
- ▶ Observe the following guidelines: At maximum load capacity, 10 seconds of activation time must be followed by approx. 90 seconds of idle time. The power seat functions are considered independently of the driving function for this purpose.
- ▶ Only activate the power seat functions if no fault or error is present.

**6.8.2 Power seat height adjustment**

**⚠ WARNING**

**Improper use of the seat height adjustment feature**

Risk of falling, tipping

- ▶ A maximum load of **130 kg** may be applied to the seat with seat height adjustment function.
- ▶ Put the belt system (lap belt, four-point belt) on and do not lean past the seat surface while the seat is raised.

- ▶ Only use the seat height adjustment feature with the backrest in the upright position.
- ▶ Only use the seat height adjustment feature on level ground.
- ▶ Note that the field of vision is limited when driving with the seat raised.
- ▶ Only drive for short distances with the seat raised, e.g. to manoeuvre.
- ▶ Note that creep speed is automatically activated when the seat height adjustment function is used. If this is not the case, contact a specialist dealer immediately. Only use the power wheelchair with the seat height adjustment in its lowest position until the fault is repaired.

**NOTICE****Lack of maintenance of the seat height adjustment feature**

Risk of damage to the power wheelchair

- ▶ Inspect the seat height adjustment feature for visible signs of damage at least 1 x per month and ensure all screw connections are tight.

- ▶ Check for correct tire pressure.

**NOTICE****Risk of transportation damage.**

Risk of damage to the power wheelchair

- ▶ Always lower the seat height adjustment feature fully for loading or transportation.

The power wheelchair can be equipped with a power seat height adjustment feature. The seat height adjustment feature increases the height of the seat above the drive unit by up to **40 cm (15 in)**.



Fig. 20 Seat with raised seat height adjustment feature

The driving function remains available even when the seat is raised. The speed is reduced (creep speed) as soon as the seat leaves the lowest position, because the power wheelchair is less resistant to tipping. This is indicated on the control panel by the snail symbol on the LCD display:

Display	Information
	Creeping speed

### 6.8.3 Power seat tilt

The power wheelchair can be equipped with a power seat tilt function.

The power seat tilt function allows the seat to be tilted, for example to relieve pressure.

The power seat tilt is available in 3 different versions:

- Power seat tilt up to **20°**
- Power seat tilt up to **30°**
- Power seat tilt up to **45°**

The seat can be tilted back continuously up to the angle specified above.



Fig. 21 Power seat tilt

### 6.8.4 Power back angle adjustment

The power wheelchair with standard or contour seat can be equipped with a power back angle adjustment feature.

The power back angle adjustment feature allows for continuous tilting of the backrest up to **30°**.



Fig. 22 Power back angle adjustment

### 6.8.5 Power footrests

To avoid permanent pressure points or to ensure anti-shock support, the power wheelchair can be equipped with power adjustable footrests. The footrests can be activated individually or at the same time, depending on the configuration.

The footplates can be flipped up to increase the entry and exit area.



Fig. 23 Power footrest flipped up

### 6.8.6 Controlling power seat functions

- Holding the [Mode] button (approx. 2 seconds; see Fig. 14) activates control of the first power seat function, e.g. the power back angle adjustment or seat tilt.
- The LCD display indicates the currently selected seat function (see following chapter "Joystick and Display Functions").
- To switch between the various seat functions, press the [Mode] button briefly or move the joystick to the right.
- Once a seat function is selected, it is activated by moving the joystick forward or backward.



- The electric motor moves the seat function as long as the joystick is deflected, and stops at the end positions.
- Holding the [Mode] button again (approx. 2 seconds; see Fig. 14) deactivates the seat function in the selected position. The driving function is available again, and the speed level indicator is lit.

### 6.8.7 Joystick and display functions

The following power seat functions can be controlled with the joystick:

Display	Seat function	Joystick* deflection
	Power seat height adjustment	Forward: Seat surface moves up Back: Seat surface moves down
	Power seat tilt**	Back: Seat slowly tips back Forward: Seat slowly tips toward the horizontal position
	Power back angle adjustment	Forward: Backrest tilts forward Back: Backrest tilts backward
	Power footrest - left	Forward: left footrest moves forward Back: Left footrest moves back
	Power footrest - right	Forward: Right footrest moves forward Back: Right footrest moves back
	Power footrests, coupled	Forward: Both footrests move forward Back: Both footrests move back

\* Deflection direction can be modified by the specialist dealer; \*\* Seat surface and backrest

## 6.9 Manual seat functions

The power wheelchair can be equipped with a range of optional manual seat functions.

### 6.9.1 Safety Instructions

#### **WARNING**

##### **Exposed pinch points in the seat adjustment area**

Risk of pinching, crushing of limbs

- ▶ Note that when manual seat options are used, inherent pinch and shear points are located between the seat frame and the power wheelchair frame.
- ▶ Ensure that no body parts, such as hands or feet, are in the danger area while manual seat options are used.
- ▶ Ensure that no interfering objects, such as clothing or other obstacles, are in the danger area while manual seat options are used.

### 6.9.2 Manual seat tilt

#### **WARNING**

##### **Unintentional lowering of the seat tilt**

Risk of pinching, crushing of limbs

- ▶ Note that the seat can drop suddenly if the release lever is operated while the seat is tilted.

The power wheelchair with standard or contour seat can be equipped with a manual seat tilt function.

The manual seat tilt function allows the seat to be tilted, for example to relief pressure. The seat can be tilted back continuously by up to **20°**.

#### **Tilting the seat back**

- 1) Activate the release lever on the armrest (see Fig. 24).
  - 2) Move the seat to the desired angle.
  - 3) Let go of the release lever.
- The seat is tilted back.

The seat is easier to tilt if the backrest is tilted back.



Fig. 24 Tilting the seat manually

### 6.9.3 Manual back angle adjustment

The power wheelchair with standard or contour seat can be equipped with a manual back angle adjustment function.

The manual back angle adjustment function allows for continuous tilting of the backrest up to 20°.

#### Adjusting the back angle

- 1) Activate the release lever on the armrest (see Fig. 25).
- 2) Move the backrest to the desired position.
- 3) Let go of the release lever.

→ The backrest is adjusted.



Fig. 25 Adjusting the backrest manually

### 6.9.4 Manual elevating footrests

The power wheelchair can be equipped with manual elevating footrests.

The manual elevating footrests make it possible to prevent a constant pressure load or to provide anti-shock support.

#### Swivelling the footrest

- 1) Activate the release lever on the footrest (see Fig. 26).
- 2) Move the footrest to the desired position.
- 3) Let go of the release lever.

→ The footrest is adjusted.

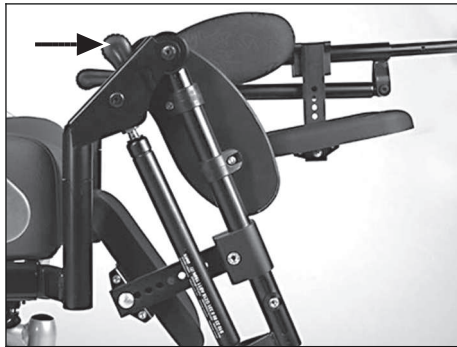


Fig. 26 Manual elevating footrest

## 6.10 Additional seat options

The power wheelchair can be equipped with a range of other seat options.

### 6.10.1 Contour seat

Compared to the standard seat, the contour seat provides the user with improved comfort and lateral support.



Fig. 27 Contour seat

### 6.10.2 Recaro® seat

#### **⚠ WARNING**

#### **Incorrect Recaro® Seat settings**

Risk of falling, tipping

- ▶ Note that the maximum backrest angle is **30°** while standing and **20°** while driving.

The power wheelchair can be equipped with various Recaro® seat models.

They provide individually adjustable, comprehensive seating comfort.

### Folding the backrest forward (reducing the transportation size)

- 1) Pull the release lever on the Recaro® seat (see Fig. 5, item 1) up. The release lever is located on the side of the backrest.
  - 2) Fold the backrest forward.
  - 3) Let go of the release handle.
- The backrest is folded forward.

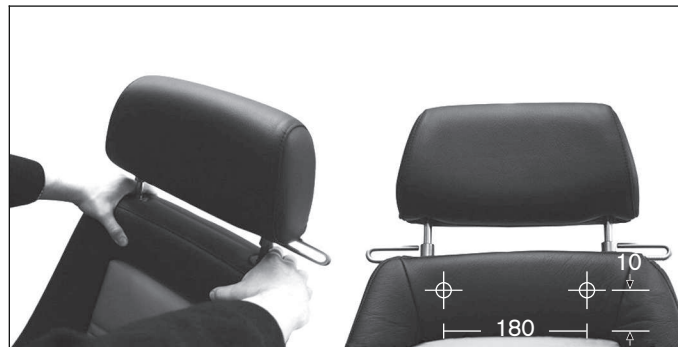
### Folding the backrest up

- ▶ The backrest is folded up, the release lever is securely engaged.
- The backrest is folded up.

### Removing the headrest

Two persons are required to remove the headrest.

- 1) 1st person: Find the release points on the Recaro® seat below the cover (see Fig. 28) and push them at the same time.
- 2) 2nd person: Pull the headrest up and out.



**Fig. 28** Image showing the release points

### Removing the Recaro® from the mobility base

- 1) Pull the release strap located below the seat surface forward and hold onto it.
  - 2) Release the left and right bolts which lock the seat to the frame.
  - 3) To release the rear seat clip from the bracket, tip and push the seat back a bit.
  - 4) Remove the Recaro® seat.
- The Recaro® has been removed.

## Attaching the Recaro® seat to the mobility base

### CAUTION

#### Recaro® seat not locked in place

Risk of tipping

- ▶ During installation of the Recaro seat, ensure that the seat clip is engaged firmly in the clips.
- ▶ Ensure that the front locking bolts are engaged up to the key ring.

- 1) Set the back edge of the Recaro® seat onto the end of the seat frame.
  - 2) Push the seat forward until the rear seat clip protrudes into the bracket.
  - 3) Tip the seat forward until the locking bolts engage with the seat frame.
- The Recaro® seat is installed.

## Adjusting the Recaro® seat

### INFORMATION

To adjust the back angle of the Recaro® seat: see Page 17.

## Adjusting the lateral supports in the lumbar region

### INFORMATION

This information only applies to the Recaro® LT model.

- 1) Turn the knob on the side of the backrest forward.
  - Both lateral supports are moved closer together.
- 2) Turn the knob on the side of the backrest backwards.
  - Both lateral supports are moved apart.

## Adjusting the pads

The seat surfaces X and W are equipped with a pull-out pad at the front of the seat surface. The adjustment lever for the pad is located below the seat surface.

- 1) Pull the pad adjustment lever up and hold it there.
  - 2) Move the pad to the desired position.
  - 3) Release the adjustment lever and let it engage.
- The adjustment lever is in a safe position if it engages audibly and has returned to its initial position.

### Adjusting the headrest

The height and tilt of the headrest are adjustable.

#### 6.10.3 Headrest

Otto Bock offers the option of equipping the standard and contour seats with a headrest.

The bracket for attaching the headrest mounting kit is attached with an adapter which is mounted to the back frame.

#### INFORMATION

See the manufacturer documentation for information on attaching the mounting kit.



Fig. 29 Headrest with mounting kit

### 6.11 Control unit accessories

The power wheelchair can be equipped with the following optional control unit accessories.

#### 6.11.1 Attendant control

The power wheelchair can be equipped with an optional separate control panel for attendant operation. The separate control panel is height-adjustable and removable.

For the standard and contour seats, the attendant control is located on the backrest cross tube. For the Recaro® seat, the attendant control is located on the headrest.



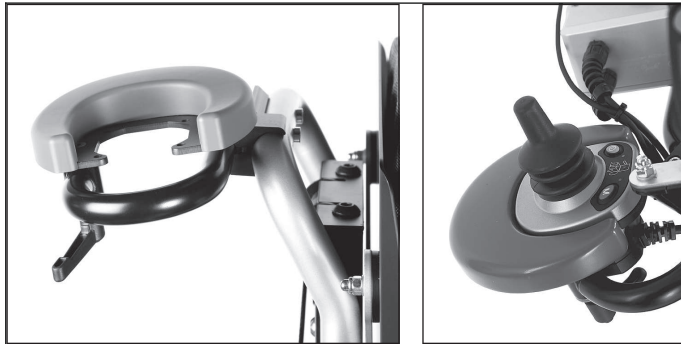


Fig. 30 Attaching the attendant control

### Functional overview

The attendant uses the attendant control to operate the driving function and the power seat functions.

The module is connected in conjunction with the control panel or as an individual input device.

