

**alber**

**KRAFT, DIE AUS DEN  
RÄDERN KOMMT.**

***E-MOTION***

**Gebrauchsanweisung e-motion M25**

**DE**

**User manual e-motion M25**

**EN**

**Instructions d'utilisation e-motion M25**

**FR**

**Manual de instrucciones e-motion M25**

**ES**

**Istruzioni per l'uso e-motion M25**

**IT**

**Brugsvejledning e-motion M25**

**DK**

**Gebruiksaanwijzing e-motion M25**

**NL**

**Bruksanvisning e-motion M25**

**NO**

**Instruktionsbok e-motion M25**

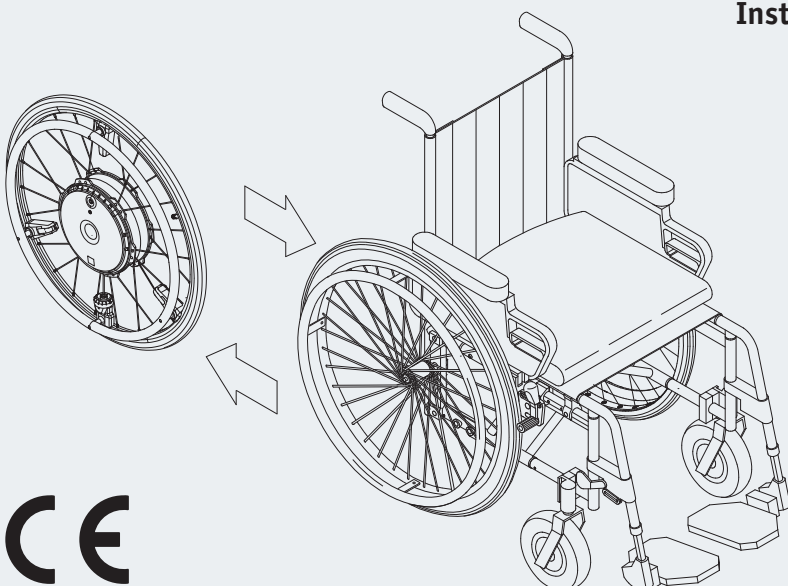
**SE**

**Käyttöohjeet e-motion M25**

**FI**

**Instruções de uso e-motion M25**

**PT**



**CE**

**Service Center (Deutschland)**

Montag bis Donnerstag von

8.00 - 18.00 Uhr

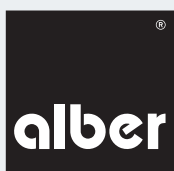
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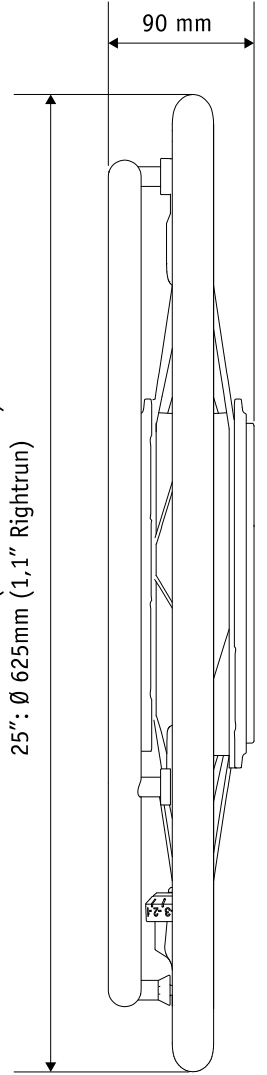
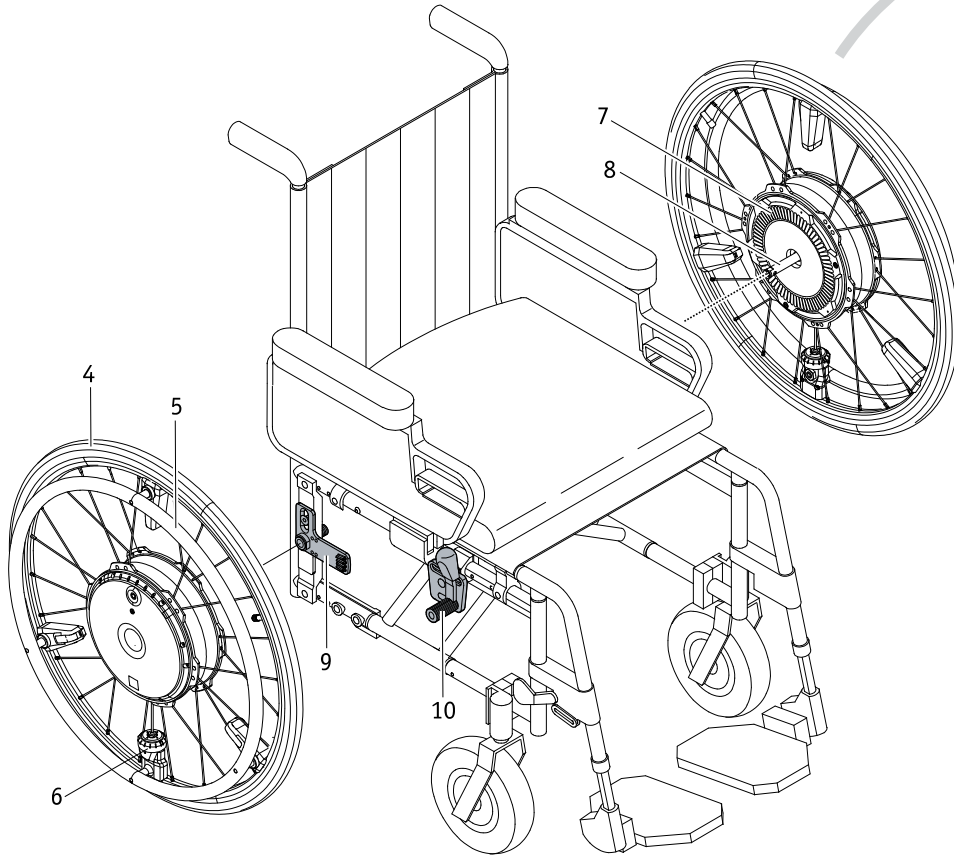
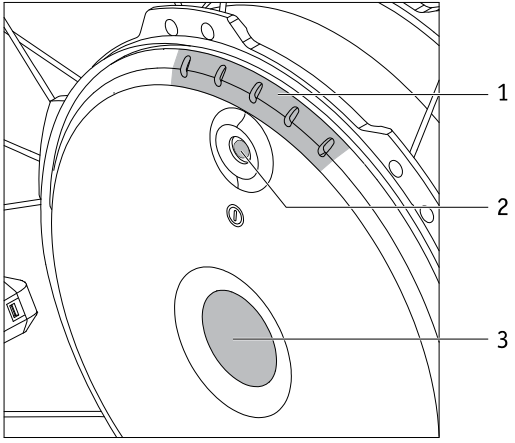
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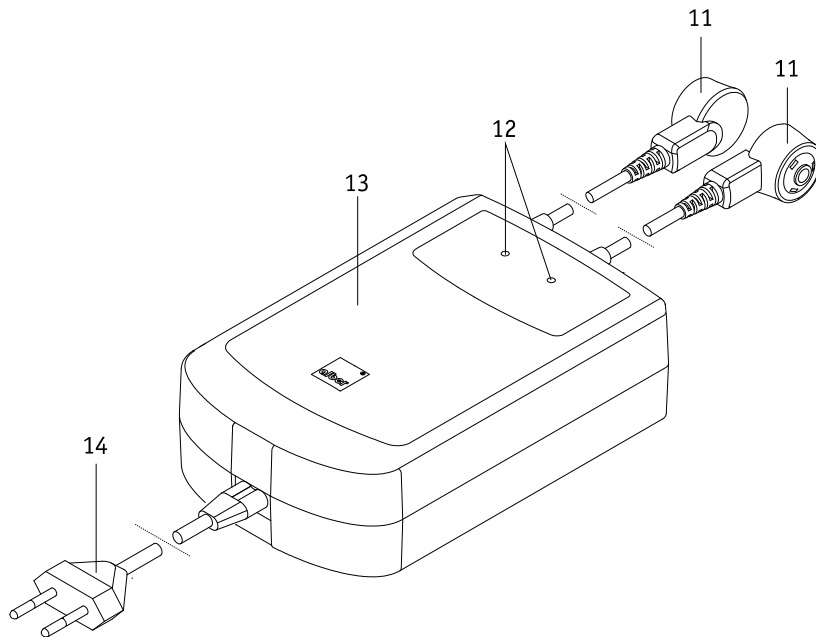
**Telefon (0800) 9096-250**

(gebührenfrei)





- 22": Ø 550mm
- 24": Ø 600mm
- 25": Ø 615mm (1" Marathon Plus)
- 25": Ø 625mm (1,1" Rightrun)



## USA and CANADA only

**⚠ CAUTION** Federal law restricts this device to sale by or on the order of a practitioner licensed by the law of the State in which he/she practices.

### Powered Wheelchair Electromagnetic Interferences (EMI)

Because EM energy rapidly becomes more intense as one moves 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. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of the powered wheelchair.

**⚠ WARNING** Radio wave sources may affect powered wheelchair control

Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect powered wheelchairs and motorized scooters. Following the warnings listed below should reduce the chance of unintended brake release or powered wheelchair movement which could result in serious injury.

- 1) Do not operate hand-held transceivers (transmitters-receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, radio frequency identification (RFID), while the powered wheelchair is turned ON;
- 2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
- 3) If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe;
- 4) Be aware that adding accessories or components, or modifying the powered wheelchair, may make it more susceptible to interference from radio wave sources.  
(Note: There is no easy way to evaluate their effect on the overall immunity of the powered wheelchair); and
- 5) Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and note whether there is a radio wave source nearby.

### Important Information

20 volts per meter (V/m) is a generally achievable and useful immunity level against EMI (as of May 1994) (the higher the level, the greater the protection). All alber power-drives have an immunity level of 20 V/m.

**⚠ CAUTION** IT IS VERY IMPORTANT THAT YOU READ THIS INFORMATION REGARDING THE POSSIBLE EFFECTS OF ELECTRO-MAGNETIC INTERFERENCE ON YOUR POWERED WHEELCHAIR.

### Electromagnetic Interference (EMI) From Radio Wave Sources

Powered wheelchairs and motorized scooters (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energie (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 wheelchair's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called its "immunity level". The higher the immunity level, the greater the protection.

There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized. The sources of radiated EMI can be broadly classified into three types:

- 1) Hand-held portable transceivers (transmitters-receivers) with the antenna, mounted directly on the transmitting unit. Examples include: citizens band (CB) radios, "walkie talkie", security, fire and police transceivers, cellular telephones, radio frequency identification (RFID), and other personal communication devices.  
**Note:** Some cellular telephones and similar devices transmit signals while they are ON, even when not being used;
- 2) Medium-range mobile transceivers, such as those used in police cars, fire trucks, ambulances, and taxis. These usually have the antenna mounted on the outside of the vehicle; and
- 3) Long-range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.

**Note:** 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.

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### USA only

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The latest applicable version of this operating manual is available for download on our website [www.alber.de](http://www.alber.de). If you require a large-print version, please contact the Alber Service Centre.

## 1. Introduction

### 1.1 Indications for use

The e-motion M25 is a Power Assist Wheelchair Conversion Kit and suitable for the manual wheelchair users who are limited in their field of activities because of their physical conditions. The device can expand their field of activities by assisting their wheelchair operating force.

### 1.2 Important safety notes – please observe at all times

The e-motion is an additional drive for wheelchairs, and must only be fitted to and operated with wheelchairs that are listed in Alber's mounting database. For safety reasons, it must only be operated by persons who:

- Have been instructed in its handling
- Can move and coordinate both hands or arms without major restrictions
- Have the physical and mental ability to safely operate the wheelchair with the e-motion wheels attached to it in all possible situations and, in the event of the e-motion wheels failing to work, are able to brake the wheelchair and stop safely

A one-to-one instruction session on handling and operating the device is included in the scope of delivery. Please contact your specialist dealer or Alber GmbH representative to arrange for a training session. The instruction is free of charge.

If you feel a little unsure about how to handle your e-motion, please contact your specialist dealer for advice.

In the event of technical faults, please contact your specialist dealer or the Alber Service Centre (Tel: 0800 9096 250).

When operating the e-motion, observe the specifications of the wheelchair manufacturer (e.g. maximum slope, air pressure of front wheels, maximum speed, etc.), and strictly adhere to the operating instructions for the wheelchair. Never exceed any of the specified limits.

We recommend refraining from using the e-motion in locations that are exposed to strong electric fields.

In rare cases, the operation of the e-motion may interfere with other electrical devices such as anti-shoplifting barriers or RFID emitters e.g. in department stores.

You must not use the e-motion on escalators or moving walkways.

If carrying out sporting activities in the wheelchair, such as lifting weights or similar tasks, the wheels of the e-motion must be shut down and the wheelchair's parking brakes engaged before the activity begins.

Combination of the e-motion with accessories provided by manufacturers other than Alber is not permitted.



**It is prohibited to start up the e-motion before being instructed in how to use it.**

**Contact your authorised specialist dealer or Alber agent for this instruction.**

**Starting up the e-motion before receiving instruction is contrary to the intended use and will, among other things, invalidate the warranty. Any use contrary to the intended use involves a risk of injury.**



**When force is applied to the push rims of the e-motion, the e-motion wheels will provide assistance with movement and braking. The force required to move the push rims on the e-motion is much smaller than that required to operate a manual wheelchair. In order to brake, the push rims must be moved against the direction of travel. The e-motion does not brake automatically in freewheeling mode.**

### 1.3 Proper use of the e-motion

The e-motion is a medical device for active wheelchair users who are reliant on a wheelchair as a result of their disability. The e-motion is an additional drive from wheelchairs (two electrically driven wheels) that is attached to a manual wheelchair, converting it into an electrically driven wheelchair and thus significantly increasing the wheelchair user's mobility and flexibility.

The e-motion must always be used, transported, maintained and serviced as described in this operating manual. The e-motion must only be fitted to and operated with wheelchairs that are listed in Alber's mounting database.

The selection is made by the specialist dealer or by Alber itself.

### 1.4 Handling instructions

Wheelchairs that are fitted with e-motion wheels are designed exclusively for transporting persons with a walking disability. Do not attach any parts other than the accessories that have been approved for use by Alber. Likewise, not technical modifications must be made to the device.

The e-motion must only be operated under the following conditions:

- Full compliance with the information, instructions and recommendations contained in this operating manual
- Compliance with the information on travelling using the e-motion, as well as the safety and hazard information in chapter 3.
- If the e-motion is only operated by a person who has been instructed in its use
- If no technical modifications have been made to the e-motion by the user or by any third party

An instructed person is a person who has been instructed in the operation of the e-motion and in his/her tasks, and who has been made aware of the possible hazards associated with improper use of the device. This will usually be the user of the wheelchair to which the e-motion wheels have been fitted. The instruction session is provided by the authorised specialist dealer or by an Alber GmbH representative. It is strictly prohibited for any uninstructed or unqualified persons to use the e-motion.

The e-motion must not be used for any purpose that contravenes the proper use of the device. This particularly applies to all types of load transportation, such as transporting household objects or additional people in the wheelchair. Proper use includes complying with the information specified in this operating manual on carrying out maintenance work and observing and adhering to the safety precautions and hazard information for driving.

The use of the e-motion for any of the following purposes shall be deemed to be misuse by Alber GmbH:

- Use or operation of the device that contravenes the instructions and recommendations in this operating manual
- Exceeding the technical limits defined in this operating manual
- Technical modifications to the device
- Attachment and/or use of parts or accessories that have not been supplied or approved by Alber GmbH



**Alber GmbH accepts no liability for damage caused by improper use of the e-motion or its accessory parts, by handling of the e-motion or its accessory parts by persons who have not been instructed accordingly, by use of the e-motion or its accessory parts contrary to the instructions in this operating manual (particularly the safety and hazard information), or by a user or third party exceeding the technical limits defined in this operating manual.**



**Before using the e-motion, carefully read all the safety and hazard information contained in the individual chapters of this operating manual.**

### 1.5 Signs and symbols

Important tips and information are identified in this operating manual as follows:



Tips and special information.



Warning against possible hazards to your safety and health, and indication of potential risks of injury. Warning against possible technical problems or damage.

Observe these indications and warnings at all times to avoid injury to people and damage to the product.

When used in this operating manual, terms such as “in front of”, “behind”, “left”, “right” etc. refer to the respective position from the point of view of the wheelchair user.

The symbols used on the labels (see chapter 17) and in some parts of this operating manual are explained below.



The e-motion and the corresponding off-board charger comply with the applicable sections of standard EN 12184 for electric wheelchairs and standard ISO 7176-14 for wheelchairs and comply with the EU Medical Devices Directive (MDR) 2017/745. The e-motion is a Class I medical device.



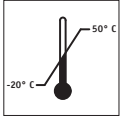
Medical Device



For information on how to dispose of the e-motion and its components, please see chapter 11.4



Protect the device from moisture



Indicates the temperature range in which the e-motion can be used (-20°C ... +50°C)



Important: read and observe the operating manual and accompanying documents



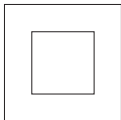
Maximum weight of person that the e-motion can accept as its load capacity:  
Wheel size 22" = 125 kg / wheel sizes 24" and 25" = 150 kg



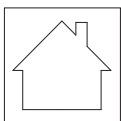
Specification of the manufacturing date on the system label



Name and address of the device manufacturer (see reverse of this operating manual)



Protective insulation/appliance class 2



Not suitable for outdoor use (charger)



Complies with US and Canadian guidelines



Warning against magnetic fields and forces



Hazardous goods labelling (class 9) on the battery pack box



### 1.6 Permissible conditions of use/locations of operation

- Observe the permissible conditions of use of the wheelchair to which the e-motion wheels are attached (see wheelchair operating manual).
- In addition to observing the information provided on the e-motion, it is also imperative to observe the information provided by the wheelchair manufacturer (e.g. maximum gradeability, maximum permissible height of obstacles, maximum user weight, maximum speed, etc.). The lowest values always apply.
- Any limits regarding the operation of the wheelchair (e.g. maximum gradeability, maximum permissible height of obstacles, maximum user weight etc.) must also be observed when using the e-motion.
- The e-motion must only be used at temperatures between -20°C and +50°C. As such, avoid exposing the e-motion to any heat sources (such as intense sunlight), since this may cause its surfaces to reach high temperatures.
- Avoid using the wheelchair on soft ground (e.g. loose chipping, sand, mud, snow, ice or deep puddles).
- Take particular care to observe the safety instructions and hazard information provided in chapter 3.



**Never drive without anti-tippers, and only remove them in order to drive over major obstacles. It is left to the judgement of the driver whether to call an attendant for help when there is an increased risk that the wheelchair may tip over.**



**Travelling without a pair of anti-tippers increases the risk of accidents, and thus injuries. Alber GmbH accepts no liability for accidents caused by operation of the e-motion without a pair of anti-tippers.**



**The execution of “wheelie” movements (anti-tippers removed from wheelchair, e-motion wheels on the ground, front wheels (castors) up in the air) is not permitted. Alber GmbH accepts no liability for accidents resulting from such actions.**



**Especially when it is not in use, avoid exposing the e-motion to strong sunlight for long periods of time wherever possible. This could cause the motor to heat up and, in extreme cases, prevent it from operating at full power. Plastic parts also age quicker under intense sunlight. In case of overheating: allow the wheels to cool down for at least 60 minutes.**

### 1.7 Standard scope of delivery

- Two e-motion wheels
- One battery charger
- This operating manual

The wheelchair must have special brackets to attach the e-motion wheels. If this is not the case, please contact your specialist dealer or an Alber agent.

### 1.6 The main elements at a glance

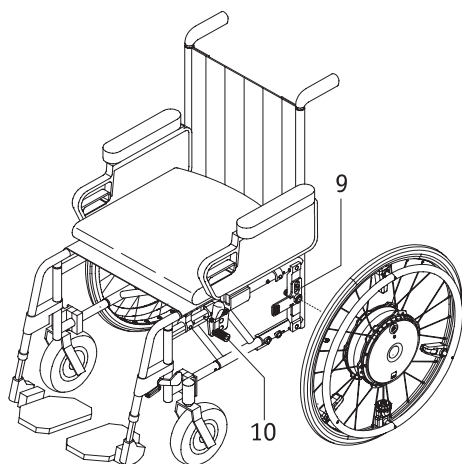
(please fold out overview drawing in document cover)

#### Wheel

LED displays	1
On/off button with charger socket	2
Stub axle locking mechanism	3
Wheel casing	4
Push rims	5
Sensor	6
Fins (rear of wheel)	7
Stub axle	8

#### Wheelchair (not included in scope of delivery)

Bracket with wheel retainer	9
Wheelchair parking brake	10
<b>Charger</b>	
Charging plug	11
LED display	12
Charger housing	13
Mains plug	14



## 2. Commissioning

The e-motion wheels and any accessories you have ordered will be fitted to your wheelchair by Alber or your specialist dealer and delivered ready for operation. To this end, there are new brackets [9] on both sides of your wheelchair with wheel retainers for the two e-motion wheels to be inserted into (see chapter 2.1). Please keep the manual wheelchair wheels you have used until now so that they can be used again if needed. On delivery of your e-motion, your specialist dealer will show you how to operate the system and any accessories you have ordered. You will also be given this operating manual which, in addition to the technical information, also contains important driving instructions.



**The brackets [9] must be attached to the wheelchair by Alber or its authorised specialist dealers.**



**Regularly check the brackets [9] to ensure that they are firmly secured to the wheelchair. If a screw connection has become loose, contact your authorised specialist dealer to have it retightened.**



**Alber GmbH provides brackets of various design (single-part or multiple-part brackets). As such, the brackets shown in the diagrams of this operating manual may vary from those attached to your wheelchair.**



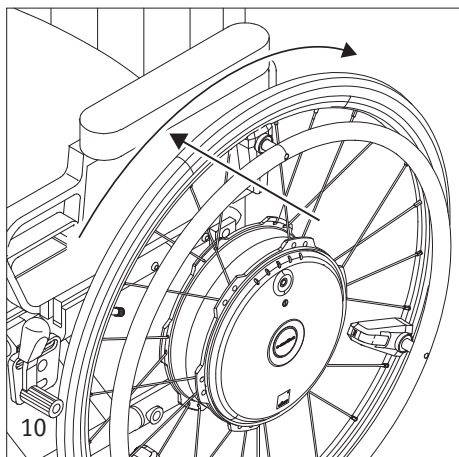
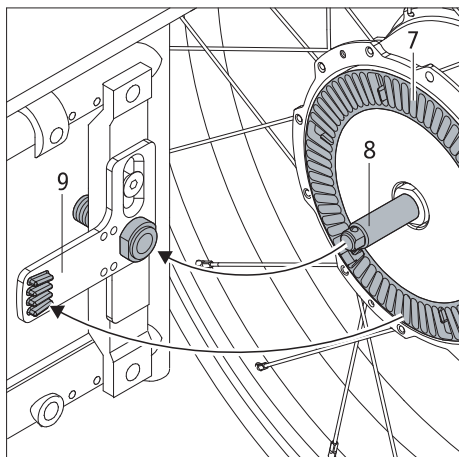
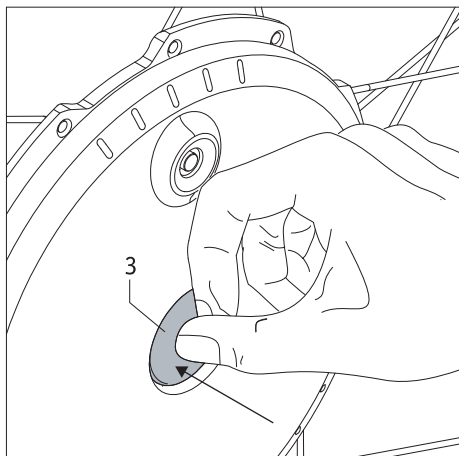
**The wheelchair's parking brakes [10] have been calibrated to work with the e-motion wheels. If you go back to using manual wheels on your wheelchair, the parking brakes will need to be recalibrated accordingly.**



**Speed limitation in neutral gear (without motor assistance)**  
**When operating the e-motion wheels in neutral, a speed of 20 km/h can be reached without any problems. This will cause no damage to the electronic or mechanical systems, as they are designed to handle this load case. At higher speeds (e.g. travelling downhill in neutral; use of hand bikes, in particular with motor assistance or electric motor towing devices), much higher speeds for which no tests are required by the standard guidelines can be reached. The standards only stipulate that the additional drive has to be tested up to its maximum motor-assisted speed for the relevant load cases. However, some wheelchair manufacturers limit the maximum permitted speed to values below 10 km/h. In any case, the speed limitation as stipulated by the wheelchair manufacturer must be adhered to if it is specified in the instructions for use for the wheelchair. For your own safety, we recommend that you do not exceed the specified maximum speed of the additional drive or wheelchair (whichever is the lowest value) during daily use. We assume no liability for any damage which results from operation at speeds higher than the stipulated maximum speed.**



**The e-motion wheels must be switched off if a hand bike or towing device is used.**



### 2.1 Installing the wheels

Different travel parameters can be assigned to each e-motion system. As such, it is essential to ensure that the two e-motion wheels are always installed on the correct side of your wheelchair in accordance with their markings.

From a technical point of view, the stub axles [8] of the e-motion wheels are similar to the stub axles of your usual manual wheelchair wheels. As such, you can attach the e-motion wheels to your wheelchair in the usual way.

- Switch off the e-motion wheels before attaching them to the wheelchair (see chapter 2.3).
- Press the locking mechanism [3] at the centre of the wheel hub and, at the same time, push the stub axle [8] of the e-motion wheel into the wheel retainer [9] on the wheelchair.
- You might need to turn the e-motion wheel on its axle a few millimetres so that the fins [7] located on the rear of the wheel can latch into the wheel retainer [9].
- Check whether the e-motion wheel can be pulled out of the wheel retainer [9] without pressing the locking mechanism [3]. If so, the e-motion wheel is not sitting correctly in the wheel retainer [9] and needs to be inserted again as described above.
- Attach the second e-motion wheel on the other side of the wheelchair.

In these few steps, you have now attached the e-motion wheels to your wheelchair.



**The e-motion wheels must be switched off before they are attached to the wheelchair.**



**Driving is only permitted with e-motion wheels that are correctly engaged in the wheel retainer [9].**



**Before every trip, check that your wheelchair parking brakes [10] are working correctly. These need to be correctly calibrated for use with the e-motion wheels and be able to prevent the wheelchair from inadvertently rolling away at any time.**



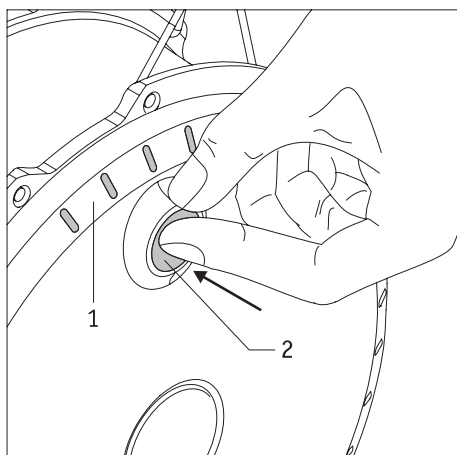
**Always use the supplied stub axles with the e-motion wheels! Do not use the stub axles of the manual wheelchair wheels, as these do not have the necessary length to ensure a secure fit in the brackets [9] when used with the e-motion wheels.**



**To facilitate removal and fitting of the e-motion wheels, optional ergonomic stub axles with a ring are available.**



**Clean and treat the stub axles every 4 weeks with a spray containing PTFE.**



## 2.2 Switching on the wheels at the wheel hub

Once the two e-motion wheels have been correctly attached to your wheelchair as described in chapter 2.1, you can now switch on the system.

- Press the on/off button [2] on the wheel hub down all the way and hold it down for about one second.
- To confirm activation, an acoustic signal (1 beep) sounds on each wheel. At the same time, the LED display [1] will indicate the remaining battery life.
- After about 2 to 3 seconds, the wheel will be ready for use and you will be able to begin your journey. Please observe the information provided in chapter 3.

### Note:

If the wheels remain out of use for 60 minutes, they will switch off automatically (see chapter 6 for more information).



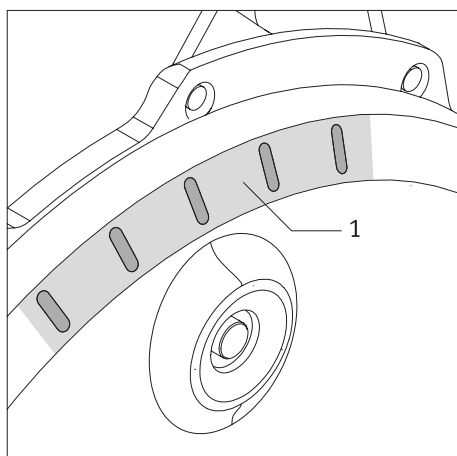
**The push rims [5] must never be operated while the wheels are being switched on, otherwise an error message will appear (see chapter 5.4).**



**If an error occurs when switching on the wheels, this will be indicated by the LED display [1] and acoustic signals (see chapter 5.4 for more information).**



**The two e-motion wheels are switched on one after the other, not at the same time. If they are activated at the same time, any warning signals (see chapter 5.4) may not be heard, or may be assigned to the wrong wheel in error.**



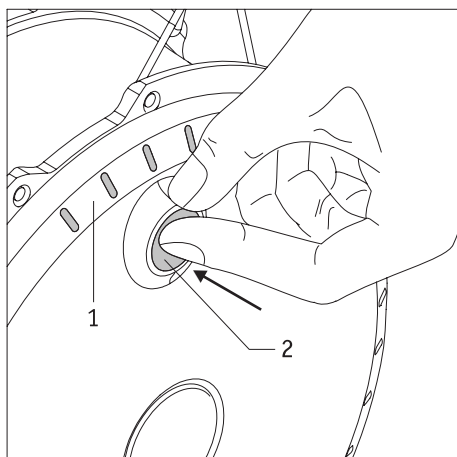
## 2.3 Switching the wheels off

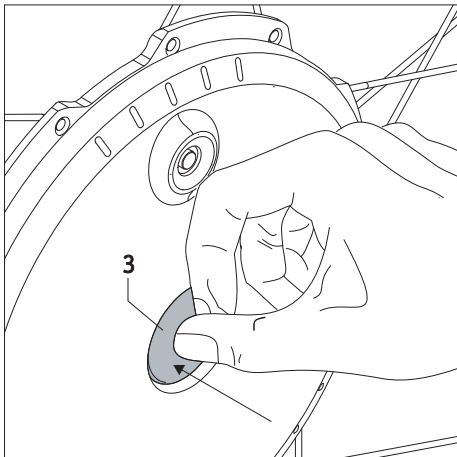
When you have finished your journey, the two e-motion wheels should always be switched off and the parking brakes on the wheelchair engaged. This not only saves the energy of the two batteries; it also prevents your wheelchair from rolling away inadvertently.

- Press the on/off button [2] on the wheel hub down all the way and hold it down for about one second.
- The LED display [1] on the wheels will go out.
- Engage your parking brakes to prevent the wheelchair from rolling away inadvertently.



**The e-motion wheels do not have built-in brakes. As such, it is essential to calibrate the parking brakes fitted to your wheelchair for use with the e-motion wheels so that you can prevent your wheelchair from rolling away inadvertently. Please contact your specialist dealer to arrange this adjustment.**





## 2.4 Removing the wheels

Usually, the e-motion wheels will remain on your wheelchair at all times. If they do need to be removed (e.g. for transport purposes), please proceed as follows:

- If you have not already done so, switch off the e-motion wheels (see chapter 2.3).
- Lift your wheelchair up by its push handles.
- Press the locking mechanism [3] located at the centre of the wheel hub and carefully pull the e-motion wheel off the wheelchair.



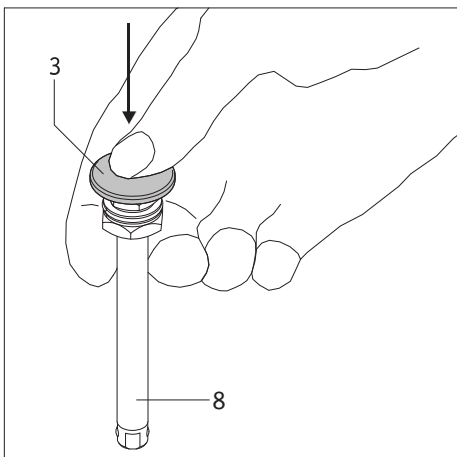
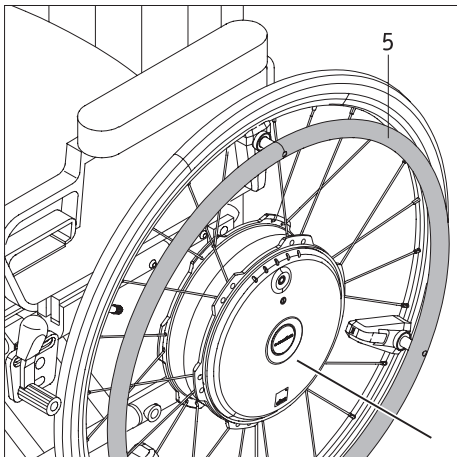
**Never pull on the push rim [5] when removing an e-motion wheel. This could damage the fitted sensor [6]. Instead, hold the e-motion wheel by its tyre or the wheel hub during removal.**



**Both wheels must always remain switched off when transported by air. We recommend putting the wheels in flight mode (see Chapter 2.6) to prevent the wheels from being accidentally switched on, e.g. in the cargo hold. As required, the wheels can be additionally secured with an optionally available transport axle.**



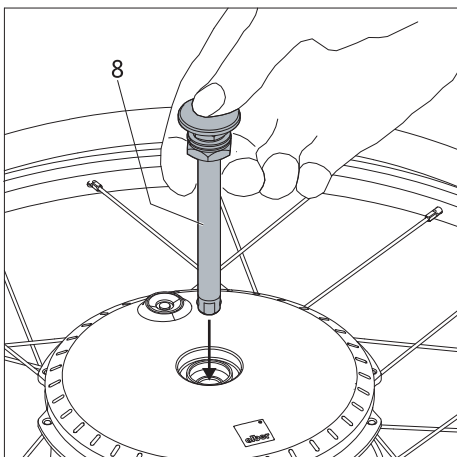
**In order to ensure compliance with the regulations of certain airlines, we recommend ensuring that the battery charge for your e-motion wheels does not exceed 30% during transportation by plane. The free e-motion Mobility app allows you to discharge your e-motion batteries if necessary for such situations. For more information on this function, please refer to the operating manual for the Mobility app.**



### Detaching the stub axle (if necessary)

If the e-motion wheels are stored lying on their backs, the stub axles [8] will protrude above the wheel hub by a few centimetres. We therefore recommend taking the stub axles out of the wheel entirely in order to prevent potential damage.

- Hold the stub axle [8] between your index and middle finger as shown in the diagram, and press the locking mechanism [3] with your thumb.
- Pull the stub axle [8] out of the wheel hub and set it down.



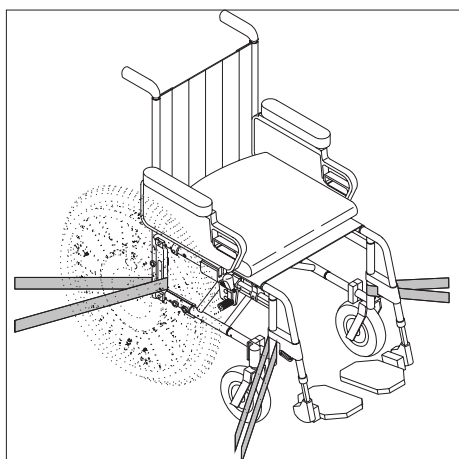
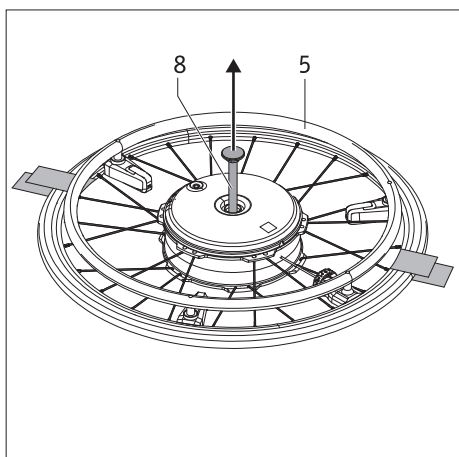
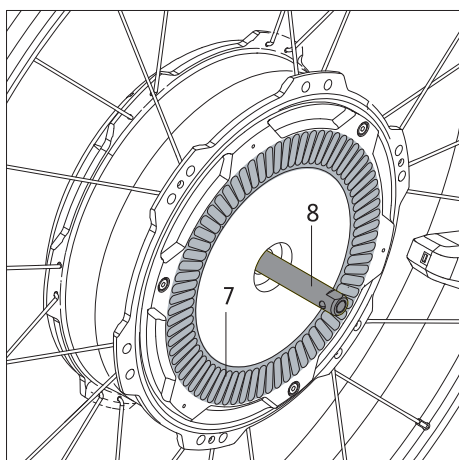
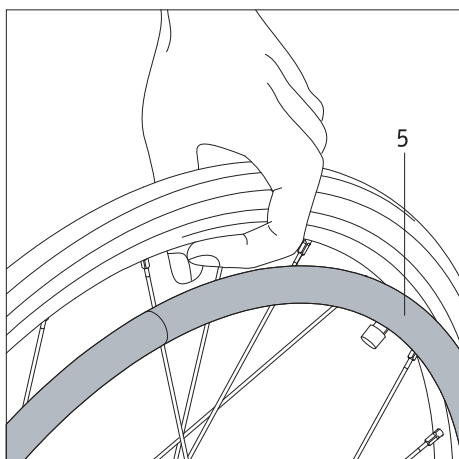
### Inserting the stub axle

If the stub axles have been taken out of the wheel as described above, they will need to be reinserted in the wheel hubs before you next attach the wheels to your wheelchair.

- Hold the stub axle [8] between your index and middle finger as shown in the diagram, and press the locking mechanism [3] with your thumb.
- Insert the stub axle [8] into the wheel hub.



**Always use the supplied stub axles with the e-motion wheels! Do not use the stub axles of the manual wheelchair wheels, as these do not have the necessary length to ensure a secure fit in the brackets [9] when used with the e-motion wheels.**



## 2.5 Transporting and storing the wheels as vehicle luggage

- The e-motion wheels must be switched off before they are removed from the wheelchair.
- If the e-motion wheels have been removed from the wheelchair, they must **not** be lifted or carried by the push rims [5]. This could damage the fitted sensors. Instead, carry the e-motion wheel by its wheel rim. There is no danger of damaging the wheel if it is handled using this part.
- When setting the wheel down or aside, take care of the fins [7] and the stub axle [8] on the rear of the wheel. Neither part should be damaged.
- When transporting the wheelchair, follow the instructions of the wheelchair manufacturer. You might need to secure the wheelchair or certain components of it.
- We recommend always removing the e-motion wheels from the wheelchair and transporting them individually. The stub axle [8] should be removed from the wheels entirely before doing so.
- The wheels should be stored or transported on their backs or standing up.
- During transport, the wheels must be secured properly so that they do not pose a risk to the driver or passengers in the event of a sudden braking manoeuvre. To stop the wheels from moving around, we recommend securing them in the vehicle using suitable, sturdy straps as shown in the diagram. Please note that this is a non-binding recommendation (we accept no liability for the results of such action).



**Do not attach the straps to the push rims [5]; this could damage their sensors.**

- Please check whether there are specific regulations regarding the securing of wheelchairs and wheels for transport in your jurisdiction; if so, always adhere to these regulations.
- Alber GmbH and its representatives accept no liability for any damage resulting from failure to comply with these instructions.
- If you wish to transport your wheelchair in its entirety without dismantling the wheels, the wheelchair must be protected in accordance with the guidelines and specifications of the wheelchair manufacturer. The diagram on the bottom left represents just one example of a method for doing this.

## 2.6 Transporting the wheels by plane

For transportation by plane, the e-motion wheels can be switched off in a way that prevents them from being reactivated inadvertently, e.g. by a loose item of luggage in the aircraft's hold. The e-motion's "flight mode" can be used to prevent such incidents.

### Activation

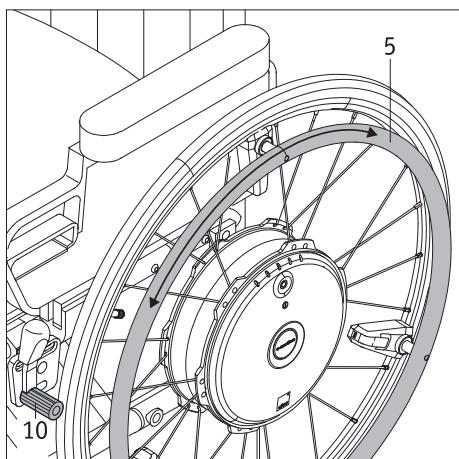
- Press the on/off button [2] on the wheel hub down all the way and hold it down for at least 10 seconds. All five elements of the LED display will light up for 5 seconds.
- Release the on/off button [2] within 5 seconds. Carry out this procedure for both drive wheels.

### Deactivation

- Press the on/off button [2] on the wheel hub down all the way and hold it down for at least 10 seconds. All five elements of the LED display will light up for 5 seconds.
- Then release the on/off button [2]. Flight mode is now deactivated. The wheels are still switched off, but they can now be switched back on by pressing the button again.

Note: You can also activate the flight mode for your e-motion wheels using the free Mobility app. However, activating flight mode will sever the Bluetooth connection between the wheels and your mobile device. As such, the on/off button [2] must be used as described above for subsequent reactivation.





### 3. Safety instructions and hazard information when using the e-motion

#### 3.1 General instructions

Using the e-motion wheels is much the same as using the manual wheels you have been using until now. This means that you can move your wheelchair as normal using the push rims [5]. While the e-motion is switched on, each push you give to the push rims will be converted into a drive command. The e-motion thus assists both forwards and reverse movement, as well as accelerating and braking. The e-motion does not brake automatically in freewheeling mode.

As such, we recommend that you take a short driver training session when you first receive your e-motion. This will allow you to get used to the drive and everything you can do with it.

The e-motion wheels can also be used as manual push rim wheels when switched off. However, the additional weight of the wheels needs to be considered when starting off and braking in such situations.

Check that the parking brakes [10] of your wheelchair have been **calibrated for use with the e-motion wheels to** prevent your wheelchair from rolling away inadvertently. If this is not the case, please contact your Alber authorised specialist dealer and have the brakes readjusted.

#### Information on driving training

- Start your first driving attempts with caution, and start your driving training on level ground.
- Take your driver training in areas without any obstacles.
- Before using the e-motion to travel on a slope, practice operating the device on level ground.
- Always adapt your speed to external conditions so that you are able to stop your wheelchair or drive around any obstacles that may suddenly appear, for example.
- Always ensure that your battery is fully charged before driving up slopes.  
The wheels will continue to work if the battery is empty; however, you will no longer be able to use the rolling motion or – most importantly – the braking assistance!
- Special caution should always be exercised when travelling down slopes of any kind.  
Driving down slopes at high speeds with a fully charged battery can cause the e-motion to shut down due to overvoltage. The wheels will continue to work, but the power assistance for braking will no longer be available.  
As such, always adopt a low speed in such situations. This is advisable in any case, so that you can stop the wheelchair or avoid any obstacles that may suddenly appear.
- Observe the information, safety instructions and hazard information provided by your wheelchair manufacturer. This also applies to driving using the e-motion.



**Exercise caution when travelling downhill with a fully charged battery.**  
Travelling at high speeds with a fully charged battery may lead to the system automatically switching off.  
Reduce your speed accordingly.



**As far as possible, always use reverse mode when negotiating obstacles (e.g. kerbs). The maximum permitted obstacle height is 50 mm. Drive slowly and carefully in reverse until the wheels of your e-motion touch the obstacle. Once you reach this point, negotiate the obstacle carefully. It is up to you to decide whether to enlist the help of another person.**



**Observe the following safety instructions and hazard information.**



**In the event of a breakdown, contact your specialist dealer immediately.**



**The optional ECS remote control offers a special training mode that allows you to use the e-motion wheel with very little motor assistance until you have got used to the handling.**

### 3.2 Safety instructions

- The e-motion wheels must be switched off before being attached to the wheelchair, being removed from the wheelchair, and before starting work on the wheelchair or the wheels themselves.
- For safety reasons, you must activate the parking brakes of your wheelchair when you stop, especially on uphill and downhill slopes, in order to prevent the wheelchair from rolling away inadvertently.
- In the (unlikely) event of the battery overheating or catching on fire, you must ensure that the battery does not come into contact with water or other liquids. The only suitable extinguishing agents recommended by the battery manufacturers are sand or a Class D fire extinguisher.

#### Before beginning your journey:

- The e-motion may only be attached to push rim wheelchairs that have been approved by Alber GmbH for this device.
- The bracket holding the e-motion in place may only be installed and modified by Alber GmbH or an Alber authorised specialist dealer.
- When using the e-motion, always strictly adhere to the operating manual for the wheelchair.
- Driving the wheelchair without a pair of anti-tippers attached is not permitted.
- Attach anti-tippers to your wheelchair in pairs.
- Before each journey, check the e-motion wheels. If the tyres have reached their wear limit (if you can no longer see the tread), the e-motion must no longer be used.
- Before every journey, check that your wheelchair parking brakes are working correctly. It is forbidden to drive the wheelchair without working parking brakes.
- Check the air pressure of the e-motion wheels at regular intervals. For specifications, please refer to the table in chapter 16. Please check the air pressure of the front wheels in accordance with the instructions and specifications of the wheelchair manufacturer. Insufficient air pressure can severely affect the handling and range of the wheelchair.
- Both e-motion wheels should always have the same air pressure.
- Both front wheels of the wheelchair should always have the same air pressure.
- Before every journey, check that the e-motion wheels are seated correctly in the two wheel retainers on your wheelchair.
- The e-motion may be used in conjunction with a wheelchair towing device or handbike up to a maximum speed of 20 km/h. Higher speeds may damage the electronic systems of the e-motion drive wheels. In addition, the e-motion wheels must be switched off in the process.

#### Always observe the following rules when travelling using the e-motion:

- Before using the e-motion to travel on a slope, practice operating the device on level ground.
- The maximum permissible slope specified by the wheelchair manufacturer must not be exceeded.
- Be very careful when approaching steps and drops.
- While the e-motion is switched on, each push you give to the push rims will be converted into a drive command. When stopping or waiting in potentially dangerous positions (e.g. while waiting at a traffic light, on uphill and downhill slopes, or on ramps of any type), secure your wheelchair using its parking brakes and do not touch the push rims.
- Never reach into the wheel when the e-motion is switched on.
- Do not insert or throw objects of any kind into an e-motion wheel, regardless of whether or not it is switched on.
- Never attach objects of any kind to the push rims. These could induce involuntary drive impulses.
- When driving on pavements, keep a safe distance from the kerb (preferably the width of the wheelchair).
- Avoid using the wheelchair on soft ground (e.g. loose chipping, sand, mud, snow, ice or deep puddles).
- Never leave the e-motion unattended, even if it is switched off.
- The e-motion may be adversely affected by strong electromagnetic fields, particularly in the vicinity of the push rim sensor.
- Under certain circumstances, the e-motion may interfere with other electrical equipment such as anti-shoplifting barriers in department stores.
- You must not use the e-motion on escalators or moving walkways.
- When travelling at maximum speed, do not suddenly change your direction of travel to the left or right, as this could cause the wheelchair to tip sideways.
- Reduce your speed when turning a corner.
- If you intend to stop in your wheelchair on an uphill or downhill slope, your wheelchair must be parked facing across this slope (not up or down) and the parking brakes must be activated.
- After every trip or when your wheelchair is idle, activate the parking brakes to prevent the chair from rolling away inadvertently.
- Never travel across downhill slopes.
- Never reach into the front wheels of your wheelchair or the spokes of the e-motion wheels when travelling.
- Apply the e-motion brake carefully according to your speed (i.e. not suddenly).
- When travelling in a vehicle, always sit in the vehicle's installed seats with the appropriate restraint systems. Failure to comply with this guideline may result in injury to you and your co-passengers in case of an accident.
- When travelling by vehicle, secure your wheelchair and the e-motion wheels according to the currently applicable statutory requirements and legislation.



- When travelling on public roads and pavements in the Federal Republic of Germany, the provisions of the German Road Traffic Regulations and the Road Traffic Licensing Regulation must be observed at all times. In other countries, the locally applicable national provisions must be observed at all times.
- The e-motion is only intended for transporting persons with restricted mobility and must not be used for any other purpose, e.g. for transporting goods or as a plaything for children.
- The operation of the e-motion is prohibited in the vicinity of strong magnetic fields, such as those induced by holding solenoids, transformers, tomographs, etc.
- Avoid travelling using the e-motion in adverse conditions, such as storms, hail and high undergrowth.



**Never drive without anti-tippers, and only remove them in order to drive over major obstacles. It is left to the judgement of the driver whether to call an attendant for help when there is an increased risk that the wheelchair may tip over.**



**Travelling without a pair of anti-tippers increases the risk of accidents, and thus injuries. Alber GmbH accepts no liability for accidents caused by operation of the e-motion without a pair of anti-tippers.**

#### **Always observe the following rules after travelling using the e-motion:**

- When not in use, the e-motion must be switched off immediately in order to avoid inadvertent triggering of drive pulses when the push rims are touched and to prevent the battery from discharging completely.
- Whenever the wheelchair is idle, activate the parking brakes.
- Recharge the battery of your e-motion as soon as possible after each trip.

### **3.3 Obstacles**

As far as possible, always use reverse mode when negotiating obstacles (e.g. kerbs). The maximum permitted obstacle height is 50 mm. Drive slowly and carefully in reverse until the e-motion wheels touch the obstacle. Once you reach this point, negotiate the obstacle carefully. It is up to you to decide whether to enlist the help of another person.

### **3.4 Hazardous areas and hazardous situations**

- The wheelchair user must decide in each case whether it is safe to take the intended trip based on factors such as driving experience and physical strength.
- Before undertaking a trip, check the e-motion wheels for damage and ensure that they are inflated properly. Also, check the charge status of the two batteries and that the visual and acoustic signalling devices on the wheel are working correctly.
- These safety checks and the personal experience of the wheelchair user are of particular importance in or near the following hazardous areas, the navigation of which is left to the judgement and risk of the e-motion user:
  - Quay walls, berths and marinas, paths and areas near water, bridges and dykes without railings
  - Narrow footpaths, gradients (e.g. ramps and driveways), narrow paths along slopes, mountain paths
  - Narrow and/or steep/inclined paths along main and side roads or near precipices
  - Paths covered with leaves, snow or ice
  - Ramps and lifting equipment on vehicles



**When cornering or turning the wheelchair on gradients or inclines, the centre of gravity of the wheelchair may be shifted leading to a risk of the wheelchair tipping over to the side. As such, proceed with extreme caution and reduce your speed.**



**Special caution is required when crossing roads, crossroads and level crossings. Never cross rail tracks in roads or at level crossings by driving parallel to them, as the wheels could get stuck in the rails.**



**Proceed with special caution when driving over ramps or lifting platforms of vehicles. Before lifting or lowering the wheelchair on the ramp or lifting platform, switch off the e-motion. Also apply the wheelchair parking brakes. This prevents inadvertent movement or drive commands.**



If the ground is wet, tyre grip may be poor, leading to a risk of slipping. Adapt your driving behaviour accordingly and never drive with worn tyres.

#### 4. Battery (built into the wheels)



Maintenance-free, rechargeable lithium-ion batteries are built into the e-motion wheels. For safety reasons, these cannot be removed by the wheelchair user. If necessary, they must be removed by your authorised specialist dealer.

Read and observe the following safety instructions and precautions before using the e-motion and starting the charging process. Failure to comply with the safety precautions and instructions may damage the product or result in electric shock, fire and/or serious injuries. The lithium-ion battery contains chemical substances, which may cause hazardous reactions if the safety instructions specified here are disregarded. Alber GmbH cannot be held liable for damage caused by non-compliance with the general information and safety instructions.

##### 4.1 Safety instructions for the built-in batteries in the e-motion wheels

- Before the e-motion wheels are used for the first time, the battery should be fully charged.
- The wheels must only be used at temperatures between -20°C and +50°C.
- The wheels must not be exposed to heat (e.g. radiators) or fire. External heat exposure can cause the battery to explode.
- In the (unlikely) event of a battery overheating or catching on fire, you must ensure that the battery does not come into contact with water or other liquids. The only suitable extinguishing agents recommended by the battery manufacturers are sand or a Class D fire extinguisher.
- Your e-motion uses power in all operating modes. As such, both batteries should be charged up full after each use whenever possible.
- The e-motion wheels – and the in-built batteries in particular – must not be opened or dismantled. Improper opening or wilful destruction of the wheels or the battery carries a danger of serious injury. In addition to this, opening the battery will void any warranty claims.
- Never connect the charger socket [2] to metallic objects, or ensure that the contacts never come into contact with metallic objects (e.g. metal filings).
- If the charger socket [2] is dirty, clean it with a clean, dry cloth.
- Never immerse the battery in water.
- If damaged or defective, the battery must be checked. In such cases, contact your specialist dealer to learn about the proper procedure for returns and repairs.
- The wheel with the defective/damaged battery must not be used or opened under any circumstances.
- Always ensure that the e-motion wheels are kept clean and dry.

##### 4.2 Storing the wheels

- The service life of a battery is partly dependent on its storage location. As such, never leave the e-motion wheels in hot locations for prolonged periods of time. In particular, use the boot of a car parked in the sun only for transport – never as a storage location.
- Store the wheels in a cool, dry location where they are safe from damage and unauthorised access.
- To achieve the optimum battery service life, store the wheels at a temperature between 18°C and 23°C, and at a humidity of 0 to 80 per cent. The charge status under these conditions should be 50 per cent.
- Do not expose the wheels to moisture of any kind (water, rainwater, snow, etc.) during storage.
- Charge the batteries prior to storage and check their charge status every 3 months. Whenever necessary, charge the batteries to between 50 and 70 per cent. The free Mobility app offers a function that allows you to automatically discharge fully charged batteries to 65% when putting the e-motion wheels into storage.
- The wheels should be stored or transported on their backs or standing up.

##### 4.3 General information on charging the batteries

- Do not charge the batteries in the presence or vicinity of flammable liquids or gases.
- In the (unlikely) event of a battery overheating or catching on fire, you must ensure that the battery does not come into contact with water or other liquids. The only suitable extinguishing agent recommended by the battery manufacturers is sand.
- Never complete the charging process in rooms where moisture may affect the wheels and the in-built batteries.
- Never charge the battery at temperatures below 0°C or above 40°C. If you attempt a charging process outside of this temperature range, the charging process will be automatically aborted.
- It takes a maximum of 6 hours to charge the battery.

#### 4.4 Safety instructions for the battery charger and the charging process



**Before the charging process begins, both wheels must be switched off.**

**If the batteries are charged directly on the wheelchair, this must be secured using its parking brakes to prevent it from rolling away inadvertently.**

- The charging process takes place directly on the wheels; they do not need to be removed from the wheelchair. As a rule, both batteries should always be charged at the same time; this is why the battery charger has two charging cables.
- Always use the charger supplied by Alber to charge your e-motion batteries. The charging process will end automatically as soon as the battery is fully charged. As such, overcharging is impossible.
- Never use any charger other than the one supplied by Alber.
- Do not use the charger to charge batteries other than the batteries installed in your e-motion.
- If the e-motion wheels are not used for a prolonged period of time (more than one day), the battery charger must be disconnected first from the wheel (battery), and then from the mains socket.
- Do not expose the charger to moisture of any kind (water, rain water, snow, etc.) during charging.
- Be aware of condensation. If the charger is brought from a cold area into a warm room, condensation may occur on and in the device. In this case, refrain from using the charger until all the condensation has evaporated. Please note that this may take several hours.
- Never carry out the charging process in rooms where moisture may affect the charger.
- Never carry the charger by its power cable or the charger cables.
- Never disconnect the charger from the mains socket by tugging at the power cable.
- Lay the power cable and the two attached charging cables in such a way that nobody can step on it or trip over it, and so that the cables and charger are protected against any other harmful effects or stresses.
- Do not operate the charger if the power cable, one or both of the charging cables, or the plugs attached to the cables are damaged. Any damaged parts must be replaced immediately by a specialist dealer that has been authorised by Alber.
- Do not use or dismantle the charger if it has received a hard blow or been dropped or damaged in some other way. Take the damaged charger to a specialist dealer that has been authorised by Alber to perform repairs.
- The charger must not be used by young children.
- The charger is designed to operate only with a mains alternating voltage of 100 V to 240 V.
- Never attempt to dismantle or modify the charger.
- Do not cover the charger during the charging process or place any objects on top of the device.
- Never subject the cable or plug to any pressure. Overstretching or bending the cable, allowing cables to get trapped between a wall and a window frame, or placing heavy objects on a cable or a plug may result in electric shock or fire.
- Never connect the two pins of the charging cable plugs to any metal objects.
- Ensure that the mains plug is firmly inserted in the socket.
- Do not touch the mains plug or either of the charging cable plugs with wet hands.
- Do not use the charger plugs and/or the mains plug if they are wet or dirty. Before plugging them in, clean the plugs using a dry cloth.
- Once the charging process is complete, first disconnect the charging plugs from the charger sockets of the e-motion wheels, then disconnect the plug of the charger from the socket.
- Ensure that no moisture can get into the charger socket [2] after the charger is disconnected.
- The mains plug is used to interrupt the power supply to the charger. As such, objects must never cover the charger or obstruct its use.
- All types of technical modification to the e-motion and its charger are prohibited.
- If necessary, check the electrical connections to ensure that the charger is set up correctly and not covered by any other objects.

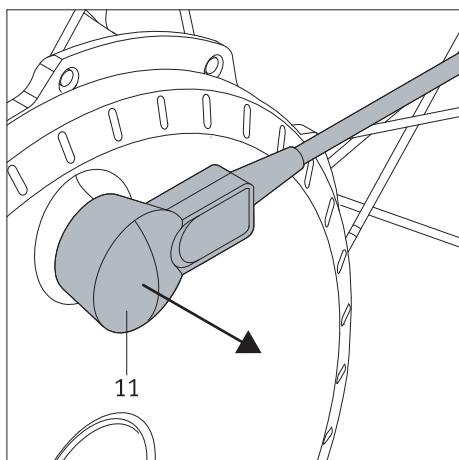
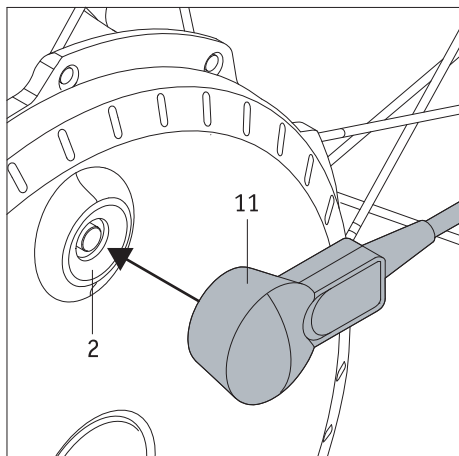


**Before and after charging, ensure that the charger plugs [11] and the charger sockets in the on/off button [2] of the e-motion wheel are clean and free of metallic particles. If there are any metallic particles, remove these with a clean, dry cloth.**



**The charger plugs are magnetic.**

**As such, avoid the plugs coming into contact with any medical implants, electronic storage media, bank cards or similar items.**



#### 4.5 Charging process

- Switch off the e-motion wheels (see chapter 2.3).
- Plug the power cable [14] of the charger into a socket. The two LEDs [12] on the charger will light up orange.
- Insert the plug [11] of the battery charger [13] into the charger socket [2]. (This is built into the on/off button.) The connection is locked in place automatically by a magnetic closure.
- The two LED indicators [12] on the charger will flash green, and the e-motion wheels will emit a short beep. This means that the charging process has begun.
- As the charging process goes on, further LEDs will light up on the e-motion wheel battery pack's LED display [1] to indicate the charge status (see chapter 5.2).
- Once the battery is fully charged, all five LEDs on the wheels will light up, and the LED display [1] on the charger will light up green.
- Once this happens, disconnect the plug [11] on the charger [13] from the e-motion wheels, then unplug the mains plug of the charger [14] from the socket.
- The e-motion wheels are not switched off when the charging process is complete.



If necessary, the charging process can be interrupted at any time.



Ensure that the charger plugs [11] and the charger sockets in the on/off button [2] on the e-motion wheel are clean and free of metallic particles. If there are any metallic particles, remove these with a clean, dry cloth.



If the e-motion wheels are not used for a prolonged period of time (more than one day), the battery charger must be disconnected first from the wheels, and then from the mains socket. Always check the charge status of the batteries before each trip. They should be fully charged at the start of your trip.



If an error occurs when charging the wheels, this will be indicated by the LED display [1] and acoustic signals on the wheel (see chapter 5.4), as well as a continuously lit red LED [12] on the charger.



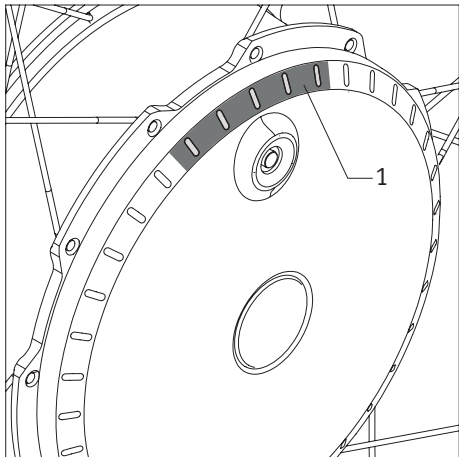
If the e-motion wheels are on the wheelchair for charging, switch off both wheels and secure the wheelchair using its parking brakes before starting the charging process, to prevent it from rolling away inadvertently.



The magnetic plugs of the charger must not come near the sensor [6] on the wheel, as this could affect the calibration of the sensor.



During the charging process, no pressure or tension must be exerted on the push rims [5], as this can cause the charging process to stop.



## 5. Displays and error messages on the wheel

### 5.1 The charge status of the battery

The charge status of the two e-motion batteries is indicated by the LEDs [1] on the wheel.

Every time the wheel is switched on, the LEDs will light up and continuously display the remaining battery life. The LED display will go out as soon as the wheels start turning.

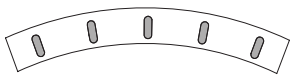


**The free Mobility app can be used to activate and deactivate the option for keeping the LEDs lit during charging and operation.**

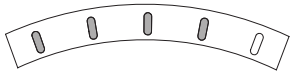
#### The LED display uses the following combinations to indicate specific statuses:

5 LEDs lit up white – the battery is charged to 100%.

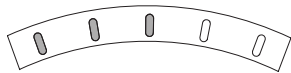
Avoid high speeds when driving down slopes, as the current feedback in the wheels may lead to overvoltage in the battery and force the wheel to shut down.



4 LEDs lit up white – the battery is charged to 80%.

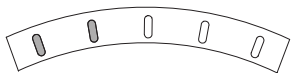


3 LEDs lit up white – the battery is charged to 60%.



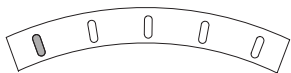
2 LEDs lit up white – the battery is charged to 40%.

We strongly recommend that you do not cover expansive distances without first charging the batteries.



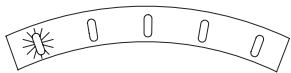
1 LED lit up white – the battery is charged to 20%.

Charge the battery before starting your journey.



1 LED flashing white – the battery is charged to 10%.

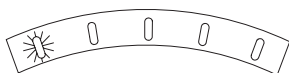
Charge the batteries before starting your journey.



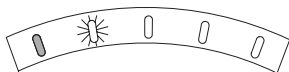
### 5.2 Displays when charging the battery

#### Displays on the wheel

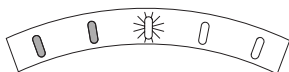
1 LED flashing white – the battery has a charge of less than 20%.



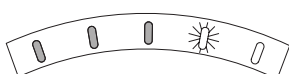
One LED flashes white, 1 LED lights up white – the battery is charged to between 20% and 40%.



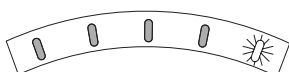
One LED flashes white, 2 LEDs light up white – the battery is charged to between 40% and 60%.



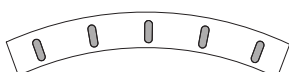
One LED flashes white, 3 LEDs light up white – the battery is charged to between 60% and 80%.



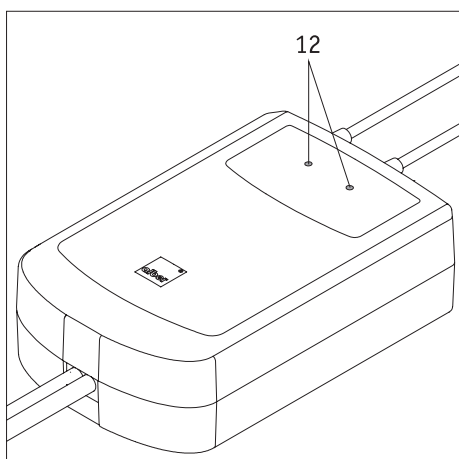
One LED flashes white, 4 LEDs light up white – the battery is charged to between 80% and 100%.



5 LEDs lit up white – the battery is charged to 100%.



If a fault occurs during the charging process, the fault is indicated by the LED display and various acoustic signals (see chapter 5.4).



### 5.3 Displays on the charger

The status of the charger is indicated by its LED displays [12] as follows:

LED colour	LED mode	Status
Red	Steady light	Error
Orange	Steady light	Ready for use
Green	Flashing	Charging
Green	Steady light	Charging complete

## 5.4 Overview of the operating statuses

Operating status	Signalling (to be recognised by)	Activate the e-motion by	Power consumption of the batteries
Flight mode (e-motion cannot be used)	All LEDs on the LED display [1] flash red when the on/off button [2] is pressed.	Press and hold the on/off button [2] on the drive wheel for 10 seconds; all 5 LEDs light up white. Release the on/off button [2] again within 5 seconds. Then press the on/off button [2] again to activate the e-motion.	No power consumption
e-motion completely off	No display	Press the on/off button [2] on the drive wheel (switch-on via ECS remote control or e-motion Mobility App not possible).	No power consumption
Standby operation	The middle LED on the LED display [1] on the drive wheel flashes briefly every 10 seconds.	e-motion can be switched on via ECS remote control or e-motion Mobility App with Mobility Plus Package or ECS function (subject to a surcharge).	Low  Standby operation switches off automatically after 48 hours of inactivity. The system is then completely off and does not consume any power.
e-motion on (ready for travel)	Display for charge status of the batteries via LED display [1] on the drive wheel. If connected: Display for charge status of the batteries on the ECS remote control or on the e-motion Mobility App (free of charge).	----	Medium  Factory-set automatic shutdown after 1 hour. Can be set between 5 minutes and 10 hours via e-motion Mobility App (Expert mode, password-protected). The e-motion goes into standby operation once this time period has elapsed and then consumes power from the batteries to a limited extent.
Manual drive mode	Display for charge status of the batteries via LED display [1] on the drive wheel. If connected: Display for charge status of the batteries on the ECS remote control or on the e-motion Mobility App (free of charge).	----	Range of up to 25 km (on level ground)  Actual power consumption depends on the selected travel profile, assistance levels, the user's own driving behaviour, user weight and terrain
Cruise mode	Display for the speed in the cruise mode (subject to a surcharge) function of the e-motion Mobility App	----	Range of up to 12 km (on level ground)  Actual power consumption depends on cruise speed, user weight and terrain.

## 5.5 Error messages

The tables below list the errors that may occur in the e-motion wheel, together with potential measures that can be taken to resolve them.

LED display	Number of sounds	Sound interval (seconds)	Error description	Remedy
○ ○ ○ ○ ● Steady red light	1	1	The battery is either defective or has a very low charge.	Charge the battery. If the error persists, please contact your specialist dealer or the Alber Service Centre.
● ○ ○ ○ ● Steady red light	2	2	Internal drive/battery error	Avoid driving downhill with the batteries fully charged. If necessary, switch off the e-motion drive wheels and allow them to cool down. If the error persists, please contact your specialist dealer or the Alber Service Centre.
○ ● ● ● ○ Steady red light	3	2	The push rim sensor is either defective, or has been actuated during the start-up process or remote operation.	Avoid actuating the push rims during start-up. Actuation of the push rims is not allowed when remote operation is active, as this function can only be used to control an unoccupied wheelchair. If the error persists, please contact your specialist dealer or the Alber Service Centre.
● ● ● ● ● Steady red light	5	2	The drive wheel was moved during charging, or an charging error or defect has occurred.	Avoid moving the e-motion drive wheels during charging. If necessary, remove the charger from the drive wheels and unplug the mains plug. If necessary, repeat the charging process. If the error persists, please contact your specialist dealer or the Alber Service Centre.
○ ○ ○ ○ ● Flashing white	4	4	WARNING! The battery has reached critically low voltage.	Charge the battery.
● ○ ○ ○ ● Flashing white	4	4	Drive/battery temperature warning	Avoid driving downhill with the batteries fully charged. If necessary, switch off the e-motion drive wheels and allow them to cool down. If the error persists, please contact your specialist dealer or the Alber Service Centre.
● ● ● ● ● Flashing white	4	4	The ambient temperature during charging is too low (< 0°C) or too high (> 40°C).	The charging process has been aborted. Always charge the e-motion drive wheels at temperatures between 0°C to 40°C, otherwise the batteries may become damaged.



**If any error messages other than those listed here appear, there is a serious system malfunction. In such cases, the e-motion wheel cannot be used and must be sent to Alber GmbH via your specialist dealer for testing.**



**In the event of a problem or tyre damage, contact your specialist dealer.**





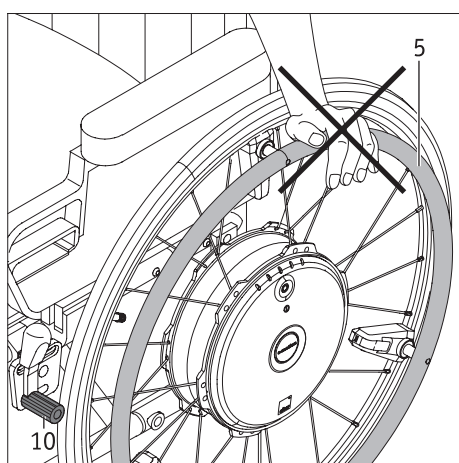
If you notice noise or vibrations coming from the wheel or the wheelchair, you must stop using the e-motion immediately. In such cases, the e-motion wheels cannot be used and must be sent to Alber GmbH via your specialist dealer for testing.



You can use the free e-motion Mobility app to view errors and potential remedies on your smartphone.

### 6. Automatic shut-down

To save power, the e-motion wheels will shut down automatically when not in use for a set period of time. The factory setting for this automatic shut-down time is 60 minutes. You can alter this setting using the optional app. Please consult your specialist dealer for more information.

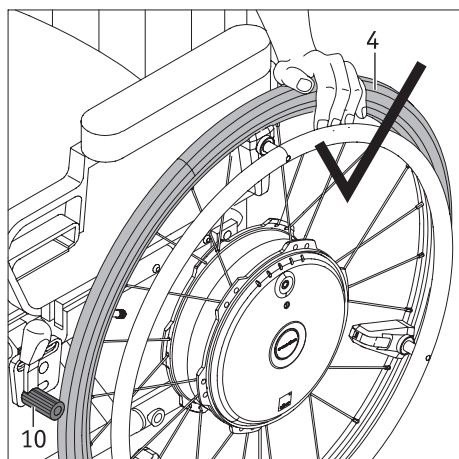


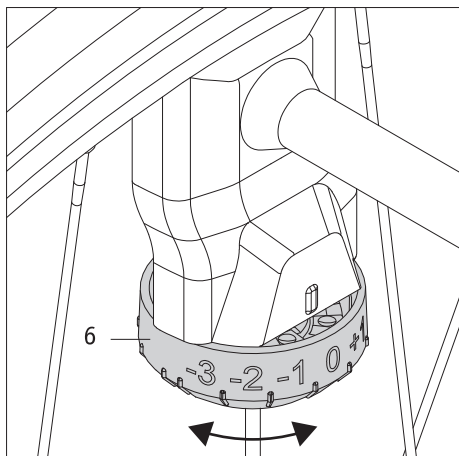
### 7. Important information on adjusting seating position

- Before adjusting your seating position in your wheelchair or getting out of the wheelchair, always engage the parking brake [10] so that the wheelchair cannot roll away inadvertently. Never place your hands on the push rims [5] for support when adjusting your seating position. This will cause permanent damage to the sensors on the push rims, and the wheels will stop working as a result.
- