

Quality for life



CE

A200

EN	Instructions for use
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1 Foreword

INFORMATION

Date of last update: 2022-10-19

- ▶ Please read this document carefully before using the product and observe the safety notices.
- ▶ Obtain instruction from the qualified personnel in the safe use of the product.
- ▶ Please contact the qualified personnel if you have questions about the product or in case of problems.
- ▶ Report each serious incident related to the product to the manufacturer and to the relevant authority in your country. This is particularly important when there is a decline in the health state.
- ▶ Please keep this document for your records.

INFORMATION

- ▶ New information regarding product safety and product recalls as well as the declaration of conformity can be obtained at ccc@ottobock.com or from the manufacturer's service department (visit www.ottobock.com for addresses).
- ▶ You can request this document as a PDF file at ccc@ottobock.com or from the manufacturer's service department. The PDF file can also be displayed in a larger size.

You have received a product that is very versatile for everyday use at home and outdoors.

In order to exclude injuries of any type, familiarise yourself with the handling, functions and intended use of the product before using it. These instructions for use provide you with the related necessary information.

Please note the following in particular:

- All users and/or their attendants must be trained by qualified personnel in the use of the product. In particular, users and/or attendants must be informed of the residual risks with the aid of the safety notices in these instructions for use.
- The product was adapted to the needs of the user. Subsequent changes may be made only by qualified personnel. We recommend checking the product settings **once per year** to ensure optimal treatment over the long term. Especially for users with a changing anatomy (for example body dimensions, weight), an adjustment at least **once every six months** is recommended.
- Note the address and telephone number of the responsible qualified personnel and keep this information with you, especially when using the product outdoors. Inform the qualified personnel immediately in case of a malfunction. Provide all relevant details to make quick assistance possible.
- Your product may differ from the models shown. In particular, not all the options described in these instructions for use will be installed on your product.
- The manufacturer reserves the right to make technical changes to the model described in these instructions for use.

2 Product description

2.1 Function

The wheelchair is intended exclusively for transporting one person on the seat.

The wheelchair can be used indoors on solid surfaces (Category A according to EN 12184).

It is designed to be compact and manoeuvrable indoors.

Two 12-V batteries power the drive system and ensure safe operating performance.

The power wheelchair is controlled by the VR2 wheelchair control device (see page 23). The latter includes a control panel to enter driving commands and display the current status as well as a controller that operates the drive motors and other electrical functions based on the inputs.

The special features of the power wheelchair include:

- Compact design and ease of use.
- Frame that can be disassembled, making transportation easier.
- Serviceability due to easy, straightforward access to all components.

2.2 Product overview



- | | |
|---|--|
| 1 Push bar | 8 Caster wheel |
| 2 Back support | 9 Drive wheel |
| 3 Arm support (side panel) | 10 Battery (2 battery packs) |
| 4 Control panel with joystick | 11 Mechanical back support angle adjustment (option) |
| 5 Seat cushion | 12 Plug with battery cable |
| 6 Quick-release lever for seat inclination adjustment | 13 Anti-tipper |
| 7 Leg support | |

3 Intended use

The safe use of the product can only be ensured in case of intended use in accordance with the information contained in these instructions for use. The user is ultimately responsible for accident-free operation.

3.1 Indications for use

The wheelchair is intended for indoor transportation, by the user, of people with temporary or permanent limitations of the ability to walk, inability to walk or difficulty standing up. Optionally, the power wheelchair can be controlled by an attendant with the help of an attendant control device.

The product is suitable for users with intact skin whose anatomy (such as body dimensions and weight) permits the intended use of the product.

The wheelchair may only be used with the options listed on the order form.

The manufacturer assumes no liability for combinations with third-party medical devices and/or accessories not included in the modular system.

3.2 Indications

- Minor to pronounced or complete restrictions of mobility

3.3 Contraindications

3.3.1 Absolute Contraindications

- None known

3.3.2 Relative Contraindications

- Failure to meet physical or mental requirements

3.4 Qualification

The assembly and adjustment tasks described in the section "Adjustments by qualified personnel" (see page 14 ff.) may only be carried out by qualified personnel. Compliance with all manufacturer specifications and all applicable legal provisions is required. Please contact the manufacturer's service department for further information.

4 Safety

4.1 Explanation of warning symbols

 WARNING	Warning regarding possible serious risks of accident or injury.
 CAUTION	Warning regarding possible risks of accident or injury.
 NOTICE	Warning regarding possible technical damage.

4.2 Safety instructions for assembly and adjustments

 WARNING Making incorrect adjustments Risk of falling, tipping over or malposition of the user due to incorrect settings ▶ Settings may only be changed by qualified personnel unless otherwise prescribed. ▶ Before testing setting changes with the user seated, all screw connections must be firmly tightened. ▶ Check the product for safety and functionality after changing the settings.

4.3 Safety instructions for use

 WARNING Improper product operation Falling, tipping over, collision due to user error ▶ The product may only be used by a qualified user. ▶ As a user or attendant, you must be trained in the use of the product by qualified personnel. ▶ Read the entire instructions for use. ▶ The product may not be used in case of exhaustion or under the influence of alcohol, medications or drugs. ▶ The product may not be used by users who have any mental limitations which can temporarily or permanently limit attentiveness and judgement. ▶ Observe road traffic regulations during operation in public road traffic.

 WARNING Impermissible use Risk of pinching, crushing, being pulled in, tipping, falling due to improper handling ▶ Only use this product for its original intended purpose. ▶ Only one person may be transported with the product at any one time.

 WARNING Overloading Severe injuries if the product tips over due to overloading, damage to the product ▶ Do not exceed the maximum load capacity (see the nameplate and section "Technical data"). ▶ Please note that certain accessories and add-on components will reduce the remaining load capacity.

 WARNING Exceeding the service life Serious injuries due to failure to observe the manufacturer's requirements ▶ Using the product beyond the specified expected service life leads to increased residual risk. ▶ Observe the specified service life.

 CAUTION Skin damage Skin damage or pressure points due to overloading ▶ Check your skin for intactness before and during use of the product. ▶ Pay attention to diligent skin care and pressure redistribution by interrupting the use of the product. ▶ If skin damage or other problems occur during use, stop using the product. Contact the qualified personnel.
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⚠ CAUTION**Use of the product during diagnostic examinations and therapeutic treatment**

Impairment of the examination results or the effectiveness of treatment due to interactions of the product with devices that are used

- Make sure that examinations and treatments are carried out exclusively under the prescribed conditions.

⚠ CAUTION**Extreme temperatures**

Hypothermia or burns due to contact with components, failure of components

- Do not expose the product to any extreme temperatures (e.g. direct sunlight, sauna, extreme cold).
- Do not leave the product in the immediate vicinity of heaters.

NOTICE**Use under incorrect environmental conditions**

Damage to the product due to excessively high or low temperatures

- Only use the product within a temperature range of **-15 °C to +40 °C (+5 °F to +104 °F)**.

⚠ WARNING**Neglecting the duty to supervise**

Risk of suffocation due to small loose parts

- Note that the product includes small parts that can be loosened and removed without tools.
- Ensure that small children, for example, do not swallow them.

4.4 Side effects

The following side effects may occur during use of the product:

- Neck, muscle and joint pain
- Circulatory disorders, pressure sores

Contact a doctor or therapist in case of problems.

4.5 Interference due to electromagnetic fields**⚠ CAUTION****Use of mobile devices with electromagnetic emissions (e.g., mobile phones)**

Falling, collision with persons or objects due to interference with the control signals

- Turn all mobile devices off while driving, since the driving characteristics of the product are affected by electromagnetic fields.
- Turn the control unit off when it is not required, since the product may generate electromagnetic fields that can cause interference with other devices. The product has been tested according to EMC regulations.
- Notwithstanding compliance with all applicable EMC directives and standards, the product can be affected by interference from other electric devices (e.g., department store EAS systems) or cause interference with such devices. If this occurs, move your product outside the interference range.

- Powered wheelchairs may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones.
- The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself, or move in unintended directions.
- It can also permanently damage the powered wheelchairs control system.
- Because EM energy rapidly becomes more intense as one move closer to the transmitting antenna (source), the EM fields from hand-held radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the powered wheelchair's control system while using these devices. This can affect powered wheelchair movement and braking.
- Other types of hand-held devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, and cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to your powered wheelchair.

4.6 Further information

INFORMATION

The serial number required for enquiries and ordering spare parts and accessories is found on the nameplate. For explanations of the nameplate, see the section "Nameplate" (see page 11).

4.7 Nameplate and warning labels

4.7.1 Signage on the product

The warning signs and nameplates are attached at the following mounting points to the power wheelchair:



Warning signs and nameplates on the power wheelchair

4.7.2 Nameplate

The nameplates are found on the side of the frame under the seat.

Label	Meaning
ottobock.	A Manufacturer's product name
CE	B CE marking
C max. Zuladung: XXX kg/XXXlbs	C Maximum load (see section "Technical data")
D max. Steigfähigkeit: XX %	D Maximum climbing ability (see section "Technical data")
E max. Geschwindigkeit: XX km/h	E Maximum speed (see section "Technical data")
F zul. Achslast vorn: XXX kg/XXXlbs	F Allowable axle load, front
G zul. Achslast hinten: XXX kg/XXXlbs	G Allowable axle load, rear
H zul. Gesamtgewicht: XXX kg/XXXlbs	H Allowable overall weight
Otto Bock Mobility Solutions GmbH Lindenstraße 13 - 07426 Königsee/Germany Made in XXXX - www.ottobock.com	I Manufacturer information/address
SN MMMSYYWWPPXXX	J Serial number ¹⁾
K YYYY-MM-DD	K Manufacturing date ²⁾
ottobock.	L Symbol for medical device
MD	M WARNING! Read the instructions for use before using the product. Observe important safety-related information (e.g. warnings, precautions).
M	
N	
O	
P	
Q	
REF	
GTIN	

Label	Meaning
	N Symbol for separate collection of electrical and electronic devices. Components of the power wheelchair and batteries may not be disposed of in household waste.
	O Manufacturer's reference number for the product variant
	P Serial number (PI) ^(3),1)
	Q Global Trade Item Number (DI) ⁽⁴⁾

¹⁾ MMM = model/model variant; S = speed code; YY = year of manufacture; WW = week of manufacture; PP = production site; XXX = sequential production number

²⁾ YYYY = year of manufacture; MM = month of manufacture; DD = day of manufacture

³⁾ UDI-PI to GS1 standard; UDI = Unique Device Identifier, PI = Product Identifier

⁴⁾ UDI-DI to GS1 standard; UDI = Unique Device Identifier, DI = Device Identifier

4.7.3 Warning labels

Label	Meaning
	Engage the locking bar before use. Observe the information in the instructions for use.
	A Power driving mode: lock motor brake
	B Manual driving mode: unlock motor brake
	Application class A (according to DIN EN 12184)
	(Only in case of installation of ISO sets according to ISO 7176) Fixation point/eyebolt to attach the product in vehicles for transporting persons with reduced mobility

5 Delivery

5.1 Scope of delivery

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
- Instructions for use for accessories (depending on equipment)

5.2 Storage

5.2.1 Storage during daily use

The power wheelchair should always be protected against external influences.
The control unit must be turned off.

5.2.2 Storage during extended disuse

NOTICE

Deep discharge

Battery damage due to standby current

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

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

Storage conditions

- Store the power wheelchair in a dry, enclosed room with sufficient air circulation and protection from external influences. Specific information about storage conditions: see page 56.
- Protect the wheels against ground frost, for example by taking all weight off them using an assembly stand or by setting them onto wooden blocks.
- Maintain sufficient clearance from sources of heat. If the product is parked for an extended period of time or the tyres overheat (e.g. in the vicinity of radiators or in case of exposure to strong sunlight behind glass), the tyres may become permanently deformed.
- Fill pneumatic tyres with slight overpressure.
- Rotate the wheels weekly to prevent flat tyres from extended standing.
- For extended storage, store the power wheelchair so the wheels are not in contact with the ground.

Note regarding the tyres

- If the power wheelchair is not moved for several days, permanent colour changes may develop where it comes into contact with the ground. A suitable base should therefore be used when parking it for extended periods of time.
- Black tyres contain carbon black particles. They may leave black friction marks where they come into contact with the ground. Therefore, the manufacturer recommends grey tyres if the product is primarily used indoors.
- Avoid unnecessary parking outdoors. Direct exposure to sunlight/UV radiation causes the tyres to age more quickly. As a result, the tread surface hardens and corner pieces break out of the tread.
- The tyres must be changed when the tread is less than **1 mm (0.04")** to ensure safe driving behaviour.
- The tyres should be replaced every **2 years** regardless of wear and tear.
- When power wheelchairs with PU tyres are parked for longer periods, the tyres may become deformed (flat spots). This deformation will go away on its own over time while driving.

6 Preparing the product for use

6.1 Safety instructions

General hazards while putting into operation

⚠ WARNING

Improper handling of packaging materials

Risk of suffocation due to neglect of the duty to supervise

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

⚠ WARNING

Uncontrolled movement of components when making adjustments

Crushing, pinching, blows due to non-observance of the maintenance and repair instructions

- 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.

Hazards while putting into operation by qualified personnel

WARNING

Incorrect charging or use of the battery

Injuries due to fire or explosion, damage to the battery, short circuit

- ▶ Observe the safety notices in the section "Use" > "Batteries/charging process" (see page 31).

Hazards while putting into operation by the user

WARNING

Independent modification of settings

Serious injuries to the user due to improper changes to the product

- ▶ Do not modify the settings established by the qualified personnel. Only the settings described in the section "Use" in these instructions for use may be adjusted independently.
- ▶ In case of problems with the settings, please contact the qualified personnel who adjusted your product.

CAUTION

Screw connections not tightened

Pinching, crushing, tipping over, falling of user due to assembly errors

- ▶ After all adjusting/readjusting work authorised by the manufacturer, retighten the mounting screws/nuts firmly. Observe any torque settings which may be specified.

6.2 Initial operation

The qualified personnel delivers the power wheelchair fully assembled and in operational condition.

The following additional tasks may be required:

- **Only if needed:** Assembling the frame and drive unit bracket (see page 45)
- Adjusting the settings (see next section)
- Installing the fuse (see page 18)
- Installing the battery pack (see page 31)
- Charging the battery (see page 33)
- Folding up the backrest (see page 21)
- Installing the side panels (see page 19)
- Installing the leg supports (see page 20)

6.3 Settings

6.3.1 Adjustments by qualified personnel

The seat height, seat width and seat angle have been preset in accordance with the customer order.

Changes to these basic settings may only be made by qualified personnel. Please see the service manual for further information.

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

The tools required for adjustments and maintenance tasks as well as the torque values for screw connections are listed in the section "Appendices" (see page 58).

6.3.1.1 Safety instructions

WARNING

Making incorrect adjustments

Risk of falling, tipping over or malposition of the user due to incorrect settings

- ▶ The tasks described below may only be carried out by qualified personnel.
- ▶ Settings may only be changed within the allowable adjustment ranges; otherwise, the stability of the product may be impaired (see this section and the “Technical data” section). If you have questions, contact the manufacturer's service (visit www.ottobock.com for addresses).
- ▶ Only conduct tests in the presence of an assistant.
- ▶ Unless expressly described, you may not change any settings with a person sitting in the product.
- ▶ Secure the user against falling out during all tests.
- ▶ Before testing setting changes with the user seated, firmly tighten all screw connections.
- ▶ Check for safe function before delivering the product.

CAUTION

Unsecured screw connections

Pinching, crushing, tipping over, falling of user due to assembly errors

- ▶ Always firmly re-tighten the mounting screws and nuts after changing settings. Observe the specified torques in doing so.
- ▶ Any time you loosen a screw connection with thread lock, replace it with a new screw connection with thread lock or secure the old screw connection with medium strength thread locker (e.g. Loctite 241).
- ▶ Always replace self-locking screws and nuts with new self-locking screws and nuts after disassembly.

CAUTION

Improper lifting

Crushing, pinching, blows due to failure to observe safety instructions

- ▶ Some parts of the power wheelchair, such as the batteries, frame, seat, and motors, are very heavy. Ensure ergonomically correct lifting of these parts. Use sufficiently large hoisting devices or perform this work with a helper.
- ▶ If it is necessary to work underneath raised parts or equipment, make sure these are secured by suitable means so that they cannot come loose, shift, or fall down.
- ▶ When using lifting platforms, ensure that the power wheelchair is centred on the platform and that no parts protrude into the danger zone.

NOTICE

Improper preparation before making adjustments

Damage to the product due to falling down and failure to follow setting instructions

- ▶ When you work on the product, secure it so that it cannot tip over or fall over.
- ▶ Turn the power wheelchair off and remove the fuse before making any adjustments. Functional tests of the electrical components are excepted from this rule.
- ▶ Before performing any work on the seat, ensure that the cushion is sufficiently protected against mechanical, chemical, and thermal effects.

NOTICE

Use of unsuitable packaging

Damage to the product caused by transportation using incorrect packaging

- ▶ Use only the original packaging for delivery of the product.

6.3.1.2 Adjusting the standard seat

6.3.1.2.1 Adjusting the back support upholstery

INFORMATION

A well-adjusted back support provides lasting comfort for the wheelchair user and reduces the risk of secondary damage and pressure zones.

INFORMATION

Ensure that the user's pelvis is positioned as far back in the seat as possible, i.e. between the back support tubes.

The adjustable back support upholstery can be adjusted in segments to the needs of the user. In order to properly adjust the upholstery, the user must be sitting in the wheelchair during the adjustment process.



Adjusting the back support upholstery

- 1) Pull the fabric of the back support pad off the hook-and-loop straps of the back support upholstery and fold it up.
- 2) Open and loosen the hook-and-loop straps one after the other (see fig. 3).
- 3) From the bottom to the top, adjust the tension of the hook-and-loop straps to the weight and anatomical condition of the user and fasten the straps one after the other.

INFORMATION: The two ends of the hook-and-loop strap have to overlap by at least 100 mm in each case.

INFORMATION: Adjust the respective lower hook-and-loop straps somewhat tighter. Deviating adjustments may be required in specific cases; this is the responsibility of the attending therapist.

- 4) Fold the fabric of the back support pad over the hook-and-loop straps and press it into place.

6.3.1.2.2 Inserting foam elements

INFORMATION

Please note that the correction pads are not included in the scope of delivery and cannot be ordered from Ottobock. Please use corresponding foam elements from your inventory.

The sitting position can be fine-tuned by using various correction pads in the backrest.



Fine-tuning the backrest

- 1) Open the side of the back pad. In order to do so, loosen the hook-and-loop closures of the side openings.
- 2) Select the correction pads as required. These can be positioned by turning/sliding to offer additional lateral guidance for the user.
- 3) Insert the correction pads as required.
- 4) Fasten the hook-and-loop closures on the side openings again.

6.3.1.3 Adjusting the belt length

CAUTION

Incorrect approach to the adjustment process

Injuries, malpositions, user discomfort due to adjustment errors

- The qualified personnel is responsible for the individual positioning and fitting of the belt system.
- Adjusting the belt system too tightly may lead to unnecessary pain or user discomfort.
- Adjusting the belt system too loosely can cause the user to slide into a dangerous position. In addition, the fastening snaps could open unintentionally if they slide against hard parts of clothing (e.g. buttons).

⚠ CAUTION**Lack of instruction**

Injuries, malpositions, illness of the user due to incorrect information

- ▶ The qualified personnel is responsible for making sure that the user and/or attendant/nursing staff has understood the proper adjustment, use, maintenance and care of the belt system.
- ▶ In particular, ensure that the user and/or attendant/care staff knows how to quickly loosen and open the product to avoid delays in case of emergency.

Notes on correctly applying and adjusting the lap belt: see page 38.

6.3.1.4 Adjusting the control device**⚠ WARNING****Incorrect configuration of the control device**

Falling, tipping over, collision due to incorrect parameter settings

- ▶ Note that modified parameter settings 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.
- ▶ The parameter settings of the control device may only be changed by qualified personnel. The manufacturer of the product and the control device manufacturer are not liable in case of damage caused by parameter settings that were incorrectly configured or not adjusted properly according to the user's abilities.
- ▶ The user must test the driving characteristics of the product under the supervision of the qualified personnel each time after parameter settings are changed.

6.3.1.4.1 Wheelchair control options

If necessary, the programming of the wheelchair control unit can be adjusted to the specific user requirements.

Information on using the wheelchair control unit: see page 23.

Troubleshooting information: see page 53.

Further information on programming can be found in the service manual or the supplied instructions for use from the control device manufacturer Curtiss-Wright.

6.3.1.4.2 Attendant control

The power wheelchair can be ordered and equipped with an attendant control. It may be necessary to fit the already installed attendant control to the actual body size of the attendant.

Information on operating the attendant control: see page 40.

Troubleshooting information: see page 54.

6.3.2 Adjustments by the user**⚠ CAUTION****Screw connections not tightened**

Pinching, crushing, tipping over, falling of user due to assembly errors

- ▶ After all adjusting/readjusting work authorised by the manufacturer, retighten the mounting screws/nuts firmly. Observe any torque settings which may be specified.

The user or attendant may only perform the fine-tuning adjustments described in the following. The user should be sitting upright in the power wheelchair while making adjustments.

- Adjusting the armrests (see page 19)
- Adjusting the lower leg length and foot support angle (see page 20)
- Adjusting the back angle (see page 22)
- Adjusting the position of the control panel (see page 42)
- Adjusting the positioning belt (lap belt) (see page 38)

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

6.3.2.1 Adjusting the control device

⚠ WARNING**Incorrect configuration of the control device**

Falling, tipping over, collision due to incorrect parameter settings

- The parameter settings of the control device may only be changed by qualified personnel. The manufacturer of the product and the control device manufacturer are not liable in case of damage caused by parameter settings that were incorrectly configured or not adjusted properly according to the user's abilities.

If necessary, the qualified personnel can adapt the preconfigured parameters of the wheelchair control device to the specific requirements of the user.

7 Delivery

7.1 Final inspection

A final inspection must be performed before delivery of the power wheelchair:

- Was the product fitted optimally to the physical and mental condition of the user (e.g. seat, arm support/side panel, leg supports, control panel)?
- Are the batteries charged?
- Is the tyre pressure correct (see tyre sidewall and the section "Technical data" for information)?
- Do all manual and power functions work properly?
- Do all control functions work properly?
- Do the brakes work?

7.2 Transport to the customer

Instructions for disassembly and transport: see page 43.

7.3 Handing over the product

⚠ WARNING**Lack of instruction**

Tipping over, falling of the user due to lack of knowledge

- Instruct the user or the attendant in the proper use of the product when handing it over.

The following steps must be performed for the safe handover of the product:

- Have the user get into the product and perform a trial seat fitting. Pay special attention to proper positioning according to medical considerations.
- The user and any attendants must be instructed in the safe use of the product. The instructions for use in particular have to be used.
- The instructions for use must be given to the user or an attendant upon delivery of the wheelchair.
- The user or attendant should acknowledge that they have been instructed in how to use the product and were informed of the residual risks.
- **Depending on equipment:** The supplied instructions for use for accessories have to be handed over in addition.

8 Use

8.1 Circuit breaker

INFORMATION

- Should the fuse burn out repeatedly after a short time for no discernible reason, contact the qualified personnel.
- For shipping or when the power wheelchair is not being used for an extended period of time, the fuse should be removed.

Note: The fuse typically comes installed in the dedicated fuse holder when the wheelchair is handed over to the user.

Before the power wheelchair can be switched on, the fuses may have to be inserted into the fuse holders provided for the purpose.

They are located on the underside of the battery packs (see fig. 5).



Installing the fuse

- 1) Remove the battery packs (see page 31).
- 2) Remove the fuse from the supplied protective cover.
- 3) Insert the fuse into the slot provided (see fig. 5).
- 4) Reinstall the battery packs (see page 31).

Removing the fuse

- > **Prerequisite:** The control device is switched off.
- 1) Remove the battery packs (see page 31).
 - 2) Take the fuse out of the slot (see fig. 5).
 - 3) Reinstall the battery packs (see page 31).

8.2 Side panels

INFORMATION

Additional information for adjusting the control panel position: see page 42.

The side panels protect the user and his/her clothing from getting dirty.

The installed armrests offer the user additional support for the forearms.

8.2.1 Removing/installing the side panels

To make getting in from the side easier or for transportation, the side panels can be removed if needed.



Removing the side panel

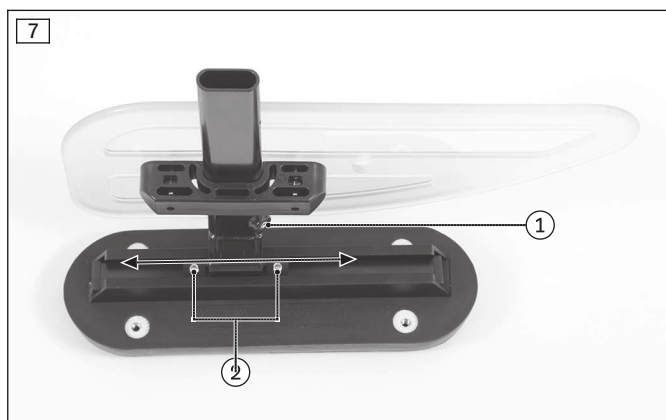
- 1) Loosen the thumb screw on the side panel holder (see fig. 6, item 1).
- 2) Pull the side panel out from the side panel holder and set it aside.
- 3) **Only for side panel with control panel:**
 - Carefully let the side panel with the control panel hang down while getting in.
 - For transporting the power wheelchair, place the side panel on the seat.

Installing the side panel

- 1) Insert the side panel into the side panel holder.
- 2) Re-tighten the thumb screw on the side panel holder (see fig. 6, item 1).

8.2.2 Adjusting the side panels

The height of the armrests, the forearm length and the clothing protector can be subsequently adapted.



Adjusting the armrest height

- 1) Loosen the Allen head screw on the side panel mounting (see fig. 7, item 1).
- 2) Slide the armrests up or down to the desired position.
- 3) Re-tighten the Allen head screw.

Adjusting the armrest to the forearm length

- 1) Loosen the 2 Allen head screws on the underside of the armrest (see fig. 7, item 2).
- 2) Push the armrest to the front or back into the desired position.
- 3) Tighten the 2 Allen head screws.

8.3 Legrests

The legrests support the user's feet.

The height of the legrests has been adjusted by qualified personnel to the length of the user's lower leg.

The angle of the footrest has been set by the qualified personnel so that it allows the ankles to rest in a comfortable position.

8.3.1 Removing/installing the leg supports

CAUTION

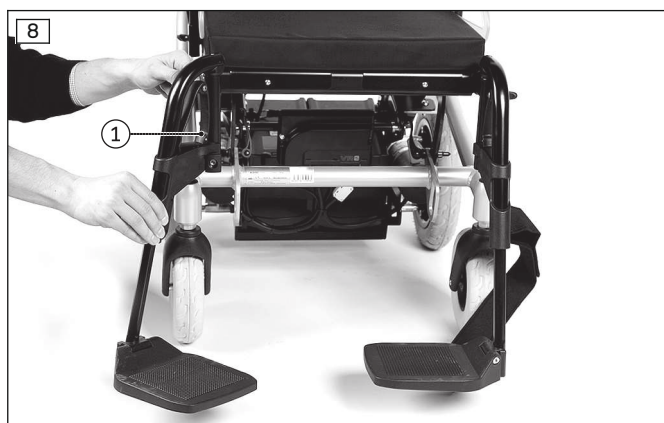
Incorrect handling when getting in

Crushing, pinching, impacts due to incorrect handling

- ▶ Do not reach into the danger area with your fingers when folding the legrest or footplates up or down.
- ▶ Never step on the footplates when getting in and out.
- ▶ Note projecting edges.

INFORMATION

For detaching/attaching the mechanically elevating leg supports: see page 38.



Removing the leg supports

- 1) Unhook the calf band (not illustrated).
- 2) Flip the foot support up.
- 3) Release the leg support locking mechanism (see fig. 8, item 1).
- 4) Swing out the leg support.
- 5) Pull the leg support up and remove it.

Installing the leg support

- 1) Hook the leg support into the holder from the side.
- 2) Swing the leg support forward until the leg support lock engages (see fig. 8, item 1).
- 3) Fold down the foot support.
- 4) Hook the calf band into the holder.

8.3.2 Adjusting the leg supports

CAUTION

Exposed pinch points

Crushing, pinching due to incorrect handling

- ▶ Do not reach into the danger area with your fingers when folding the legrest or footplates up or down.

CAUTION

Improper adjustment of the leg supports and foot plates

Risk of injuries due to uncontrolled driving characteristics, damage to the product

- ▶ Make sure that the clearance between the foot plates and ground is sufficient even under load.
- ▶ Make sure that the leg supports and foot plates do not come into contact with the caster wheels under load.

The legrests can be subsequently adjusted to the user's lower leg length.

For some legrests, the angle of the foot plate can also be adjusted.



Adjusting the lower leg length

- 1) **If present:** Remove the calf band.
- 2) Loosen the set screws on the inside of the foot support bar (see fig. 9).
- 3) Adjust the foot support bar to match the user's lower leg length.

INFORMATION: Ensure that the foot support bar is inserted into the swivel segment by at least 40 mm.

- 4) Re-tighten the set screws on the foot support bar.
- 5) Hook the calf band in again.



Adjusting the foot support angle

- 1) Loosen the Allen head screw on the foot support (see fig. 10, item 1).
- 2) Turn the foot support to the desired angle.
- 3) Tighten the Allen head screw.

8.4 Backrest

⚠ CAUTION

Exposed pinch points

Crushing, pinching due to incorrect handling

- Do not reach into the danger area with your fingers when folding the backrest up or down.

The backrest provides pressure redistribution and support for the upper body.

8.4.1 Folding the back support up/down

The wheelchair may be delivered with the backrest folded down. It has to be folded up and secured prior to use.

Method for standard back adjustment



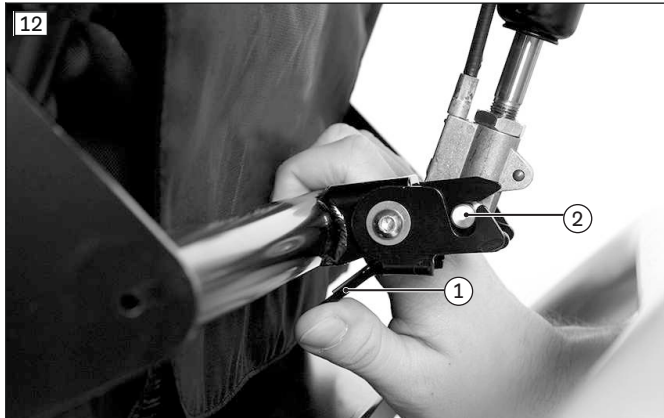
Folding up the back support

- 1) Pull on the strap until the locking bolts are free (see fig. 11).
- 2) Lift the back support and move it to the desired position.
- 3) Allow the locking bolts to engage.
- 4) Check to ensure the lock is securely engaged by pulling on the back support.

Folding down the back support

- 1) Pull on the strap until the locking bolts are free (see fig. 11).
- 2) Fold the back support down onto the seat.

Method for mechanical back angle adjustment



Folding up the back support

- 1) Fold the back support up.
- 2) Push the lock lever down (see fig. 12, item 1).
- 3) Place the cross bolt on the end of the gas compression spring into the bracket (see fig. 12, item 2).
- 4) Release the lock lever until the cross bolt engages.
- 5) Check to ensure the lock is securely engaged by pulling on the back support.

Folding down the back support

- 1) Push the lock lever down (see fig. 12, item 1).
- 2) Remove the cross bolt at the end of the gas compression spring from the bracket (see fig. 12, item 2).
- 3) Fold the back support down onto the seat.

8.4.2 Adjusting the back support angle

The angle of the backrest can be adapted to the requirements of the user.

Adjusting the back angle using the strap

The adjustment is carried out as described in the previous section.

Manual back angle adjustment

If needed, the back angle is adjusted, as needed by using this seat function (see page 37).

8.5 Getting in and transferring

⚠ CAUTION

Incorrect handling when getting in

Falling, tipping over due to incorrect handling

- ▶ Turn the control unit off while getting in and out, in order to avoid accidental driving.
- ▶ Always place the seat in a horizontal position.
- ▶ 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.
- ▶ Always put on a lap belt when driving.

⚠ CAUTION

Incorrect handling when getting in

Crushing, pinching, impacts due to incorrect handling

- ▶ Do not reach into the danger area with your fingers when folding the legrest or footplates up or down.
- ▶ Never step on the footplates when getting in and out.
- ▶ Note projecting edges.

The modular design of the power wheelchair and the ease with which you can remove the side panels and legrests 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

- 1) Turn the control device off.
- 2) Fold up the foot supports (see fig. 13, left).
Swinging to the side increases the space for getting in (see fig. 13, right).
- 3) Have an attendant assist you or use a transfer lifter to get into and out of the power wheelchair.
- 4) Fold down the foot supports.

Getting in from the side (alternative option)

- 1) Turn the control device off.
- 2) Remove the side panel (see page 19).
- 3) **If needed:** Remove the corresponding leg support (see page 20).
- 4) Get into or out of the power wheelchair from the side. A ramp makes this easier.
- 5) Reinstall the leg support and side panel.

8.6 Control unit

⚠ CAUTION

Uncontrolled driving behaviour

Falling, tipping, collision with persons or nearby objects due to interference from electromagnetic fields

- Observe the information in the section "Interference due to electromagnetic fields" (see page 10).
- Turn the control device off when it is not needed.

The power wheelchair is controlled by a VR2 control unit.

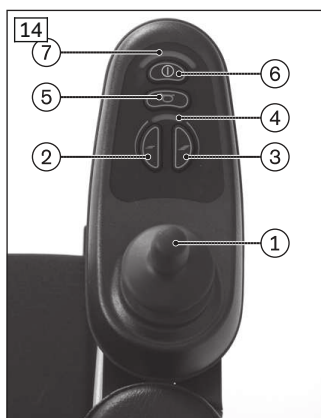
The qualified personnel can subsequently adapt some parameters of the control device to the personal requirements of the user, for example, the speed, acceleration and deceleration values.

8.6.1 Control panel

The power wheelchair is operated using the control panel.

The control panel is divided into the keypad, two LED displays and the joystick. The charging/programming receptacle is on the underside.

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



- 1 Joystick
- 2 [Decrease speed] button
- 3 [Increase speed] button
- 4 [Selected speed level] LED display
- 5 [Horn] button
- 6 [On/off] button
- 7 [Charge level] LED display
- 8 Charging/programming receptacle

8.6.2 Buttons and display functions

Joystick

The speed and driving direction are controlled with the joystick (see page 28).

[On/off] button

Pressing this button turns the power wheelchair on or off (see page 27). In combination with additional operating steps, it also activates/deactivates the drive-away lock (see page 29).

[Decrease speed] and [Increase speed] buttons

Pressing the button briefly increases/decreases the speed level (see page 28). The acoustic signal changes when the maximum speed level is reached.

[Horn] button

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

[Selected speed level] LED display

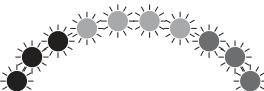
The LED display shows the currently selected speed level (1–5).

[Charge level] LED display

The [Charge level] LED display is divided into 10 segments and shows the current charge level:

- The accuracy of the indicator increases after driving for a short time.
- A charge of 100% corresponds to 10 segments on the battery icon.
- As the remaining battery charge decreases, the LED segments turn off one by one.
- If only one segment of the LED display is flashing, then the battery is in an undervoltage state. The battery must be charged immediately.
- If all 10 LED segments are flashing, this means that the battery is in an overvoltage state. Please continue to drive at low speed only.
- The charging process is indicated by sequential flashing of the LEDs. The driving function is blocked when the battery is charging.

Battery indicator on the control panel

Display	Information
	Battery is charged
	Charge battery if possible
 Sequential indicator	Battery is charging
 Flashing light	Battery undervoltage, battery charging urgently required
 Flashing light	Battery overvoltage

Further LED display functions

Further LED display symbols are described in the following sections:

- See section "Usage" > "Drive-away lock" (see page 29)
- See section "Maintenance/repair" > "Troubleshooting" (see page 53)

8.7 Driving functions**8.7.1 Safety instructions****Hazards while driving****⚠ CAUTION****Lack of riding experience**

Collision, falling due to errors in handling the product

- Practise using the product on level, open ground first.

⚠ CAUTION**Insufficient support of the seated person**

Risk of falling out of the power wheelchair due to lack of restraint

- ▶ Always use the installed belt system when driving in public.
- ▶ Information about subsequent acquisition and mounting is provided by the qualified personnel that handed the product over to you.

⚠ CAUTION**Uncontrolled driving behaviour, unexpected sounds or odours**

Falling, tipping, collision with persons or nearby objects due to defects

- ▶ If any faults, defects or other hazards that can lead to personal injury are detected, the product must be taken out of service immediately. This includes uncontrolled movements as well as sounds that are unexpected or previously not noted or odours that deviate significantly from the state of the product at the time of delivery.
- ▶ Contact the qualified personnel.

⚠ CAUTION**Driving in the dark**

Risk of collisions with other traffic participants due to lack of lighting

- ▶ Wear bright clothing or clothing with reflectors.
- ▶ Install active lighting on your product.
- ▶ Ensure that the reflectors on the product are clearly visible.

Hazards during use of public transportation, elevators, lifting platforms**⚠ CAUTION****Use of elevators, lifting platforms**

Risk of tipping, collision with persons or nearby objects due to incorrect parking

- ▶ Always turn the power wheelchair control unit off when using elevators or lifting platforms.
- ▶ Make sure that the brake is engaged.

⚠ CAUTION**Safe positioning when using public transit**

Crushing, pinching, impacts, collision with persons or objects, damage to the product due to human error

- ▶ Only use public transit approved for the transportation of power wheelchairs.
- ▶ Always observe the current applicable transportation guidelines of the transit company and/or the legal requirements in your country when using public transit.
- ▶ Always ensure that you are held in place securely when travelling on public transit. To do so, use the wheelchair areas, wheelchair bays and restraint systems provided. Turn the power wheelchair off before the vehicle starts to move.
- ▶ The transportation of a person sitting in a wheelchair in public transit constitutes a significant safety risk for all participants. We therefore recommend using the seats provided during transportation.
- ▶ While using public transit, you are not permitted to sit in the wheelchair without an approved personal restraint system.

Danger when carrying across obstacles**⚠ WARNING****Improper lifting by attendants**

Tipping over, falling of the user due to lifting on components that come loose or are not intended for lifting

- ▶ Only lift the product by firmly mounted components (e.g. on the main frame).
- ▶ Do not lift the product on components installed with screw connections, or on add-on or plug-on components (e.g. on the backrest of legrests, armrests).

Hazards due to defective tyres

⚠ CAUTION

Defective tyres

Accidents/falling due to poor traction, reduced braking force or lack of manoeuvrability

- ▶ Maintain sufficient tyre pressure. The correct air pressure is printed on the sidewall of the tyre.
- ▶ Ensure that the drive wheels have the same pressure.
- ▶ Ensure that the tyres have sufficient tread depth. The tyres must be changed when the tread depth is less than **1 mm**.

Additional information

INFORMATION

Even in the event of compliance with all applicable guidelines and standards, alarm systems (e.g. in department stores) may respond to your product. Should this happen, remove your product from the area where the alarm was triggered.

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.

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.

8.7.2 Driving notes

General information:

- Prior to each use, the charge level of the batteries must be checked to avoid stalling due to drained batteries.
- Beginners should always drive at a low speed level.
- Always take curves slowly.
- On uneven ground, the driving behaviour of the wheelchair may get out of control. Therefore the speed must always be adjusted to the ground conditions.
- Driving backwards should be limited to manoeuvring and short distances on level ground.

Obstacles (steps, curbs, tracks):

- Always approach obstacles directly from the front (never at an angle with only one front wheel).
- Starting at a **maximum distance of 10 cm** from the obstacle is permissible.
- Always reduce speed to cross over obstacles (e.g. select speed level 1 or 2).
- Note the information on the critical obstacle height (see the section "Technical data"). Crossing over obstacles greater than the height difference specified there is not permitted.
- Avoid "jumping" down from higher surfaces.
- Do not lean out of the wheelchair while crossing obstacles.
- Only cross railway systems and railway tracks in the designated areas.
- Do not negotiate railroad crossings too close to the edge. Otherwise, the wheels could accidentally move off the railroad crossing.

Inclines and gradients:

- Note the information on permitted inclines and downgrades (see the section "Technical data"). Driving on inclines or downgrades exceeding the specified values is not permitted. The wheelchair may otherwise tilt and not brake safely. The traction of the drive wheels is also reduced.
- The control device and the motors must be protected against overloading. Therefore, the continuous climbing ability depends on the overall weight (wheelchair weight + user weight + load), as well as the ground conditions, exterior temperature, battery voltage and driving style of the user. In individual cases, the continuous climbing ability may be significantly lower than the value specified.
- In order to navigate downhill gradients safely, the speed must be reduced according to the slope (e.g. select speed level 1).
- Never drive downhill backwards. Only briefly manoeuvring on ramps is permitted (for example, when exiting a vehicle for transporting persons with reduced mobility).

Terrain:

- 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, intersections, train crossings)
 - Snow-covered or icy areas
- The product may not be used in salt water.

Using the control unit:

- The control system always has to be mounted securely and the joystick position must be correct.
- The hand or limb used to operate the joystick should be supported, for example on the side panel arm pad.
- The joystick must not be used as the sole support for the hand or limb, because wheelchair movements and bumps could cause a loss of control.
- If the power wheelchair does not drive at full speed even when the battery is fully charged, the selected speed level should be checked. Contact the qualified personnel if increasing the speed level does not solve the problem.

Further instructions for use

- Attaching loads (e.g. backpacks) can adversely affect stability. We recommend always attaching a backpack to the push handles with the shoulder straps. The load should not exceed **5 kg**.
CAUTION: If push handles are not installed on the product, suspending additional loads on the wheelchair is not permitted.
- The recommended overall width for power wheelchairs in this category in an operational state is **700 mm (27.5")**. The products in the series generally meet this requirement. This ensures the unhindered use of escape routes, for example.
- The products in this series generally meet the minimum technical requirements for wheelchairs transportable by train (see page 58).

8.7.3 Switching on and off**⚠ WARNING****Lack of brake functionality**

Falling, tipping over, collision with persons or nearby objects due to lack of inspection

- ▶ Ensure that the brake release lever is in the driving position every time before you drive (see page 30).
- ▶ Check the control unit display to ensure that the brakes are operational and functional (see page 53).

⚠ WARNING**Defective safety functions**

Falling, tipping over, collision with persons or nearby objects due to lack of inspection

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

⚠ WARNING**Unexpected emergency stop**

Falling, the user may fall out due to sudden emergency braking

- ▶ In the event of communication problems in the control device bus system or a power supply defect, the system triggers an emergency stop and thus avoids uncontrolled functions.
- ▶ Note that this emergency stop in road traffic could lead to situations that are hazardous for you. Ensure that the control device is maintained regularly (see page 50).
- ▶ Note that after every emergency stop, you have to turn the power wheelchair control device on again.
- ▶ If the driving function is still not available after turning the control device on again, pushing mode can be activated by releasing the brake (see page 30).
- ▶ Consult the qualified personnel promptly if the driving function is not available after restarting.

INFORMATION

In dangerous situations, the product can be turned off at any time using the on/off button. The power wheelchair stops immediately when the button is pressed. Malfunctions such as an insufficient supply of power to the control device are recognised by the software, triggering an emergency stop or reducing the speed of the product.

- Pressing the [on/off] button (see page 23) turns the power wheelchair control unit on or off. The power wheelchair turns off automatically if the control unit has not been 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 being driven.
- Each time you switch on the control unit, it will be at the previously selected speed level.

8.7.4 Selecting the speed levels

- The power wheelchair has a programmable number of speed levels (delivery condition = 5 speed levels).
- Pressing the [Decrease Speed] button lowers the speed level.
- Pressing the [Increase Speed] button raises the speed level.
- The pitch of the audible signal changes once the highest or lowest speed level is reached.
- The [Selected speed level] LED display shows the speed level selected.

Display	Information
	Selected speed level = 3

8.7.5 Driving

⚠ WARNING

Driving on unsuitable surfaces
Risk of falling or tipping over due to operator error

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

⚠ WARNING

Driving on slopes, over obstacles
Falling, tipping over due to user error

- ▶ Only cross obstacles or negotiate ascents or descents that are within the permitted maximums. For more information, see the section "Technical data" (see page 56).
- ▶ Do not cross over any obstacles while ascending or descending inclines.
- ▶ Avoid embarking and disembarking on inclines and slopes.
- ▶ Do not drive over stairs.

⚠ WARNING

Longer braking distance
Risk of falling, tipping over or collision due to operator error

- ▶ Note that the braking distance is much longer on downgrades than on the level.
- ▶ Also reduce speed when driving downhill (e.g. select speed level 1).

INFORMATION

The control unit of the product switches to a safe mode at elevated temperatures and after driving uphill for extended periods of time, limiting the performance of the product.
The user is able to drive the product out of a hazardous situation at any time. After a short time, the product is fully operational again.

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.

8.7.6 Range

The section "Technical data" contains precise information on the range of the product (see page 56).

The following factors influence the range of the product:

- Battery capacity
- Age of the batteries
- Ambient temperature
- Driving conditions (e.g. terrain profile, surface characteristics, frequently driving over obstacles)
- Charging method
- Type and number of power options
- Overall weight of the wheelchair with selected equipment
- Use of power options
- Body weight of user
- Tyres (air pressure, tyre tread depth)

8.7.7 Anti-tipper

The anti-tipper rollers stabilise the power wheelchair when braking while driving downhill.

The anti-tipper is mounted so that the ground clearance is at least **50 mm**.

8.7.8 Drive-away lock

INFORMATION

This function is currently not enabled.

For questions related to enabling it, please consult the qualified personnel that adapted the product or the manufacturer's service department.

The power wheelchair control unit features an electronic drive-away lock, which is disabled by default.

If the function has been ordered and enabled, the drive-away lock can be activated or deactivated as follows using the control panel:

Activating the drive-away lock

- 1) Press and hold the [On/off] switch while the control unit is turned on.
 - 2) Release the [On/off] button after a beep sounds (approx. 1 second).
 - 3) Push the joystick all the way forward until a beep sounds.
 - 4) Push the joystick all the way back until a beep sounds.
- A long beep confirms that the drive-away lock was activated.
- The control unit turns itself off.
- A sequential indicator on the [Selected speed level] LED display indicates that the drive-away lock is active:

Display	Information
Sequential indicator on the "Speed levels" LED display	Drive-away lock

Deactivating the drive-away lock

When the unit is turned on, the [Charge level] LED display is off and the [Selected speed level] LED indicator is in sequential indicator mode.

- 1) Push the joystick all the way forward until a beep sounds.
 - 2) Push the joystick all the way back until a beep sounds.
 - 3) Release the joystick.
- A long beep confirms that the driving function is enabled.
- The [Charge level] LED indicator is lit.
- The drive-away lock is deactivated and driving is enabled.

Troubleshooting

The drive-away lock remains active if the deactivation movement is not completed correctly.

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

8.7.9 Adapting the driving characteristics

⚠ WARNING

Incorrect configuration of the control device

Falling, tipping over, collision due to incorrect parameter settings

- ▶ The parameter settings of the control device may only be changed by qualified personnel. The manufacturer of the product and the control device manufacturer are not liable in case of damage caused by parameter settings that were incorrectly configured or not adjusted properly according to the user's abilities.

Adjusting and setting the speed, acceleration and deceleration values to the individual user requirements is performed exclusively by the qualified personnel.

8.8 Enabling/disabling the brakes

⚠ WARNING

Uncontrolled rolling away

Risk of collision with persons or nearby objects due to unlocked brakes

- ▶ Note that there is no braking function when the brakes are unlocked. The brake function may only be unlocked in the presence of an attendant.
- ▶ If the user cannot reach the brake release themselves, the brakes can be unlocked by the attendant.
- ▶ Note that when the power wheelchair is moved on an incline, the attendant who is pushing must provide the required brake force.
- ▶ Ensure that the brakes are locked each time when parking the power wheelchair.

⚠ WARNING

Improper maintenance, repairs or adjustments on the brake

Falling, tipping, collision with persons or nearby objects due to improper operation

- ▶ Repairs and adjustments on the brakes may only be made by qualified personnel. Incorrect adjustment may lead to a loss of the braking effect.

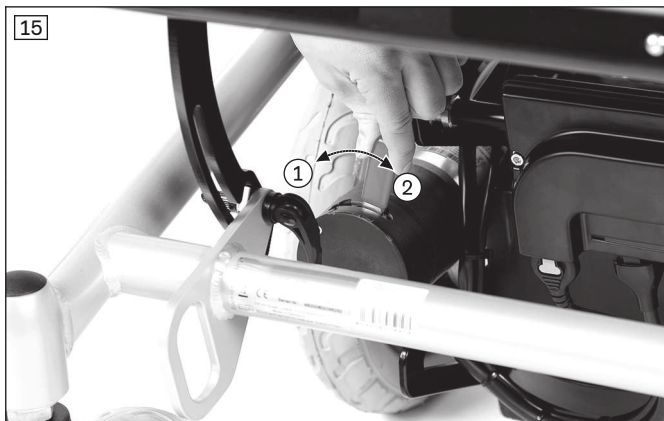
INFORMATION

The control device outputs a signal on the control panel when the brakes are unlocked. If this is not the case, there is a malfunction that has to be promptly rectified by the qualified personnel.

In case of a control device failure or an insufficient battery charge level, the power wheelchair can be pushed.

To do so, the brakes are deactivated via the mechanical release. The brake releases are located on the right and left of the driving motors.

The brake release levers are located on the right and left under the seat, above the motors.



Releasing/deactivating the brake

- 1) Turn the control device off.
- 2) Push the brake release levers down (see fig. 15, item 1).
 - The drive motors are released and the power wheelchair has no braking function.
 - After switching the control device on: The control device recognises that the brake has been released and deactivates the driving function.
 - A warning appears on the control panel.

Enabling/activating the brake

- 1) If needed: Turn the control device off.
- 2) Push the brake release lever up (see fig. 15, item 2).
- 3) Switch on the control device.
 - The driving function is activated.

Brake deactivated: warning on control panel

Display	Information
 Flashing light	Brake released

8.9 Batteries/charging process**8.9.1 Safety instructions****⚠ CAUTION****Failure to check the charge level before putting into operation**

Injury to the user due to stopping suddenly, problems due to unplanned stalling

- ▶ Check the charge level of the batteries before each use.
- ▶ Always make sure that the charge level of the batteries is sufficient for the planned distance.
- ▶ Never drive with the batteries almost fully discharged.
- ▶ When the batteries are almost fully discharged, charge them promptly.

NOTICE**Unauthorised battery replacement**

Battery damage due to unauthorised changes to the product

- ▶ Replacing the battery or modifying the battery installation position may only be performed by qualified personnel trained by the manufacturer.
- ▶ The charging profile of the battery charger established at the factory matches the batteries included in the scope of delivery and may not be altered independently.

8.9.2 General

The power wheelchair is equipped with maintenance-free batteries. See the section "Technical data" for the battery capacity.



The batteries are located in 2 battery packs below the seat of the power wheelchair (see fig. 16).

NOTICE: Please note that driving for an extended period of time in the lower range of the battery indicator will result in deep discharge and therefore battery damage. In this case the control device of the power wheelchair switches to power-saving creep speed while driving when the battery is low.

NOTICE: Please also observe the information for charging the battery (see the next section).

8.9.3 Battery packs

Removing and installing the battery packs is necessary to use the power wheelchair, insert or remove the fuse, and to replace the battery packs.



Removing battery packs

> **Prerequisite:** The control device is switched off.

- 1) Pull the release strap for the seat lock and simultaneously fold the locking bar down (see fig. 17).
- 2) Remove the exposed battery packs (see fig. 18, left).
- 3) Insert the fuse if needed (see page 18).



Inserting battery packs

> **Prerequisite:** The control device is switched off.

- 1) Lift the battery packs into the drive unit bracket (see fig. 18, left).
In doing so, ensure that the red arrows on the battery packs point in the driving direction and that the plug contacts engage with the battery contacts.
- 2) Fold the locking bar up to prevent the battery packs from falling out (see fig. 18, right).

8.9.4 Battery charging information

Batteries may only reach their full capacity after **approx. 20** charging cycles. Only if the full capacity of the batteries has been reached can the power wheelchair achieve the stated driving distance range.

At temperatures of **< 0 °C/32 °F** the battery capacity drops by up to **35 per cent** in relation to the capacity for an outside temperature of **20 °C/68 °F**. This shortens the driving distance range of the power wheelchair accordingly. Moreover, the charge level displayed on the control panel can differ from the actual rated battery capacity to a greater extent.

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

- The batteries can be charged at any time, regardless of the remaining charge level.
- It takes about **10 to 12 hours** until a discharged battery (only 1 flashing segment) is fully 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.
- After charging the batteries, the circuit breaker should be deactivated if the wheelchair is not used for more than 3 days.
- The power wheelchair control device must be switched off while the batteries are charging to allow all of the charging current to be fed into the battery.

8.9.5 Battery charger

NOTICE

Improper handling of the battery charger

Damage to the battery charger, damage to the battery due to user error

- ▶ Only use battery chargers from Ottobock, which have been verified and approved by the manufacturer for use with the respective batteries (observe information on the battery charger).
- ▶ Ensure that the information on the battery charger nameplate matches the country-specific voltage of the respective mains grid.
- ▶ Do not use the battery charger outdoors.
- ▶ Only use the battery charger within the specified temperature and humidity limits.
- ▶ Place the battery charger on a level surface.
- ▶ Protect the battery charger against direct sunlight when it is set up near a window.
- ▶ Avoid overheating of the battery charger.
- ▶ Switch the control device off during the charging process so that all of the charging current is fed into the battery.
- ▶ Avoid dust, dirt and moisture.
- ▶ 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 displays.

8.9.6 Charging the batteries

⚠ WARNING

Improper handling of the battery charger

Risk of electric shock due to contact with live components

- ▶ Do not touch live electrical components. The battery charger and its cables are live when the charger is on.
- ▶ Do not remove any insulation or protective covers.

⚠ WARNING

Improper handling of battery chargers

Risk of injury due to negligence in supervision; damage to the battery charger

- ▶ Battery chargers may be used only by persons who have been instructed in their proper and safe use. The user must have read and understood the corresponding instructions for use.
- ▶ Keep the battery charger out of reach of children.
- ▶ Children and persons with limited cognitive abilities may use battery chargers only under the supervision of a responsible person with the relevant knowledge.

⚠ WARNING

Discharge of explosive gases while charging the battery

Burns due to explosion after a user error

- ▶ Ensure sufficient ventilation in enclosed rooms.
- ▶ Do not smoke or light a fire.
- ▶ Sparks must be avoided. Switch the battery charger off and disconnect the mains plug before you disconnect the battery.
- ▶ Do not cover the air vents in the trim.
- ▶ Only use battery chargers that have been verified and approved by the manufacturer for use with the respective batteries (observe information on the battery charger). Failure to comply can result in a battery explosion and subsequent health hazards.

⚠ WARNING**Insufficient ventilation of the battery charger while charging**

Burns due to the battery charger overheating/catching fire

- ▶ Make sure the battery charger cannot overheat during the charging process.
- ▶ Ensure that the cooling fins/ventilation slots on the back of the device are not covered.

NOTICE**Improper charging**

Damage to the battery due to user error

- ▶ Please note the manufacturer's instructions for the batteries being used. Follow the battery manufacturer safety instructions.
- ▶ Avoid deep discharge of the battery. The manufacturer does not assume any liability for damage due to deep discharge.
- ▶ Charge the battery immediately when the control panel indicates a deep discharge (see section "Buttons and display functions").

INFORMATION

Charge the batteries of the power wheelchair for a longer time (over the course of 15 to 20 hours) once a week to increase the battery service life.

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**Charging process via the control panel**

- 1) Turn the control unit on the power wheelchair off.
- 2) Plug the battery charger plug into the charging receptacle on the power wheelchair control panel.
INFORMATION: Please note that charging via the charging receptacle on the control panel may only be carried out at a current of maximum 10 A.
- 3) Connect the battery charger to the mains socket.
 → 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 and pull the plug out of the mains socket when the charging process is complete.
- 5) Disconnect the charging plug from the control panel.
- 6) Turn the power wheelchair control unit on. The power wheelchair is ready to use.

8.10 Seat

The product is equipped with a standard seat.

8.10.1 Safety instructions**⚠ WARNING****Seat cushions and back support pads may ignite**

Burns due to user error

- ▶ The seat and back support upholstery as well as seat cushions, padding and covers fulfil the normative requirements for flame resistance. However, they may still ignite if fire is handled improperly or negligently.
- ▶ Keep away from all ignition sources, especially lit cigarettes.

NOTICE**Improper use**

Damage to the seat surface due to user error

- ▶ Do not allow the seat to come into contact with sharp objects. This also applies to animals such as pet cats with sharp claws.
- ▶ If the seat is expected to come into contact with liquid, such as spilt drinks or episodes of incontinence, always use it in conjunction with a liquid-repellent cover.
- ▶ Only use the Ottobock incontinence covers for this product. Contact the qualified personnel to obtain a spare Ottobock cover.

8.10.2 Contoured pads

The contoured pads provide the user with good lateral support.



The contoured pads are offered in the flat contoured and deep contoured versions. The pads can also be covered in either cloth or artificial leather.

An incontinence cover is available in addition.

Illustrated: Contoured pads in the version with cloth cover, deep contoured.

8.10.2.1 Detaching/attaching the covers**Cloth/artificial leather cover**

Before putting on the incontinence cover, the cloth and artificial leather covers have to be taken off the seat pad. In addition, the cloth cover can be taken off the seat and back pads for general cleaning.

**Taking off/putting on the cover**

- 1) Pull the seat or back pad off the hook-and-loop strap.
- 2) Open the zipper of the cover and remove the foam pad.
- 3) Now the cover can be taken off.
- 4) To put on the cover, insert the foam pad into the cover again with proper alignment.
- 5) Close the zipper and secure the seat or back pad again on the hook-and-loop strap.

Incontinence cover**INFORMATION**

Since the artificial leather cover is relatively tight, the incontinence cover is used with the cloth cover as a rule. Nevertheless, you should take the artificial leather cover off from time to time and check whether liquid has gotten into the foam pad through the seams. You should clean the foam pad if this is the case.

The incontinence cover is positioned under the seat cover. It protects the foam pad against wetness.



Putting on the cover

- 1) Remove the cover.
- 2) Slide the foam pad into the incontinence cover (top left).
- 3) Pull the open end of the incontinence cover up and lay it onto the foam pad (top right).
- 4) Pull the overhanging end of the incontinence cover down and close it on the underside of the foam pad (bottom).
- 5) Put on the cover.

8.10.2.2 Cleaning the covers

Cleaning the cloth cover

INFORMATION

- Replace the cover when it shows signs of advanced wear and tear.
- To disinfect the cover, add a standard hygiene detergent during washing.
- Use an additional incontinence cover in case of heavy incontinence. Observe the care and cleaning instructions for the incontinence cover.

- 1) Close the zipper on the cover before washing.
- 2) Wash the cover at 60 °C [140 °F] using a mild, environmentally friendly detergent.
Recommendation: Wash the cover using the delicate cycle at **40 °C [104 °F]** to prevent excessive wear.
- 3) Allow to air dry. Do not use a clothes drier.

Cleaning the artificial leather cover

The artificial leather cover does not have to be removed for cleaning.

- 1) Wipe the artificial leather cover by hand using a damp cloth and mild, environmentally friendly detergent. Do not wash in the washing machine.
- 2) Allow to air dry. Do not use a clothes drier.
- 3) **As needed:** For disinfection, wipe damp with a water-based disinfectant.

Cleaning the foam pads

- 1) Hand wash all foam components in warm water at **40 °C [104 °F]** using a standard mild detergent. Do not use fabric softener. Rinse thoroughly.
- 2) Allow to air dry. Do not expose to direct heat sources (e.g. sunlight, stove or radiator).

8.10.3 Seat cushion

Wheelchair seat cushions are used for pressure redistribution while sitting. Depending on the version, the seat cushion contains a resilient foam base and possibly additional gel or air-filled inserts. The foam base is anatomically shaped in some cases.

The covers and breathable materials reduce shear forces and ensure a high level of seating comfort for the user.

The seat cushion can be removed for cleaning. Following cleaning, the seat cushion is secured to the seat by a hook-and-loop fastener to prevent sliding.

Detailed information regarding use, cleaning and maintenance can be found in the enclosed instructions for use for the seat cushion.

8.10.4 Adjusting the seat angle

CAUTION

Improper adjustments

Falling of the user out of the seat due to user error

- The user must not sit in the wheelchair during seat angle adjustments.

If necessary, the seat angle can be adjusted in 3 increments (0°, +3° and +6°). Two quick release levers located at the front below the seat are used to change the setting.



Adjusting the seat angle on the standard seat

- 1) Disengage both quick release levers located at the front below the seat (see fig. 23).
- 2) Adjust the desired seat angle by simultaneously lifting the seat slightly and pushing the brackets to the rear.
Make sure that the brackets are fully engaged in the respective locking position.
- 3) Firmly re-tighten the quick release levers after making the adjustment.

8.10.5 Headrest

The head support or head/neckrest stabilises and guides the user's head. It has been mounted to the mounting kit for head/neckrests by qualified personnel.

Detailed information regarding use, maintenance and repair can be found in the included instructions for use.

8.11 Manual seat functions

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

8.11.1 Safety instructions

⚠ WARNING

Driving with mechanical seat functions

Risk of falling or tipping over due to operator error

- ▶ Drive in road traffic and on inclines and downgrades only with a vertical backrest. Always use a belt system.
- ▶ Drive with the back angle adjustment activated only for short distances at home. Always use the speed level 1 for this. Note that the field of vision is limited when driving. Always use a belt system.

⚠ WARNING

Lack of maintenance

Severe user injuries, damage to the product due to maintenance errors

- ▶ Check the adjustment functions for visible signs of damage at least **1 x per month** and ensure all screw connections are tight.

⚠ WARNING

Exposed pinch points

Pinching, crushing of limbs (e.g. fingers) due to lack of caution in danger areas, damage to the product

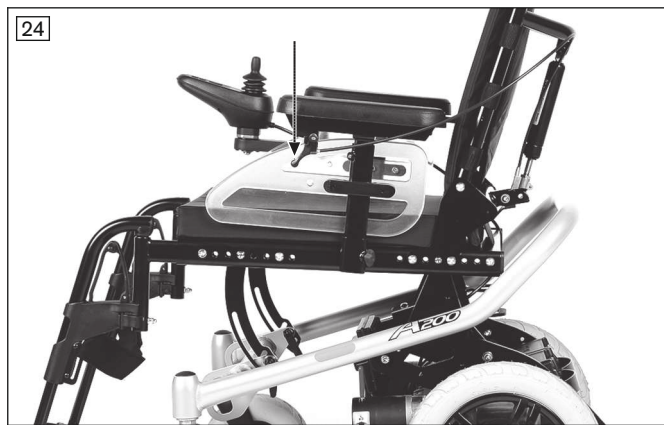
- ▶ Note that when seat functions are used, inherent pinch and shear points are located between the seat frame and the power wheelchair frame.
- ▶ Ensure that no body parts, such as hands or feet, are in the danger area while the seat functions are used.
- ▶ Ensure that no interfering objects, such as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

8.11.2 Manual back angle adjustment

INFORMATION

- ▶ Please also observe the overriding safety instructions in the section "Manual seat functions" > "Safety instructions": see page 37.

The manual back angle adjustment feature enables the backrest to be tilted by up to **30°**. The backrest can be tilted back incrementally to the angle specified above.



Adjusting the back support angle

- 1) Activate the release lever on the arm support (see fig. 24).
 - 2) Move the back support to the desired position.
 - 3) Let go of the release lever.
- The back support is adjusted.

8.11.3 Manually elevating legrests

INFORMATION

- Please also observe the overriding safety instructions in the section "Manual seat functions" > "Safety instructions": see page 37.

The mechanically elevating legrests with a gas compression spring let the user change the angle independently to prevent a constant pressure load or to provide anti-shock support.



Pivoting the leg support

- 1) Activate the release lever on the leg support (see arrow).
 - 2) Move the leg support to the desired position.
 - 3) Let go of the release lever.
- The leg support is adjusted.

Installing/removing the leg support

- 1) To remove the leg support, pull it vertically out of the adapter.
- 2) To install the leg support, insert it vertically into the adapter and push it down.

8.12 Positioning belt (lap belt)

The positioning belt (lap belt) prevents the user from sliding out of the seat.

8.12.1 Adaptation

⚠ CAUTION

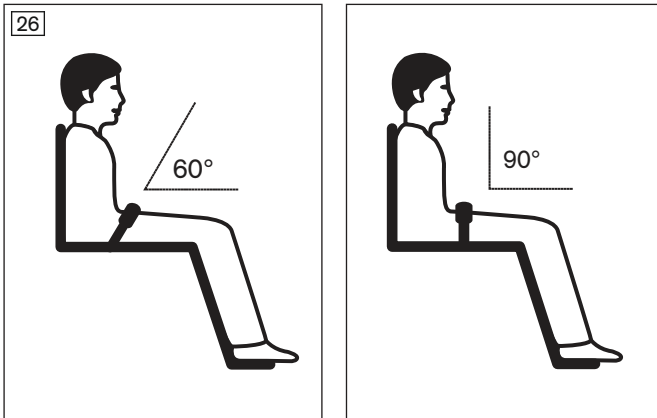
Improper adjustments

Injuries, malpositions, illness of the user due to adjustment changes

- The belt system is an important part of an individual seating unit/seating solution. Do not modify the installation position and basic settings established by the qualified personnel.
- In case of problems with these adjustments (such as an unsatisfactory sitting position), promptly contact the qualified personnel who fitted the product.
- **Immediately** consult the qualified personnel if you notice signs of discomfort or fear when using a belt system.
- Have the basic settings of the belt system checked regularly. Adjustments may be required due to the growth of the user or because of changes in the course of the disease.

Small length adjustments of the belt by the user or an attendant (e.g. for clothing of different thickness) are possible.

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



Positioning the user in the seat

- Place the user in an upright, 90° seated position (if physiologically possible).
- Ensure that the back is up against the backrest padding (if physiologically possible).
- The lap belt should be at an angle of about 60° to 90° to the seat surface and run in front of the pelvic bone.

Possible positioning errors

- The lap belt is positioned above the pelvis of the user in the area of the soft part of the stomach.
- The user does not sit upright in the seat.
- If the lap belt is too loose, the user can shift/slide out to the front.
- During the installation/adjustment, the lap belt is routed over parts of the seating system (e.g. over armrests or seat pads). This causes the lap belt to lose its retaining function.



Adjusting the belt length

- 1) Position the user in the seat. Follow the positioning instructions in the previous section to do so.
- 2) Close the belt.
- 3) Position the 2 halves of the buckle in front of the upper body, centred over the thighs.
- 4) Position the respective half of the buckle at a right angle (see fig. 27, item 1).
- 5) Slide the 2 halves of the closure to the desired position.
- 6) Release the respective half of the buckle.
- 7) Verify the adjustment.

WARNING! The lap belt has to fit closely but not too tightly so the user is not injured. It should be possible to slide two fingers comfortably between the strap and thigh.

8.12.2 Use

⚠ WARNING

Incorrect application of the belt

Throttling, suffocation or strangulation due to sliding forwards in the product

- ▶ The positioning belt (lap belt) must be put on after getting into the product and used at all times while using the product.
- ▶ Ensure that the buckle lies in the middle of the body.
- ▶ Remove any objects or clothing which get caught.

⚠ CAUTION

Improper use

Falling, user falling out due to improper use

- ▶ Only open the positioning belt (lap belt) when the user is ready to get out of the product.
- ▶ Do not leave the user unsupervised if the cognitive abilities of the user could lead to unintentional opening of the belt.
- ▶ Information about subsequent acquisition and mounting is provided by the qualified personnel that handed the product over to you.

CAUTION**Medical risks**

Injuries, pressure sores due to application errors

- ▶ Regular measures for pressure redistribution and skin examinations are required. Should skin irritation and/or skin reddening occur, consult the qualified personnel who adapted and adjusted the product. Do not continue using the product without consultation.

**Applying the lap belt**

> **Prerequisite:** Note the positioning instructions in the previous section.

- 1) Push the 2 halves together until the buckle engages with an audible click.

WARNING! The lap belt has to fit closely but not too tightly so the user is not injured. It should be possible to slide two fingers comfortably between the strap and thigh.

- 2) Pull to check that it is secure.

Opening the lap belt

- 1) Press the release button.
- 2) Open the belt buckle and lay the belt to the side.

Cleaning the belt system**INFORMATION**

Observe the washing recommendations on the product and the information in the corresponding instructions for use provided for the product.

- Straps with metal closures **may not be washed in the washing machine** as the penetration of water could cause corrosion and subsequent malfunctions.
- Clean the belt straps by gently dabbing them with warm soapy water (with some disinfectant) or carefully wipe with a dry, clean, absorbent cloth.

Additional cleaning instructions

- Allow the belts to air dry. Ensure that the belts and pads are completely dry before installation.
- Do not expose the belts to direct heat (e.g. sunshine, stove or radiator).
- Do not iron or bleach the belts.

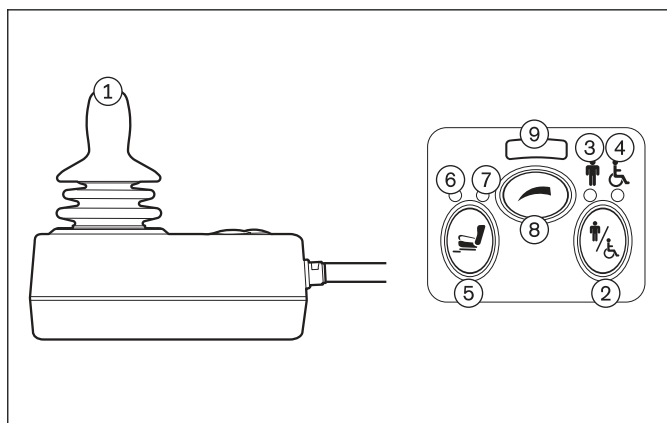
8.13 Control unit accessories**8.13.1 Attendant control**

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

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 a separate input device.



- 1 Joystick
- 2 [Activate/deactivate attendant control] button
- 3 [Attendant control active] LED display (green LED display)
- 4 [Primary control active] LED display (red LED display)
- 5 No function
- 6 No function
- 7 No function
- 8 [Select speed level] button
- 9 [Selected speed level] LED display

Joystick

The attendant uses the joystick to control the speed and driving direction. When a seat option is activated, the joystick operates this seat option.

[Activate/deactivate attendant control] button

The attendant uses this button to assume the control functions from the control panel or to return them to the control panel. The respective state is shown by an LED indicator.

[Attendant control active] LED display

The green LED lights up when the attendant control is activated and the power wheelchair control panel is deactivated.

[Primary control active] LED display

The red LED lights up when the attendant control is deactivated and the power wheelchair control panel is activated.

[Select speed level] button

Pressing the button increases/decreases the speed level. The acoustic signal changes when the maximum speed level is reached.

[Selected speed level] LED display

The LEDs show the currently selected speed level (1–5).

8.14 Additional options

The product may be equipped with additional options.

The options are firmly mounted to the product by qualified personnel or the manufacturer and are pre-adjusted by qualified personnel at delivery.

8.14.1 Control panel holder

Control panel holder, standard

The control panel holder can be pulled off to the front when needed.



Pulling off the control panel holder

- 1) Grasp the control panel holder on the front.
- 2) Pull the control panel holder off to the front.

Installing the control panel holder

- 1) Insert the control panel holder into the rail.
- 2) Slide the control panel in to the rear.

Swing-away control panel holder

The 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.



Swinging away the control panel holder

- 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.



Removing/installing the control panel

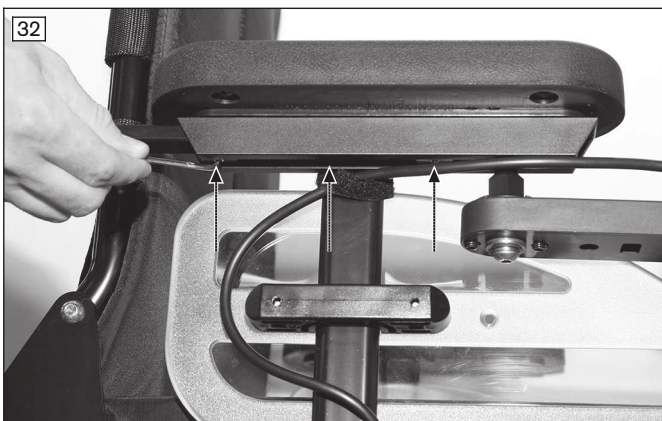
- 1) **Removing:** Pull the control panel up and off the ball head.
- 2) **Installing:** Set the control panel onto the ball head and push it down.

8.14.1.1 Adjusting the control panel position

INFORMATION

By default, the control panel is mounted on the side specified in the order. It can also be mounted on the other side of the power wheelchair later on if the user so desires. Please contact the qualified personnel who delivered the product to you.

The depth position of the control panel is subsequently adjustable. The adjustment is the same for the standard and swing-away control panel holders.



Adapting the control panel position to the forearm length

- 1) Loosen the 3 set screws on the bottom of the armrest.
- 2) Slide the rail with the control panel forwards or backwards.

INFORMATION: If the control panel rail is too long it can be shortened. Please contact the qualified personnel who adjusted your product.

- 3) Tighten the 3 set screws on the bottom of the armrest.

8.14.2 Overview of other options

INFORMATION

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

The power wheelchair can be equipped with additional options:

- Curb climbing assist: To overcome curbs and steps with a maximum height of **80 mm (3")**.
- Puncture-proof tyres: Solid rubber tyres
- Standard seat, junior
- Armrest accessories: Special adapters for the armrests in our accessories catalogue
- Mounting kit for head/neck supports: For installation on the back support tube
- Additional lights
- Tool kit
- Airman pump
- Crutch holder
- Tray
- Accessories bag
- Mobile phone bag

8.15 Disassembly and transport

8.15.1 Safety instructions

⚠ WARNING

Improper transportation in aircraft

Burns, explosion or damage to the battery due to failure to observe the rules for transportation

- ▶ Follow the rules of the IATA (International Air Transport Association) and the respective airline when transporting the power wheelchair in an aircraft. To this end, the fuse must always be removed and the battery connectors must be insulated so that they are short-circuit-proof prior to check-in of the power wheelchair as luggage.
- ▶ 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 website. The manufacturer recommends contacting the airline directly before every flight to obtain information regarding special transport regulations.
- ▶ Use the SSR (special service request) codes to describe the type of limited mobility if necessary. You can for example research these on the Internet.

⚠ CAUTION

Securing the power wheelchair insufficiently during transport

Crushing, pinching of body parts due to failure to observe transportation instructions

- ▶ During transportation in vehicles or aircraft, 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 a 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.

NOTICE

Lifting the power wheelchair incorrectly

Damage to the power wheelchair due to failure to observe transportation instructions

- ▶ Hoisting devices used for transportation must have a sufficient capacity. For more information about weight, see the section "Technical data" (see page 56).
- ▶ Do **not** attach the hoisting devices on moveable or adjustable components.
- ▶ Ensure that the seat is lowered all the way and the backrest is in a vertical position prior to loading and for transporting the power wheelchair.

8.15.2 Reducing the transportation size

The transportation size can be reduced in a few steps to make transporting the product easier.

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Preparing for transport

- 1) Turn the control device off.
- 2) **If needed:** Remove the control panel (see page 41) and carefully set it aside.
- 3) Remove the side panels (see page 19) and place them on the seat.
- 4) Fold the back support forward and onto the seat surface (see page 21).
- 5) Remove the leg supports and set them aside (see page 20).
- 6) **If needed:** Remove the battery packs (see page 31).

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Separating the frame and drive unit bracket

To further reduce the size of the power wheelchair, the frame can be separated from the drive unit bracket:

> **Prerequisite:** The battery packs have been removed (see page 31).

- 1) **If needed:** Pull the seat lock release strap and fold the locking bar all the way back (see fig. 34).
- 2) On the drive unit bracket, push down on the step points above the anti-tipper rollers until these touch the ground (see fig. 35, left).
- 3) Slightly lift the frame to separate it from the drive unit bracket (see fig. 35, right).
- 4) Separately set aside the frame and drive unit bracket.

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Fold the seat bottom onto the frame

The seat bottom can be folded down to further reduce the size of the frame:

- 1) Release both quick-release levers. They are located below the seat (see fig. 36).
- 2) Fold the seat bottom down by simultaneously lifting the seat slightly and pushing the brackets to the rear.
Make sure that the brackets are fully engaged in the respective locking position.
- 3) Firmly re-tighten the quick release levers after making the adjustment.



Reducing the required space

- 1) Set the battery packs back into the drive unit bracket.

INFORMATION: Ensure that the red arrows on the battery packs point forward.

- 2) Fold the lock lever up again to prevent the battery packs from falling out (see fig. 37).

- 3) **If needed:** Lay the control panel on top of the battery packs (not illustrated) or insert it into the corresponding holder.

INFORMATION: Ensure that the control panel is not switched on and that cables are not pinched.

→ Now the power wheelchair is ready to transport and can be stowed in a vehicle.



Disassembling the power wheelchair for transportation

The power wheelchair can also be fully disassembled for transportation. This has the following advantages:

- It takes up very little transportation space.
- The power wheelchair disassembled into single components is easier to handle.
- **NOTICE:** Secure the disassembled parts of the power wheelchair properly so that they cannot slide.

8.15.3 Preparing for transport

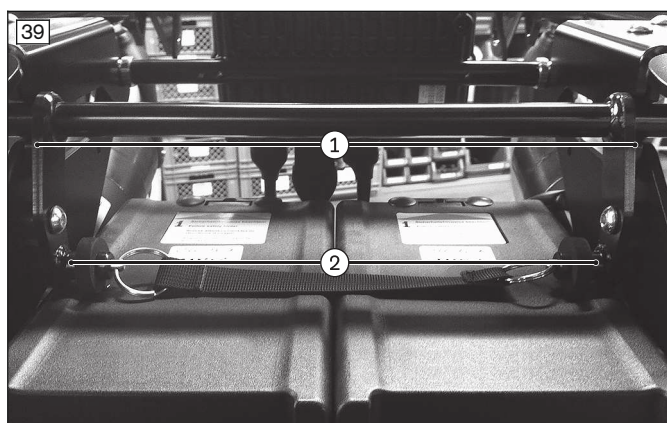
Transporting the power wheelchair as a whole

- 1) **If needed:** Turn the control unit off (see page 23).
- 2) **If needed:** Lock the brake (see page 30).
- 3) Use cargo straps to attach the power wheelchair to the transport vehicle.

8.15.4 Assembly

To reassemble the power wheelchair, the steps described above must be carried out in reverse order.

If the frame was separated from the drive unit bracket for transportation of the power wheelchair, correct locking of the frame has to be ensured during assembly:



Connecting the frame to the drive unit bracket

- 1) Prepare the drive unit bracket and frame.
- 2) Pull the seat lock release strap and fold the locking bar all the way down (see fig. 34).
- 3) On the drive unit bracket, push down on the step points (frame protection rollers) above the anti-tipper rollers until these touch the ground (see fig. 35, left). The drive unit bracket is now at an angle.
- 4) Set the frame onto the drive unit bracket from above (see fig. 35, right).



- 5) Pull the seat lock release strap and fold the locking bar all the way up (see fig. 34).

INFORMATION: In doing so, ensure that the locking bar is pushed back into its proper position (see fig. 39, item 1). Both locking bolts have to engage properly (see fig. 39, item 2).

CAUTION! Falling due to lack of frame stability. Check that the locking bolts are properly engaged at both sides on the outside of the base support. The bolts must be clearly visible so that the frame cannot disengage from the drive unit bracket (see fig. 40).

- 6) Move the seat bottom to the desired angle (see page 36).

8.16 Use in vehicles for transporting persons with reduced mobility

⚠ WARNING

Use in vehicles for transporting persons with reduced mobility

Serious injuries in case of accidents due to user error

- ▶ Always use the seats and personal restraint systems in the vehicle for transporting persons with reduced mobility first. This is the only way to ensure optimum protection of passengers in the event of an accident.
- ▶ If the product is to be used as a seat in a vehicle for transporting persons with reduced mobility, the safety elements offered by the manufacturer and appropriate fastening and personal restraint systems must be used. For more information, please also refer to our brochure with the order number 646D158.
- ▶ Never transport more than one person in the power wheelchair.
- ▶ Note the approved climbing ability for driving on the ramp to the vehicle for transporting persons with reduced mobility (see the section "Technical data"). Also make sure that you can handle the product safely within the permissible conditions for use.
- ▶ Turn off the control device after positioning the power wheelchair in the vehicle for transporting persons with reduced mobility.
- ▶ Use the power wheelchair in a vehicle for transporting persons with reduced mobility only if the seat is all the way down and the back support is in a vertical position.
- ▶ Note the limitations regarding installed options (see page 49).

⚠ WARNING

Using the belt system or positioning aid as a passenger restraint system in vehicles for transporting persons with reduced mobility is prohibited

Serious injuries due to improper handling of the product

- ▶ Under no circumstances may the belts and positioning aids that come with the product be used as part of a passenger restraint system in vehicles for transporting persons with reduced mobility.
- ▶ Note that the belts and positioning aids that come with the product are intended only as additional support for the user sitting in the product.

The product has been tested by the manufacturer according to ANSI/RESNA and ISO 7176-19 and may be used as a seat in vehicles for transporting persons with reduced mobility subject to the conditions defined below.

The product must be sufficiently secured during transport in vehicles for transporting persons with reduced mobility. The illustrations that follow show an example for anchoring in a motor vehicle.

The manufacturer is not responsible for the fastening systems that are used. Ensure that only fastening systems that meet the applicable legal requirements and are designed for the overall weight of the product including the user are used.

The transport weight of the person to be transported in a vehicle for transporting persons with reduced mobility corresponds to the maximum permissible user weight (see page 56).

8.16.1 Required accessories

To use the power wheelchair as a seat in a vehicle for transporting persons with reduced mobility, additional accessories have to be mounted (491S00=SK024 anchor point kit). The qualified personnel who fitted the wheelchair can provide more information.

8.16.2 Using the product in a vehicle

⚠ WARNING

Positioning in vehicles for transporting persons with reduced mobility

Serious injuries in case of accidents due to user error

- ▶ Positioning of the product in vehicles for transporting persons with reduced mobility may only be performed by the qualified personnel.
- ▶ The product must always face forwards when it is used as a seat in a vehicle for transporting persons with reduced mobility.
- ▶ Instruct the qualified personnel regarding the mounting points on your product described below.

⚠ WARNING

Inadequate transportation safety

Loss of safe restraint due to failure to observe transportation instructions

- ▶ Observe the following instructions for correct transport safety in the vehicle for transporting persons with reduced mobility.
- ▶ If necessary, instruct the qualified personnel on the following information.

Securing the product in the vehicle for transporting persons with reduced mobility

The wheelchair is secured in the vehicle for transporting persons with reduced mobility with the help of the fixation kit. The fixation points are marked with stickers. The stickers indicate where the user has to engage the hooks of the safety belt system:



Securing the power wheelchair in the vehicle

- 1) Position the power wheelchair in the vehicle for transporting persons with reduced mobility. For more information, refer to section 5 in the brochure "Transporting persons with reduced mobility", order number 646D158.
- 2) Turn the control device off (see page 27).
- 3) Verify brake locking. Engage the brakes if needed (see page 30).
- 4) Apply the attachment straps (see below).



Applying the front attachment straps

- 1) Hook each of the front attachment straps into its corresponding front anchor point from the outside (see fig. 42).
- 2) Tighten the front attachment straps.

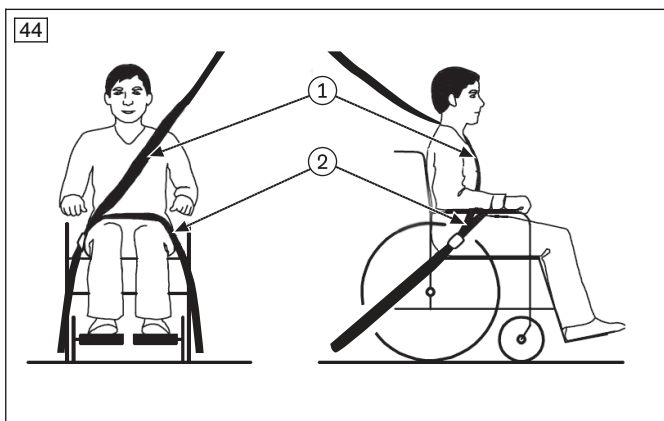


Applying the rear attachment straps

- 1) Hook each of the rear attachment straps into its corresponding rear anchor point from below (see fig. 43).
- 2) Tighten the rear attachment straps.

Information on correct transport safety of the user in the vehicle for transporting persons with reduced mobility

- Using the personal restraint system of the vehicle for transporting persons with reduced mobility is required. If the wheelchair is equipped with a fixation kit (anchor point adapters), the three-point personal restraint system is attached in the vehicle for transporting persons with reduced mobility as follows:
 - The lap belt of the personal restraint system is usually attached by the qualified personnel to the left and right sides respectively on the mounting point/pin of the anchor point adapters.
 - The shoulder harness of the personal restraint system is usually mounted on the vehicle pillar and is attached by the qualified personnel to the corresponding mounting point/pin provided on the lap belt.



- The straps of the personal restraint system must always be routed close to the user's body. The straps must not be routed over the side panels and wheels (see fig. 44 item 2).
- The shoulder harness must always be routed over the user's shoulder. The qualified personnel must secure the shoulder harness above and behind the user (see fig. 44, item 1).
- The belt strap must not be twisted on the user's body.
- The wheelchair restraint belts secured to the vehicle floor must be stretched as taut as possible once they are attached.

Placement of the personal restraint system integrated in the vehicle for transporting persons with reduced mobility

Fastening the restraint lap belt of the vehicle for transporting persons with reduced mobility is mandatory.

The power wheelchair's lap belt should be used in addition to position the passenger during transportation.



Fastening the restraint lap belt

- 1) Guide each end of the restraint lap belt from the inner side of the seat to the outer side of the seat.
- 2) Engage the end of the restraint lap belt on the pin (see fig. 45).

8.16.3 Restrictions for use

WARNING

Risk of accidents and injury due to using the product with certain settings and/or installed options

Severe injury in case of accidents due to options coming loose

- ▶ Before using the product as a seat in a vehicle for transporting persons with reduced mobility, remove options that need to be taken off for safe transportation. Please observe the following table.
- ▶ Stow all dismantled components securely in the vehicle for transporting persons with reduced mobility.
- ▶ Please note that certain settings on the product exclude the use of the product in a vehicle for transporting persons with reduced mobility.

Accessories*	Transportation in a vehicle for transporting persons with reduced mobility not possible	Remove option	Secure option on product
Head support with mounting kit		X**	X***
Tray, swing-away to the side		X	
Lap belt with buckle			X****
Control panel holder, swing-away, height-adjustable			X

* The following list provides an overview. Not all accessories are installed on all products.

** If the installed head support is not crash-tested, please remove the option.

*** The head support can remain on the power wheelchair if it is crash-test approved. Please refer to the order form for the approved head supports.

**** The lap belt can be used to position the passenger during transportation. Using the personal restraint system is nevertheless required.

8.17 Care

8.17.1 Safety instructions

CAUTION

Lack of or improper cleaning

Health hazard due to infections, damage to the product due to user error

- ▶ Clean the product at regular intervals.
- ▶ Water must not come into direct contact with the electronics, motor or batteries under any circumstances during cleaning. Never use a water jet or high-pressure cleaning apparatus to clean the product.
- ▶ To avoid contamination with germs, clean seat cushions and back support upholstery whenever they get soiled.
- ▶ Check the driving behaviour of the product after cleaning it.

INFORMATION

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

8.17.2 Cleaning

Clean the product regularly depending on the degree of soiling and frequency of use, **at least 1x per month**:

- 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.
- Do not use any aggressive cleaners, solvents or hard brushes etc.
- Do not spray the product with a pressure washer.
- Observe additional cleaning instructions in the section "Lap belt": see page 38.

8.17.3 Disinfection

- 1) Thoroughly clean the pads before disinfecting.
- 2) Wipe all parts of the product with a disinfectant.

Important information about disinfecting

- Only use colourless water-based disinfectants. Follow the instructions for use provided by the disinfectant manufacturer.
- Prior to disinfection, clean the seat and back padding, control panel and armrests.

9 Maintenance and repair**9.1 Maintenance****⚠ WARNING****Insufficient maintenance**

Severe user injuries, damage to the product due to failure to observe maintenance intervals

- ▶ Only carry out the maintenance tasks described in this section. All other maintenance and service tasks may only be carried out by qualified personnel.
- ▶ The functionality and operating safety of the product must be verified and a service performed at least **once per year**.
- ▶ For users with a changing anatomy (for example body dimensions, weight) or users with a changing clinical picture, have the product inspected, adjusted and serviced at least **once every six months**.

⚠ WARNING**Failure to inspect important product features**

Severe user injuries, damage to the product due to maintenance errors

- ▶ Inspect the seat adjustment features for visible signs of damage at least **1 x per month** and ensure all screw connections are tight.
- ▶ Maintain sufficient air pressure in the tyres. The correct tyre pressure is printed on the tyre casing and listed in the section "Technical data".

- The function of the product should be checked **before each use**.
- The product may not be used if defects are noted. This applies in particular in case of instability of the product or altered driving characteristics as well as problems with the user's seating position or the stability of the seat. Inform the qualified personnel promptly for the rectification of defects.
- This also applies if loose, worn, bent or damaged components, cracks in the frame or broken frame components are identified.
- Some maintenance tasks can be carried out to a specified extent by the user at home. Further information is found in the section "Maintenance intervals" (see page 50).
- Failure to maintain the product can lead to injuries for the user of the product.

9.1.1 Maintenance intervals

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

Component	Activity	Prior to every use	Weekly	Monthly
Drive wheels	Check whether wheel mounts are securely fastened			X
	Check whether the central nut on the drive shaft is securely fastened			X
	Check whether wheels rotate freely and without axial runout			X
	Check directional stability of the power wheelchair	X		
Caster wheels	Check the steering play of the caster wheels			X
	Check whether the fork fits in the adapter without play			X
	Check whether wheels rotate freely and without axial runout			X
	Check whether the mounting nuts are tight			X
Seat attachment	Check whether mounting screws are fastened properly			X
Leg support	Check ratchet mechanism for functionality and firm fit			X
	Check for damage to foot supports			X
	Check ratchet mechanism for functionality and firm fit			X

Component	Activity	Prior to every use	Weekly	Monthly
Leg support, mechanically elevating	Check for damage to foot supports			X
	Visual inspection for scratches and oil leaks on the piston rod			X
Padding/straps	Ensure padding is in perfect condition			X
	Check the attachment straps for wear			X
	Check belt buckle for functionality		X	
Tyres	Check air pressure (see tyre sidewall)			X
	Check for sufficient tread depth (min. 1 mm)			X
	Check for damage			X
Batteries	Check battery charge level	X		
Lighting	Check for external damage		X	
	Verify functionality	X		
Electronics	Check whether the control device is functioning properly (inform qualified personnel of any LED error messages)	X		
	Check whether the battery charger is functioning properly (inform qualified personnel of any LED error messages)		X	
	Check plug connections			X
Brake	When brake is disengaged: check whether the LED indicator on the control panel is flashing	X		
	When brake is engaged: check braking function by trying to push the chair			X
Side panel and arm support	Check whether mounting screws are fastened properly			X
	Check whether screw connections between the arm support and the control panel are tight	X		
	Check arm support for damage		X	
Seat attachment	Check whether mounting screws are fastened properly			X
Gas compression spring (option)	Visual inspection for scratches and oil leaks on the piston rod			X
Product	Check the legibility and completeness of all labels and markings on the product			X

9.2 Repair

WARNING

Prohibited repairs

Severe user injuries, damage to the product due to adjustment and installation errors

- Only carry out the repairs described in this section. All other repairs may only be carried out by the qualified personnel.

9.2.1 Replacing a defective fuse

INFORMATION

When replacing, only use fuses of the same type. Note the printed rating.

To replace a fuse: see page 18.

Should the fuse burn out repeatedly after a short time for no discernible reason, contact the qualified personnel.

9.2.2 Wheel replacement

⚠ CAUTION

Uncontrolled movements of the power wheelchair

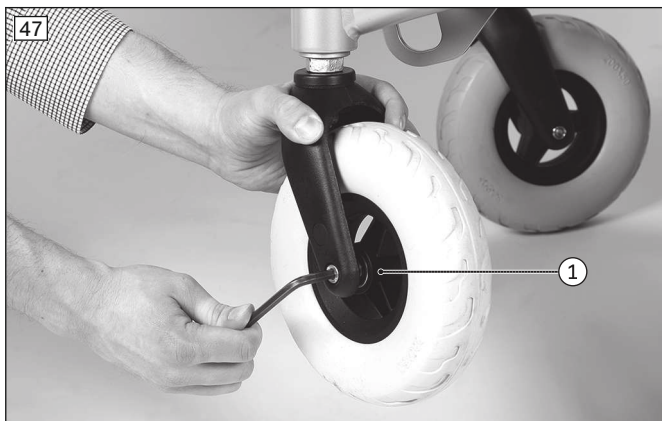
Crushing, pinching, blows due to non-observance of repair instructions

- ▶ When jacking up, secure the power wheelchair to prevent it from slipping or tilting to the side by placing a suitable base under the drive unit bracket.
- ▶ Ensure that body parts, such as hands or head, are never in the danger zone.



Replacing the drive wheel

- 1) Turn the control unit off.
- 2) Jack up the power wheelchair so that the wheel you want to replace can rotate freely.
- 3) Loosen and remove the 4 screws around the wheel hub.
- 4) Pull the drive wheel forward off the wheel hub.
- 5) Slide the new drive wheel onto the wheel hub.
- 6) Tighten all 4 screws using the torque wrench. The torque value is **25 Nm**.



Replacing the caster wheel

- 1) Turn the control unit off.
- 2) Jack up the power wheelchair so that the wheel you want to replace can rotate freely.
- 3) Loosen the axle screw using an Allen wrench and pull out the axle.
- 4) Remove the caster wheel from the caster fork.
- 5) Insert the new caster wheel into the caster fork.
- 6) Slide in the axle.
- 7) Tighten the axle screw using a torque wrench. The torque value is **10 Nm**.

9.2.3 Replacing the inner tube and tyre

The caster wheels are generally puncture-proof and can only be changed as a whole.

The rims of the drive wheels are in two parts and can be separated by removing the Allen head screws.



Making repairs

- 1) Remove the wheel in question (see previous section).
- 2) Let all air out of the tyre and push the valve fully into the rim.
- 3) Loosen the 5 Allen head screws connecting the two parts of the rim (see fig. 48, left).
- 4) Pry back the tyre from the edges of the rim.
- 5) Pull out the defective inner tube (see fig. 48, right).
- 6) Repair the inner tube with a standard tyre repair kit or replace it.
- 7) Reassemble the rim. Firmly tighten the screws.
- 8) Reinstall the wheel (see previous section).

9.2.4 Replacing the battery

The battery packs may only be replaced by qualified personnel.

9.3 Troubleshooting

INFORMATION

In the event of communication problems in the bus system of the controls, the system triggers an emergency stop and thus prevents 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.
- Inform the qualified personnel immediately.

Faults are displayed on the LED display fields on the control panel. The following table shows the individual notifications as well as the associated fault sources and possible causes and measures.

Qualified personnel should be contacted if the measures described here do not resolve the faults completely. Qualified personnel can read the exact error codes with a handheld programming device and can perform a targeted system analysis.

The control device stores all errors that have occurred in a list. The qualified personnel reads this information, for example during a general overhaul of the power wheelchair. The qualified personnel determines future service and maintenance intervals based on the saved data.

9.3.1 Types of notifications

Warning

A warning indicates a status or malfunction of one or several components of the power wheelchair. The function of components without 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.

Error

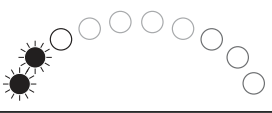
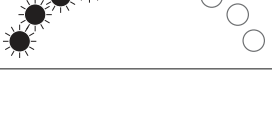
An error affects one or several functions of the power wheelchair. The power wheelchair and its functions are not fully operational until the fault is resolved.

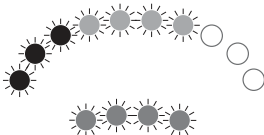
9.3.2 Procedure for warnings and error messages

- If a warning or error message appears, the power wheelchair can often no longer be driven. In this case, the error message must be noted, the control unit switched off and the qualified personnel informed of the error message immediately.
- If the error is related to a component which is not currently being used (e.g. to an actuator for adjusting the seat function), the driving function of the power wheelchair is still theoretically usable. An error message simply appears at regular intervals.
- Nonetheless, the control unit **must** be switched off for several minutes in this case. If the error message continues to appear after switching on the control unit, the error message **must** be noted, the control unit switched off again and the qualified personnel informed of the error message immediately.

9.3.3 Wheelchair control unit error overview

VR2 control panel

Flashing LED	Error/warning	Cause	Possible corrective action
	Battery undervoltage	Battery deep discharge Battery cable malfunctioning or faulty connection to the battery	Charge as soon as possible Check the connection to the battery (charge the battery if the connection is good)
	Left motor not connected	e.g. defective plug connection, cable break	Check plug connections and cable to left motor
	Wiring fault on the left motor	e.g. cable break, no connection to battery	Check cable connections to left motor; check connection to battery terminal
	Right motor not connected	e.g. defective plug connection, cable break	Check plug connections and cable to right motor

Flashing LED	Error/warning	Cause	Possible corrective action
	Defective cables on right motor	e.g. cable break, no connection to battery	Check cable connections to right motor; check connection to battery terminal
	Driving function blocked due to external factors	Battery charger may be connected	Disconnect battery charger
	Joystick fault	Joystick not in home position when the unit is turned on	Move the joystick to the home position before switching the unit on
	Controller fault	Defective controller	Check all connections
	Brake release	Open brake release	Check motor brakes Check connection to the controller
	Battery overvoltage	Voltage too high Loose battery contacts	Continue driving slowly Check cabling/plug contacts
	Communication error between control panel (joystick) and controller	Defective cable, loose plug connection	Check cabling/plug contacts

9.3.4 Attendant control error overview

VR2 attendant control

Flashing LED	Error/warning	Cause	Possible measure
	Control unit fault	Fault in the control unit	Read error on the control panel and take corresponding action (see "Wheelchair control unit error overview" table)
	Attendant control fault	Defective attendant control	Switch off attendant control and turn control panel off/on
	Joystick error	Attendant control joystick not in home position when the unit is turned on	Switch off attendant control and move joystick to home position before switching the unit on Switch control panel off/on
	Communication error between the attendant control (joystick) and the control panel/controller	Defective cable, loose plug connection	Check cabling / plug connections

9.4 Behaviour in case of breakdowns

In case of breakdowns, promptly inform the qualified personnel who adjusted the product or the manufacturer's service department. All relevant details have to be provided, such as the type of power wheelchair, type of breakdown (e.g. problems with the motor) and if possible, the serial number of the power wheelchair.

To get help faster, noting the address and telephone number of the responsible specialist dealer in the field provided on the back of these instructions for use is recommended. This information should be kept on hand, especially when driving outdoors.

10 Disposal

10.1 Safety instructions

NOTICE

Disposal of batteries

Pollution due to incorrect disposal

- ▶ Observe the information printed on the batteries by the manufacturer.
- ▶ Note that the batteries may not be disposed of as household waste.

10.2 Disposal information

Return the product to the qualified personnel for disposal.

Defective batteries are taken back by the qualified personnel in exchange when new batteries are purchased.

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

10.3 Information on re-use

⚠ CAUTION

Used seat padding

Functional and/or hygienic risks due to re-use

- ▶ Replace the seat padding if the wheelchair is to be re-used.

The product is suitable for re-use.

Similar to second-hand machines or vehicles, products that are being re-used are subject to increased strain. Features and performance must not change in a way that could impair the safety of users or third parties during the period of use.

The relevant product must be thoroughly cleaned and disinfected before re-use. Then have the product inspected by qualified personnel with respect to its condition, wear and tear, and damage. Worn and damaged parts as well as components that do not fit or are unsuitable for the user must be replaced.

Detailed information on replacing components as well as information on the required tools can be found in the service manual.

11 Legal information

All legal conditions are subject to the respective national laws of the country of use and may vary accordingly.

11.1 Liability

The manufacturer will only assume liability if the product is used in accordance with the descriptions and instructions provided in this document. The manufacturer will not assume liability for damage caused by disregarding the information in this document, particularly due to improper use or unauthorised modification of the product.

11.2 Warranty

Further information on the warranty terms and conditions is available from the qualified personnel that adapted this product or the manufacturer's service department.

11.3 Privacy notice

Some components of the product contain data storage modules that temporarily or permanently store data. These data are exclusively of a technical nature and serve the safety of the user, the identification and elimination of errors and/or optimising the functionality of the product.

Depending on the model and version, malfunctions and faults of components relevant for safety as well as status messages of individual components are recorded. The data are available in anonymised/pseudonymised form when the data storage modules are read in case of service. Ottobock stores, processes and uses the data according to the applicable data protection regulations.

For detailed questions please contact: datenschutz@ottobock.de. For questions regarding treatment, please contact the qualified personnel.

11.4 Lifetime

Expected lifetime: **5 years**

The design, manufacturing and requirements for the intended use of the product are based on the expected life-time. These also include the requirements for maintenance, ensuring effectiveness and the safety of the product.

12 Technical data

INFORMATION

- Much of the technical data below is given in mm. Please note that product settings – unless otherwise specified – cannot be adjusted in the mm range but only in increments of approx. **0.5 cm** or **1 cm**.
- Note that the values achieved during adjustment may deviate from the values specified below. The deviation can be **±10 mm** and **±2°**.

Application class (according to DIN EN 12184)

Class A

Dimensions and weights	
Seat depth	Standard seat: 340 – 500 mm (13.4" – 19.7") Contour seat: 360 – 480 mm (14.2" – 18.9") Standard seat Junior: 340 – 400 mm (13.4" – 15.7")
Seat width	Standard seat: 340 – 480 mm (13.4" – 18.9") Contour seat: 380 – 480 mm (15" – 18.9") Standard seat Junior: 340 – 400 mm (13.4" – 15.7")
Seat height	Standard seat: 430/480 mm (16.9"/18.9") Contour seat: 510/560 mm (20.1"/22") Standard seat Junior: 430/480 mm (16.9" – 18.9")
Lower leg length	Standard seat: 250 – 470 mm (9.8" – 18.5") Contour seat: 280 – 540 mm (11" – 21.3") Standard seat Junior: 150 – 470 mm (5.9" – 18.5")

Dimensions and weights	
Angle of the seat surface	0° – 6°
Angle of leg to seat	90° – 170°
Distance from arm support to seat	225–325 mm (8.9"–12.8")
Front position of the arm supports	300–580 mm (11.8"–22.8")
Arm support height	225–350 mm (8.9"–13.8") Standard seat Junior: 205–275 mm (8.1"–10.8")
Arm support length	260 mm (10.2")
Back support height	450/500/550 mm (17.7"/19.7"/21.6")
Back support angle	Manually, in 10° increments: -9°/1°/11°/21° or 0°/10°/20°/30°
Back support angle adjustment	Mechanical: adjustable by up to 30°
Overall width	570 mm (22.4")
Overall height	1030 mm (40.6")
Overall length	1000 mm (39.4")
Weight when empty*	66 kg (145.5 lbs)
Transport weights	See "Weight", thereof: Side panel: < 1 kg (2.2 lbs) Leg support: approx. 1 kg (2.2 lbs) Leg support, mechanically elevating: 1.8 kg (4 lbs) Battery, removable: approx. 11 kg (24.2 lbs; each)
Max. load (permissible user weight)	100 kg (220 lbs) Model with standard seat, Junior: 75 kg (165.3 lbs)
Turning radius	870 mm (34.2")
Turning circle**	1290 mm (50.8")
Caster wheel tyre size	8" (puncture-proof)
Drive wheel tyre size	12" (pneumatic); optional 12" (puncture-proof)

Dimensions and weights	
Tyre pressure***	12" drive wheel: 3.5 bar/350 kPa/50 PSI

* Depending on installed options

** = 3-point turn by 180°

*** Adjust the tyre pressure according to the specifications on the tyre sidewall to prevent injuries or damage to the product.

Electrical system*	
IP protection rating (according to DIN EN 60529)	IPX4
Operating voltage	24 V
Batteries	2 x 12 V; 29.75 Ah (C5) / 35 Ah (C20); AGM; maintenance-free
Lighting: 1 x LED headlight with twilight sensor	24 V, maintenance-free
Fuse	60 A in each battery pack
Battery charger	For more information, see the included battery charger instructions for use

* The product meets all requirements under ISO 7176-14.

Control device	
Model	VR2 (controller and control panel)
IP protection rating (according to DIN EN 60529)	IP54
Operating voltage	24 V DC
Max. output current per motor	60 A
Force for operating the joystick on the standard control panel	1.6 N

Driving data	
Speed*	6 km/h (3.7 mph)
Climbing ability (basic model)**	7° (12%)
Dynamic stability – uphill***	7° (12%)
Static stability – uphill/downhill	9° (15.8%)
Static stability – sideways	9° (15.8%)
Maximum obstacle height	15 mm (0.6")
Driving distance range (on level surfaces)****	Approx. 15 km (9.3 miles)
Braking distance (according to DIN EN 12184:2009)*****	At 6 km/h (3.7 mph): 1,000 mm (39.4") – on level surfaces

* The specified speed can vary by $\pm 10\%$.

** The control device and the motors must be protected against overloading. Therefore, the continuous climbing ability depends on the overall weight (wheelchair weight + user weight + load), as well as the ground conditions, exterior temperature, battery voltage and driving style of the user. In individual cases, the continuous climbing ability may be significantly lower than the specified climbing ability.

*** Approved climbing ability with lowered seat functions, upright back support and lowered leg supports.

**** The specified driving distance range was determined under defined conditions according to ISO 7176-4. In practice, the driving distance range can be reduced by up to **50 per cent**. For information on this, see the section "Driving distance range" in the instructions for use (user).

***** The braking distance can be correspondingly longer due to user weight, installed options and condition of the tyres as well as weather and surface conditions.

Allowable environmental conditions	
Operating temperature	-15 °C to +40 °C (+5 °F to +104 °F)
Transport and storage temperature	-15 °C to +40 °C (+5 °F to +104 °F)
Relative humidity	45% to 85%; non-condensing

Corrosion protection	
Corrosion protection	Dip-coated frame (KTL coating)

13 Appendices

13.1 Threshold values for wheelchairs transportable by train

INFORMATION
► The products in this series fully satisfy the minimum technical requirements of regulation (EU) No. 1300/2014 regarding train accessibility for people with disabilities. However, not all versions can comply with all threshold values due to different settings. ► With the help of the table that follows, you or the qualified personnel can take measurements and verify whether the specific product in question meets the threshold values.

Feature	Threshold value (according to regulation (EU) No. 1300/2014)
Length	1200 mm (47.2"); plus 50 mm (2") for the feet
Width	700 mm (27.6"); plus 50 mm (2") on each side for the hands when moving
Smallest wheels	approx. 3" or greater according to the regulation, the smallest wheel must be able to accommodate a gap measuring 75 mm (3") horizontally and 50 mm (2") vertically
Height	max. 1375 mm (54.1"); including a 1.84 m (72.5") large male wheelchair user (95th percentile)
Turning radius	1500 mm (59.1")
Maximum weight	300 kg (661 lbs); for wheelchair with occupant, including baggage
Maximum obstacle height that can be overcome	50 mm (2")
Ground clearance	60 mm (2.4"); at an upward slope angle of 10°, ground clearance must measure at least 60 mm (2.4") under the foot rest for going forward at the end of the slope
Maximum inclination angle on which the wheelchair will remain stable	6° (dynamic stability in all directions) 9° (static stability in all directions, also when wheel lock engaged)

13.2 Required tools

The following tools are required for adjustments and maintenance work:

- Allen keys in sizes 2 – 8 mm
- Ring and open-ended spanners in sizes 8 – 24
- Socket wrenches in sizes 8 – 20 mm
- Phillips head screwdriver (size: 2)
- Torque wrench (measurement range 5-50 Nm)

13.3 Torque values of the screw connections

Unless otherwise specified, screw connections are tightened with the following torque values:

- Thread diameter M4: 3 Nm
- Thread diameter M5: 5 Nm
- Thread diameter M6: 10 Nm
- Thread diameter M8: 25 Nm

13.4 Sound emission information

INFORMATION
► The products in the series were tested for compliance with maximum sound emission requirements according to the ISO 7176-14 standard. ► They fully meet the requirements according to the areas of application identified below.

Area of application	Maximum sound pressure level ¹⁾
In enclosed rooms	65 dB(A)

Area of application	Maximum sound pressure level ¹⁾
Outside of enclosed rooms	75 dB(A)

¹⁾ Depending on the area of application according to ISO 7176-14



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