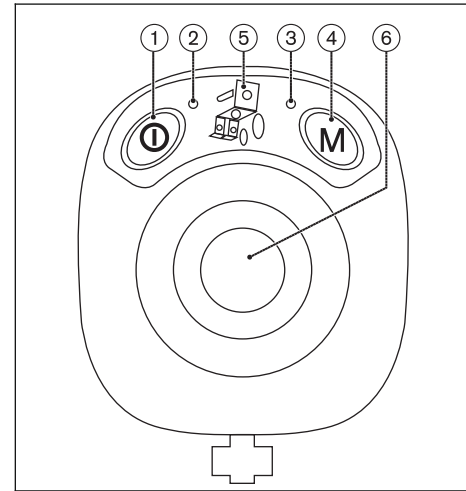



Fig. 31 Attendant control

- |   |                                  |   |  |
|---|----------------------------------|---|--|
| 1 | [On/Off] Button                  | 4 | [Mode] Button                                |
| 2 | Battery capacity (LED indicator) | 5 | Selected power seat function (LED indicator) |
| 3 | Mode (LED indicator)             | 6 | Joystick                                     |

### [On/Off] Button

The button is used for switching the power wheelchair on, for activating the drive-away lock and for switching the wheelchair off.

Display	Information
	Attendant control activated

### Battery capacity (LED indicator)

The LED lights up when the unit is on.

Colour and flash codes provide information on the current battery capacity status:

LED	Information
Green is lit	Battery capacity > 70%
Orange is lit	Battery capacity 30%-70%
Red is lit	Battery capacity < 30%
Red is flashing	Battery deep discharge Charge as soon as possible
Green is flashing	Battery over-voltage (e.g. after driving downhill) Continue driving slowly

LED	Information
Red/Orange/Green flashing alternately	Charging process / drive away lock

### [Mode] Button

Switch between speed level 1 and 2 by pressing the button briefly.

Push and hold the button (at least 2 seconds) to switch the control unit to the power seat functions.

### Mode (LED indicator)





The LED indicates the speed level status and system faults using 3 colour LEDs and various flash codes:

LED	Information
Green is lit	Speed level 1
Orange is lit	Speed level 2
Red – flashing 1x/2x/3x/4x/5x	Fault (see Page 89)
Off	LED display switched to seat functions

### Selected power seat function (LED indicator)

The power seat functions are accessed by pressing and holding the "M" button (approx. 2 seconds).

The currently selected seat function is indicated on the control panel display (see Page 44 et. seq.) and by the following LEDs on the attendant control:

Display	Information
	Power back angle adjustment
	Power seat tilt
	Power seat height adjustment
	Coupled power seat adjustment (backrest and seat tilt)

Moving the joystick right switches between the different seat functions. The respective function can be extended or retracted by moving the joystick forward or back (see Page 44 et. seq.).

The corresponding LEDs flash if an error occurs (see Page 89).

### Joystick

The joystick is used for driving. The further it is moved away from the centre position, the faster the power wheelchair will drive in this direction.

If the seat functions are accessed with the [Mode] button, then the joystick is used to select and activate the seat functions (see Page 44 et. seq.).

#### 6.11.2 Push-button module

##### **WARNING**

##### **Risk of uncontrolled driving behaviour**

Risk of falling, tipping, collision with persons or nearby objects





- ▶ Note that no changes of any kind may be made to the push-button module by the user. Programming of the push-button module may only be performed by trained, authorised personnel.




Power wheelchairs with the enAble50 control unit can be equipped with an optional push-button module.

The push button module lets the user select additional power seat functions directly during normal driving operation.

### Available functions

Depending on the power wheelchair model and programming of the push button module, up to 5 power seat functions (see Fig. 32, item 1) can be controlled during normal driving operation:

Display	Information
	Power seat height adjustment
	Power seat tilt
	Power back angle adjustment
	Power footrest left

Display	Information
	Power footrest right
	Power footrests, coupled
	Other special functions (combinations) S1 – S5

### Push button functions

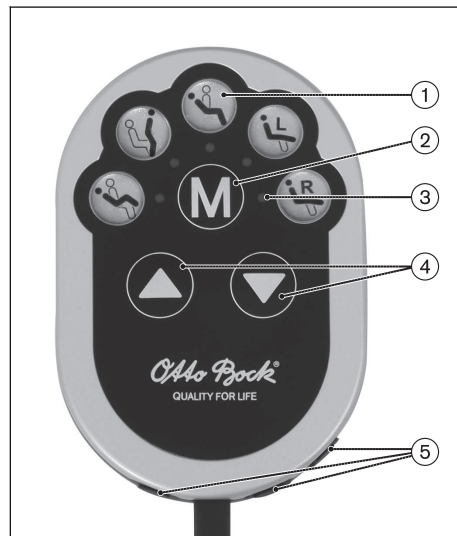
- The [Mode] button (see Fig. 32, item 2) is used to toggle among the different functions (1-2-3-4-5-1-2-...).
- The blue LED (see Fig. 32, item 3) indicates the selected power function.
- The respective function is activated (function up/down) using the buttons [Selected function up] / [Selected function down] (see Fig. 32, item 4).

**INFORMATION**

The function of the [Selected function up/down] buttons can be programmed according to the user's wishes (button [Selected function up] = function up or function down - depending on programming).

In addition, 3 Buddy-Buttons can be connected to the push button module and positioned at will (see Page 62).

The Buddy Buttons perform the same functions as the [Mode] button and the [Selected function up] / [Selected function down] buttons (see Fig. 32, items 2/4). Symbols on the back of the push button module indicate the corresponding functions.



**Fig. 32 Push-button module**

- 1 Available power functions
- 2 [Mode] Button
- 3 Selected function (LED indicator)
- 4 [Selected function up/down] Buttons (see information box)
- 5 Stereo plug for the connection of Buddy buttons

### 6.11.3 Adapter cable for Piko or Buddy button

#### INFORMATION

For additional information on user specific adjustment of this function: see front inside cover.

Power wheelchairs with the enAble50 control unit and push-button module can be equipped with an optional 2-way adapter cable.

- The respective connected Piko or Buddy button may be used to control power seat functions as well as other functions (see inside front cover). These functions are specified when the power wheelchair is ordered.
- The Piko and Buddy button switches are programmed with a so-called toggle function. The selected function is activated as long as the button is pressed. The selected function is activated in the opposite direction if the button is released and pushed again.
- For example, if the power back angle adjustment is activated, the backrest tilts back as long as the button is pressed the first time around. Activating this function again causes the backrest to tilt forward as long as the button is pushed.

### 6.11.4 External odometer

The power wheelchair can be equipped with an external odometer.

It is connected to the control panel guard.

Additional information on using it can be found in the manufacturer's instructions for use.



Fig. 33 External odometer

## 6.12 Additional options

### 6.12.1 Control panel holder

#### Swing-away control panel holder

Otto Bock offers the option of equipping the power wheelchair with a removable control panel mounted on a swing-away control panel holder. This control panel holder makes it possible to drive the power wheelchair under a table or closer to an object.

The control panel holder can be rotated up to the armrest.

- 1) Apply slight pressure to push the control panel holder to the side.
  - The pivot element is unlocked.
- 2) Swing the control panel holder away to the side.  
**INFORMATION The pivot element locks in place again when the holder is rotated back to the original position.**



Fig. 34 Swing-away control panel holder with removable control panel

#### Height-adjustable control panel holder

The power wheelchair can be equipped with a special control panel holder which allows for height adjustment of the control panel.

- 1) Loosen the mounting screw.
- 2) Adjust the height of the control panel holder.
- 3) Tighten the mounting screw.



Fig. 35 Height-adjustable control panel holder

### 6.12.2 Lights

The power wheelchair can be equipped with a light kit.

The warning flashers, the right and left direction indicators, and the light are operated via the control panel.

The light kit consists of 2 rear lights with integrated direction indicators and 2 front lights, each consisting of an LED headlight and a blinker (see Fig. 36).

To replace broken lights: see Page 80.



Fig. 36 Headlights

### 6.12.3 Belts / belt systems

#### Lap belt

#### CAUTION

#### Insufficient support of the seated person

Risk of falling out of the power wheelchair

- ▶ Always wear the safety belt / lap belt when driving in public.



**⚠ CAUTION****Putting the lap belt on incorrectly**

Risk of pressure points, constriction

- ▶ Ensure that the buckle lies in the middle of the body.
- ▶ Ensure that the lap belt is not too tight against the body.
- ▶ Remove objects or clothing which get caught.

The power wheelchair can be equipped with a lap belt. The lap belt provides additional support and keeps the user from sliding out of the seat.

**Putting the lap belt on**

- > The user sits upright or lies in the power wheelchair.
    - 1) Push the 2 halves together until the buckle engages with an audible click.
    - 2) Pull to check that it is secure.
- The belt is put on.



Fig. 37 Putting the lap belt on

**Opening the lap belt**

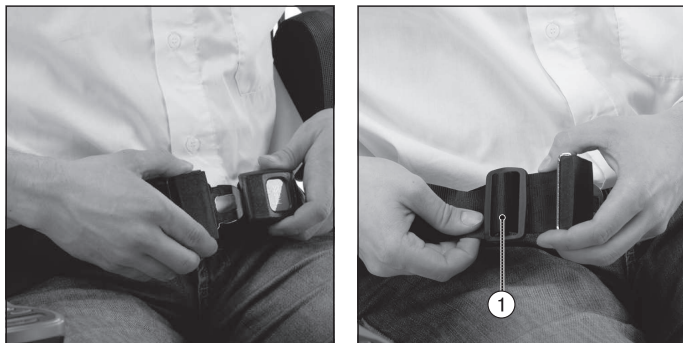
- ▶ Press the red release button.
- The buckle is open and the belt can be removed.

**Adjusting the belt length**

The belt length can be adjusted on both sides. Excess belt length is taken up by the plastic slider.

- > The user sits upright or lies in the power wheelchair.
  - 1) Close the belt.
  - 2) Position the 2 buckle halves in the middle of the body.

- 3) Position the respective half of the buckle at a right angle (see Fig. 38, item 1).
  - 4) Slide the 2 halves of the closure to the desired position.
  - 5) Release the respective half of the buckle.
- The belt length is adjusted.



**Fig. 38** Adjusting the lap belt

1 Buckle

#### Four-point belt/chest belt

**⚠ CAUTION**

**Insufficient support of the seated person**

Risk of falling out of the power wheelchair

- ▶ When driving in public areas, always wear the four-point or chest belt for additional support.
- ▶ Under no circumstances may the belt system be used as part of a restraint system for transportation in a wheelchair accessible vehicle.

**⚠ CAUTION**

**Putting the four point belt on incorrectly**

Risk of pressure points, constriction

- ▶ Ensure that the bottom belt is not too tight between the lap belt and the thigh.
- ▶ Ensure that the buckle lies in the middle of the body.
- ▶ Ensure that the shoulder belt lies against the chest equally on both sides and is not too tight.
- ▶ Remove objects or clothing which get caught.

The power wheelchair may be equipped with a four-point or chest belt.

The four-point or chest belt makes it possible to secure patients in the power wheelchair.

#### Putting the four point/chest belt on

- > The user sits upright or lies in the power wheelchair.
- 1) Close all buckles so that they engage with an audible click.
- 2) Pull to check that it is secure.
- The belt is put on.

#### Adjusting the belt length

- > The user sits upright or lies in the power wheelchair.
- 1) Close the belt.
- 2) To lengthen: Turn the length adjustment buckle by **90°** and pull.
- 3) Turn the buckle back to the original position when the belt length is correct.
- 4) To shorten: Pull on the free belt end.
- The belt length is adjusted.

#### 6.12.4 Suspension (steering casters/drive wheels)

The power wheelchair may be equipped with a suspension system.

A spring and shock absorber element on each of the two steering casters increases driver comfort and improves traction, especially on uneven surfaces.

The suspension effect is improved even more by a drive wheel suspension.

If the power wheelchair is equipped with a drive wheel suspension, then the batteries are stored in a drawer.



Fig. 39 Steering caster suspension



Fig. 40 Drive wheel suspension

### 6.12.5 Locking the steering casters

The power wheelchair may be equipped with a steering caster lock.

These serve to lock the steering casters in the forward direction, so that turning is no longer possible. Having the power wheelchair drive in a perfectly straight line increases safety when driving on ramps or using elevators.

#### Engaging the steering caster lock

- ▶ Push the folding lever on the front of the frame to the side a bit until it disengages from the centre position.

- The bolt at the bottom edge of the front frame extends and engages with the front fork as soon as the power wheelchair faces straight ahead (see Fig. 41, left).
- The steering casters are locked. The power wheelchair drives straight in both forward and reverse.

#### Disengaging the steering caster lock

- ▶ Turn the folding lever to the middle position until it engages.
- The lever is in the unlocked position (see Fig. 41, right).
- The steering casters are unlocked and can swivel freely again.

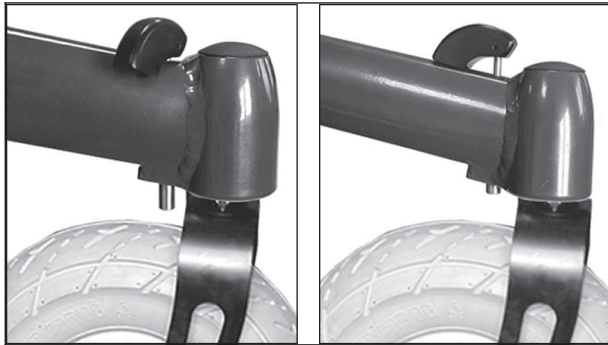


Fig. 41 Steering caster lock, engaged and disengaged

### 6.12.6 Rear bumper

The power wheelchair may be equipped with a bumper. The bumper provides increased user protection in case of a collision.



Fig. 42 Rear bumper

### 6.12.7 Overview of additional options

#### INFORMATION

You can find these and other optional add-on components on the order form and in the wheelchair accessories catalogue.

The power wheelchair may be equipped with additional options:

- Curb climbing assist: To overcome curbs and steps with a maximum height of **100 mm**
- Puncture-proof tires: Solid rubber tires

- Seating shell adapter: To attach special seating shells; control panel holder for seating shells also available
- Armrest accessories: Special adapters for the armrests in our accessories catalogue
- Joystick accessories: Tetra fork; STICK S80; softball; golfball, flexible joystick stem
- Control panel guard: Metal guard for impact protection
- Crutch holder
- Folding rearview mirror
- Tray
- Attachable desktop
- Accessory box, backpack, cellphone pocket

## 6.13 Disassembly/transport

### 6.13.1 Safety Instructions

 **WARNING**

**Lifting the power wheelchair incorrectly**

Risk of falling, tipping, damage to the power wheelchair

- ▶ Only use sufficiently large hoisting devices to transport the power wheelchair (see the "Technical Data" chapter for the weight of the power wheelchair).

- ▶ Attendants may only lift the power wheelchair by solidly attached components. Footrests or armrests may not be used as lifting points.

 **WARNING**

**Improper transportation in aircraft**

Risk of injury due to fire or explosion, battery damage, short circuit

- ▶ Follow the IATA (International Air Transport Association) rules when transporting the power wheelchair in an aircraft. Before checking the power wheelchair as baggage, the fuse must always be removed and the battery contacts insulated to protect them against a short circuit.
- ▶ Note that those batteries in particular which may leak or will not be transported upright must be removed and packaged so they cannot leak or short circuit.
- ▶ For more information please visit the [www.iata.org](http://www.iata.org) website. Otto Bock recommends contacting the airline directly before every flight to obtain information regarding special transport regulations.

**⚠ CAUTION****Securing the power wheelchair insufficiently during transport**

Risk of pinching, crushing, blows to body parts

- ▶ During transportation in vehicles, on lifting platforms or in lifts, turn the control unit of the power wheelchair off and lock the brake.
- ▶ The power wheelchair must be secured in accordance with the regulations for the transport device.
- ▶ During transport in another vehicle, the power wheelchair must be secured sufficiently with cargo straps. Only attach the cargo straps to the corresponding transportation eyelets and specified tie-down points.

**6.13.2 Reducing the transportation size**

- 1) Flip the footrests up.
- 2) Remove the side panels.
- 3) Fold the backrest forward and onto the seat surface.



Fig. 43 Power wheelchair with reduced transportation size

**Folding down the backrest without back angle adjustment**

- 1) Pull on the backrest release strap.
- 2) Remove the side panels.
- 3) Pull the release strap back.
- 4) Manually fold the backrest forward and onto the seat surface.



Fig. 44 Folding the backrest down

#### Folding down the backrest with back angle adjustment

- 1) Remove the side panels.
- 2) Push the lever (see Fig. 45, item 2) on the back of the backrest up and unlock the cross bolt (see Fig. 45, item 1) at the bottom end of the gas compression spring or actuator.
- 3) Remove the cross bolt from the bracket.
- 4) Fold the backrest forward and onto the seat surface.

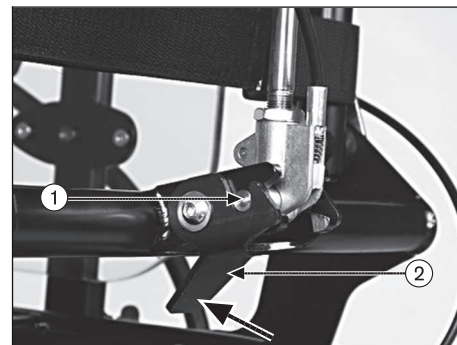


Fig. 45 Removing the cross bolt

- |   |            |   |       |
|---|------------|---|-------|
| 1 | Cross bolt | 2 | Lever |
|---|------------|---|-------|

#### 6.13.3 Reducing the transportation size – Recaro® seat

To remove/install the Recaro® seat on the mobility base and to fold the backrest down: see Page 53.

#### 6.13.4 Preparing for transport

- 1) Position the power wheelchair in its transport location.
- 2) Turn the control unit off.



- 3) Engage the brake.
- 4) Use the eyebolts and cargo straps to attach the power wheelchair to the means of transportation.

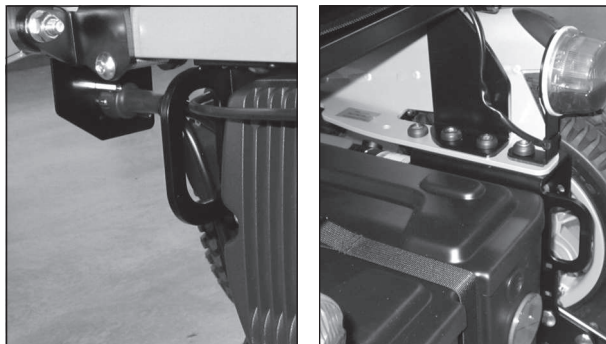


Fig. 46 Front (left) and rear (right) eyebolts

## 6.14 Use in a wheelchair accessible vehicle

### 6.14.1 Safety Instructions

**⚠ WARNING**

**Use as a seat in a wheelchair accessible vehicle**

Risk of falling out of the power wheelchair, severe injury in case of accident

- ▶ Always use the seats and restraints in the wheelchair accessible vehicle first. This is the only way to provide optimal protection for the occupants in case of accident.
- ▶ Never transport more than one person in the power wheelchair.
- ▶ Always ensure that the seat tilt mechanism is lowered when using the power wheelchair in a wheelchair accessible vehicle.

**⚠ WARNING**

**Use of the belt system as a restraint system in a wheelchair accessible vehicle is forbidden**

Risk of falling out of the power wheelchair, severe injury in case of accident

- ▶ Under no circumstances may the belt system be used as part of a restraint system for transportation in a wheelchair accessible vehicle.
- ▶ Note that the belt system is only intended to help support the user sitting in the power wheelchair.

### 6.14.2 Permitted use

The power wheelchair may be used for transportation in a wheelchair accessible vehicle, if a suitable restraint system is used. The safety components (such as lap belts) sold by Otto Bock only serve to further restrain the person sitting in the power wheelchair.

For more information on the use of the power wheelchair for transportation in wheelchair accessible vehicles, please refer to our brochure "Using your Wheelchair/ Mobility Base with Seating Shell or Buggy for Transportation in Wheelchair Accessible Vehicles", article no. 646D158.

### 6.14.3 Necessary accessories

An anchor kit is required to use the power wheelchair as a seat in a wheelchair accessible vehicle. This kit is a prerequisite for the AMF anchor point system. The authorised personnel which fit the wheelchair can provide more information.

The weight of the person being transported is limited to **max. 100 kg (220 lbs)**.

## 6.15 Care

### 6.15.1 Safety Instructions

#### NOTICE

#### Incorrect cleaning

Risk of damage to the product, especially to the electronics

- ▶ Water must not come into direct contact with the electronics, motor or battery under any circumstances.
- ▶ Never use a water jet or high-pressure cleaning apparatus to clean the power wheelchair.
- ▶ Use a cloth or sponge for cleaning.
- ▶ To avoid corrosion, don't use any aggressive cleaning agents or solvents.
- ▶ Check the driving behaviour of the power wheelchair after cleaning it.

#### INFORMATION

Piston rods do not require lubrication. They are maintenance-free.

### 6.15.2 Cleaning

The power wheelchair must be cleaned regularly, depending on the amount of use and the degree of soiling.

- Clean the control panel, battery charger, armrest and trim components with a damp cloth and mild cleaning solution.
- Use a dry brush to clean the seat and back upholstery as well as the seat cushion.
- Use a damp plastic brush to clean the wheels and frame.

### 6.15.3 Disinfection

- ▶ Wipe all parts of the wheelchair down with disinfectant.

#### Important information about disinfecting

- Water based disinfectants should be used. Observe the usage information provided by the manufacturer.
- Prior to disinfection, clean the seat and back upholstery, seat cushion, control panel, and armrest.

## 7 Maintenance / repair

### 7.1 Safety Instructions

 **WARNING**

**Improper maintenance, repair, or adjustment work**

Risk of falling, tipping, or incorrect user posture, damage to the product

- ▶ The power wheelchair may only be serviced by authorised personnel trained by Otto Bock. The functionality and operating safety of the power wheelchair must be verified and a service performed at least **1 x per year**.
- ▶ In case of frequent user changes (children and growing youth) or changing clinical pictures, the power wheelchair should be inspected, adjusted, and serviced **1 x every six months**.
- ▶ Repairs and adjustments to the brake may only be made by authorised personnel trained by Otto Bock. Incorrect settings can lead to a loss of braking power.

**NOTICE**

**Failure to inspect important wheelchair features**

Risk of damage to the product

- ▶ Check all power seat options for visual damage and ensure that screw connections are tight at least **1 x per month**.
- ▶ Check for proper tire pressure. The correct tire pressure is printed on the tire casing and listed in the "Technical Data" chapter.

**7.2 Maintenance**

For the components in the maintenance table below, special attention must be paid to the following points:

- Functionality
- Adjustment
- Damage, deformation
- Screw connections

### 7.2.1 Maintenance intervals

The functions described below must be checked by the user or an attendant at the specified intervals:

Components	Activity	Before every trip	Weekly	Monthly
Drive wheels	Wheels must rotate freely and without axial run out			X
	Central nut on the drive shaft tightened			X
	Check if wheel mounts are seated securely			X
	Directional stability of the entire power wheelchair	X		X
Caster wheels	Fork seated in the receiver without play			X
	Wheels must turn freely and without axial runout			X
	Mounting nut tightened			X
Seat attachment	Check whether mounting screws are fastened properly			X
	For Recaro® seat, check seat lock			X
Footrest	Check that the ratchet mechanism works properly and is seated securely			X
	Check the footplate for damage			X
Manual elevating footrest	Check that the ratchet mechanism works properly and is seated securely			X
	Check footplates for damage			X
	Visual inspection for scratches and oil leaks on the piston rod			X
Padding/belts	Proper condition of the padding			X

Components	Activity	Before every trip	Weekly	Monthly
Padding/belts	Seat belts must not be worn			X
	Check functionality of the belt buckle		X	
Tires	Air pressure (printed on the tire sidewall)			X
	Sufficient tread depth, at least 1 mm			X
	Check for damage			X
Batteries	Battery charge condition	X		
Lights	Perform a visual inspection for damage		X	
	Check that they work	X		
Electronics	No fault indications on the control panel	X		
	No faults indicated by the battery charger LEDs		X	
	Check plug connections			X
Brake	Activate brake lever while control unit is switched on	X		
	Check that the brake function is active when the brake is engaged			X
Lift seat	Visual inspection of all moving components, especially cabling - check for damage			X
	Check whether the screw connections are tight			X
Caster wheel damper	Clean and lubricate the whole module			X
	Mounting screws tightened			X

Components	Activity	Before every trip	Weekly	Monthly
Side panel and armrest	Armrest and control panel secured	X		
	Check armrest for damage		X	
Gas compression spring or actuator	Visual inspection for scratches and oil leaks on the piston rod			X

## 7.3 Repair

### 7.3.1 Replacing a defective fuse

The 80A safety fuse is located in the battery drawer (power wheelchair with drive wheel suspension) or in a battery tray (power wheelchair without drive wheel suspension).

#### Opening the battery drawer (in models with drive wheel suspension)

- > The control unit is turned off.
- 1) Pull up the release bolt.
- 2) Pull gently on the battery drawer to roll it out to the rear.
- 3) Open the clip on the strap.
- 4) Remove the battery drawer cover.



Fig. 47 Pulling on the release bolt

#### Opening the battery tray (on models without drive wheel suspension)

- > The control unit is turned off.
- 1) Lift the seat cushion from the seat plate.
- 2) Remove the seat plate.
- 3) Open the clip on the battery tray strap.
- 4) Remove the battery tray cover.





Fig. 48 Opening the strap

### Removing the fuse

- 1) Open the fuse holder cover (see Fig. 49, item 1).
- 2) Pull the fuse out of the spring contacts (see Fig. 49, item 2).

### Installing the fuse

- 1) Remove the fuse from the protective cover.
- 2) Open the fuse holder cover.
- 3) Center the fuse on the spring contacts and plug it in.
- 4) Close the fuse holder cover until you feel it engage.

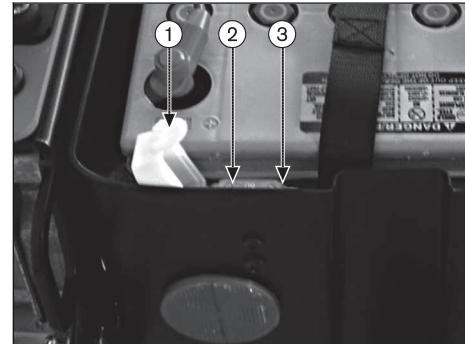


Fig. 49 Fuse in the fuse housing

- |   |                         |
|---|-------------------------|
| 1 | Fuse housing with cover |
| 2 | Fuse plugged in         |
| 3 | Fuse holder             |

### Closing the battery drawer (in models with drive wheel suspension)

- 1) Place the cover on the battery drawer.

- 2) Close the strap.
- 3) Push the drawer under the seat until the release bolt engages.  
**INFORMATION** As you close the battery drawer, ensure that the release bolt engages correctly in the intended notch.

### Closing the battery tray (on models without drive wheel suspension)

- 1) Place the cover on the battery drawer.
- 2) Close the strap.
- 3) Replace the seat plate and push it down tight.
- 4) Press the seat cushion firmly onto the hook and loop material on the seat plate.

### 7.3.2 Replacing a defective bulb

#### NOTICE

#### Penetration of moisture

Risk of damage to the light

- ▶ During installation, ensure that the plates are seated accurately in the housing.

- ▶ Ensure that the screws are seated tightly against the plate.

#### INFORMATION

Lamp housings and lamps can both be ordered from the specialist dealer.

The front lights have rubberised mounts to protect them from damage

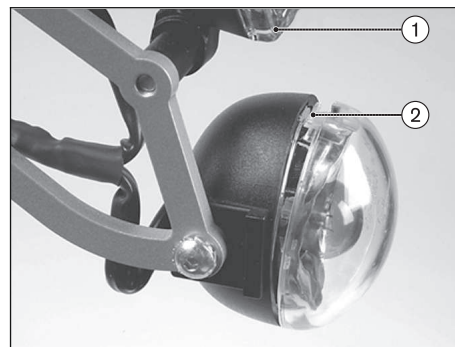


Fig. 50 Headlights

- 1 Notch (apply screwdriver here)
- 2 LED headlight

### Replacing the front direction indicator bulb

- 1) Set a small screwdriver into the notch in the direction indicator housing and flip the cover down (see Fig. 50, item 2).
- 2) Remove the cover.
- 3) Turn the defective bulb slightly to unlock it, then remove it.
- 4) Grasp the new bulb with a cloth, set it into the socket, and lock it in place.
- 5) Set the cover in place, hook it on, and press it down tightly.



Fig. 51 Replacing the front direction indicator bulb

### Replacing the LED headlight

The LED headlight is maintenance-free. If repairs are required, the authorised person who fitted the wheelchair can help.

### Replacing the bulbs in the rear light and rear direction indicator

- 1) Loosen and remove the 2 Phillips head screws
- 2) Remove the plate.
- 3) Push the bulb slightly to the right.
- 4) Pull the bulb out to the front along the left of the spring-loaded plates.
- 5) Install the new bulb.
- 6) Set the plate in place.
- 7) Install and tighten the 2 Phillips head screws.

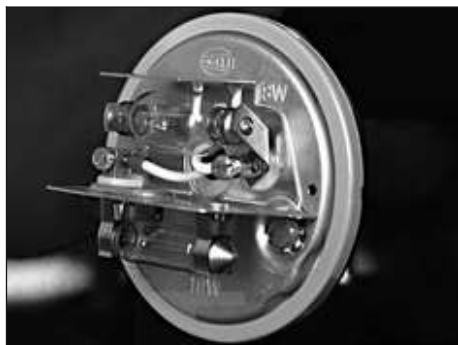


Fig. 52 Rear light without cover

### 7.3.3 Replacing the battery

Batteries may only be replaced by authorised personnel.

## 7.4 Troubleshooting

### **CAUTION**

#### **Risk of uncontrolled driving behaviour**

Risk of falling, tipping, collision with persons or nearby objects

- ▶ If any faults, defects or other hazards that can lead to personal injury are detected, the power wheelchair must be taken out of service immediately.
- ▶ Contact your authorised specialist dealer if uncontrolled movement of the power wheelchair occurs due to a malfunction.

### **INFORMATION**

In the event of communication problems in the control unit bus system, the system triggers an emergency stop in order to prevent any uncontrolled functions.

- ▶ Note that after every emergency stop, you have to turn the power wheelchair control unit on again.
- ▶ If the driving function is still not available after turning the control unit on again, activate pushing mode by releasing the brake.
- ▶ Contact a specialist dealer.

Faults are indicated on the LCD display via the "Battery Capacity" indicator on the control panel or on the attendant control (if available). The following table shows the individual notifications as well as the associated fault sources and possible causes and measures.

If the measures described here do not resolve the faults completely, contact your specialist dealer. The specialist dealer is able to read the exact error codes with a hand-held programming device and can perform a targeted system analysis.

The control unit stores a list of all faults that occur. The specialist dealer reads this information, for example during a general overhaul of the power wheelchair. The specialist dealer uses the saved data to determine future service and maintenance intervals.

#### **7.4.1 Types of notifications**

##### **Warning**







A warning indicates a status or malfunction of one or several components of the power wheelchair. The function of components that have no errors is not restricted.







For example, if the connection between the control unit and seat motor is faulty, this error will only be indicated if the user attempts to activate the motor. However, the driving function is still available.




##### **Fault**

A fault impairs one or several functions of the power wheelchair. The power wheelchair and its functions are not fully operational until the fault is resolved.

## 7.4.2 Wheelchair control unit fault overview

Display	Fault/Warning	Cause	Possible corrective action
	Controller temperature warning	Overheating due to excessive load	Cool down phase
	Motor temperature warning	Overheating due to excessive load	Cool down phase
	Joystick warning	Joystick is not in zero position when the unit is turned on	Move the joystick to zero position before turning the unit on
	Hand control device fault	Defective joystick	Contact specialist dealer
	Controller fault	Defective controller	Check all connections Contact specialist dealer
	Communication error (alternating flashing signal)	Faulty connection between the hand control device and controller; Defective cabling, software or hardware	Check cabling / plug connections Contact specialist dealer

Display	Fault/Warning	Cause	Possible corrective action
	Battery under voltage	Battery deep discharge Battery cable malfunctioning / faulty connection to the battery	Charge as soon as possible Check the connection to the battery (charge the battery if the connection is good)
	Battery over voltage	Voltage too high (after full charge and driving downhill)	Continue driving slowly
	Back angle adjustment motor fault	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer
	Seat tilt motor fault	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer
	Seat height adjustment motor fault	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer
	Power footrest motor fault	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer

Display	Fault/Warning	Cause	Possible corrective action
	Drive motor fault	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer
	Brake fault	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer
	Emergency stop	Faulty cabling or plug connections Defective actuator	Check cabling / plug connections Contact specialist dealer



### 7.4.3 Attendant control fault overview

#### Battery LED

LED	Fault/Warning	Cause	Possible corrective action
Red is flashing	Battery under voltage	Battery deep discharge	Charge as soon as possible
Green is flashing	Battery over voltage	Voltage too high (after full charge and driving downhill)	Continue driving slowly

#### Mode LED

LED	Fault/Warning	Cause	Possible corrective action
Red is flashing 1 x	Controller fault	Defective controller	Contact specialist dealer
Red is flashing 2 x	Hand control device fault	Defective joystick	Contact specialist dealer
Red is flashing 3 x	Communication error	Faulty connection between the hand control device and controller Defective cabling, software or hardware	Check cabling / plug connections Contact specialist dealer
Red is flashing 4 x	Joystick warning	Joystick is not in zero position when the unit is turned on	Move the joystick to zero position before turning the unit on
Red is flashing 5 x	Brake fault	Brake release open Defective brake	Close brake release Check brake (e.g. Bowden cable)

LED	Fault/Warning	Cause	Possible corrective action
Red is flashing 5 x	Drive motor fault	Faulty cabling or plug contacts; Defective actuator	Check cabling / plug connections Contact specialist dealer

### Seat function LEDs

LED	Fault/Warning	Cause	Possible corrective action
Backrest LED is flashing	Back angle adjustment motor fault	Faulty cabling or plug contacts Defective actuator	Check cabling / plug connections Contact specialist dealer
Seat LED is flashing	Seat tilt motor fault	Faulty cabling or plug contacts Defective actuator	Check cabling / plug connections Contact specialist dealer
2 LED's below the seat surface are flashing	Seat height adjustment motor fault	Faulty cabling or plug contacts Defective actuator	Check cabling / plug connections Contact specialist dealer
Backrest / seat surface LED is flashing	Power seat function temperature warning	Overheating due to excessive load	Cool down phase

## 8 Disposal

### 8.1 Safety Instructions

**NOTICE****Leaking battery acid**

Risk of pollution

- ▶ Note that the power wheelchair's wet cell batteries contain poisonous acid. Battery acid must not get into the sewers or soil.
- ▶ Observe the information printed on the batteries by the manufacturer.
- ▶ Note that the batteries may not be disposed of as household waste.

### 8.2 Disposal Information

To dispose of the wheelchair, return it to the specialist dealer.

Please return defective batteries to your specialist dealer when buying new ones.

All product components must be disposed of properly in accordance with national regulations.

## 9 Legal information

### 9.1 Service life

Based on market observations and the current state of technology, the manufacturer has calculated that the product can be used for a period of **5 years**, provided that it is used properly and that the service and maintenance instructions are observed. Storage times at the dealer or with paying parties are not included in this period.

However, we would like to emphasise that the product is reliable far beyond this defined period of time, provided that it is cared for and maintained properly.

If the service life is reached, the user or a responsible attendant should contact the authorised person who fitted the wheelchair or Otto Bock service (see inside or outside of rear cover for address).

### 9.2 Liability

The manufacturer's warranty applies only if the device has been used under the conditions and for the purpose described. The manufacturer recommends that the device be used and maintained according to the instructions for use.

The manufacturer is not responsible for damages caused by components and spare parts not approved by the manufacturer. Repairs must be carried out exclusively by authorised dealers or by the manufacturer.

### **9.3 CE Conformity**

This device meets the requirements of the 93 / 42 / EEC guidelines for medical devices. This device has been classified as a class I device according to the classification criteria outlined in appendix IX of the guidelines. The declaration of conformity was therefore created by Otto Bock with sole responsibility according to appendix VII of the guidelines.

### **9.4 Warranty terms**

Further information on the warranty terms can be provided by the qualified personnel supplying the wheelchair or by the Otto Bock after-sales service (addresses, see rear inside cover or rear cover).

## 10 Appendices

### 10.1 Technical data

Dimensions and weights	
Seat width	380 – 420 mm or 430 – 480 mm (15 - 16.5 in or 17 - 18.9 in)
Seat depth	380 – 460 mm or 420 – 500 mm (15 - 18 in or 16.5 - 19.7)
Seat height	450 – 600 mm (17.7 - 23.6 in)
Armrest height	240 – 360 mm (9.5 - 14.2 in)
Armrest length	260 mm (10.2 in)
Lower leg length	250 – 340 mm or 350 – 440 mm (9.8 - 13.4 in or 13.8 - 167.3 in)
Back height	450 or 550 mm (17.7 or 21.7 in)
Back angle	9/1/11/21° or 0/10/20/30°
Overall width	645 mm (25.4 in)
Overall height	1030 mm (40.5 in)
Overall length	1080 mm (42.5 in)
Weight when empty*	95 kg (210 lbs)

Dimensions and weights	
Shipping weight*	see weight when empty*, of which: Side panel: < 1 kg (2.2 lbs) Footrest (standard): approx. 1 kg (2.2 lbs) Footrest (manual elevating): 1.8 kg (4 lbs)
Maximum load capacity:	140 kg (user weight) (310 lbs)
Turning radius	1550 mm (61 in)
Caster wheel tire size	9" – 10"
Rear wheel tire size	14"
Tire pressure	See tire sidewall

\* The specified weight varies according to the selected options and model.

Electrical system	
Operating voltage	24 V

Electrical system	
Batteries -	
Wet cell	2 x 12 V; 60 Ah (C5)
Gel	2 x 12 V; 63 Ah (C5)
Lights:	
Front direction indicator	H21W 12V BAY9s maintenance-free
LED headlight	C21W; 12 V; SV8.5
Rear direction indicator	C10W; 6 V; SV8.5
Rear light	
Fuse	80 A
Battery charger	For more information, see the included battery charger instructions for use

Control unit	
Model	B500 "classic": enAble40 B500 "advanced": enAble50
Operating voltage	24 V DC
Max. output current per motor	75 A

Driving data	
Speed	6 km/h / 10 km/h (3.7 mph / 6.2 mph)
Climbing ability	17 %
Maximum obstacle height	50 mm (100 mm with curb climbing assist)
Range	approx. 35 km (22 m)
Operating temperature	-25 °C to +50 °C (-13 °F to 122 °F)
Transportation and storage temperature range	-40 °C to +65 °C (-40 °F to 149 °F)

Corrosion protection	
Corrosion protection	Coated frame

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Otto Bock has a certified Quality Management System in accordance with ISO 13485.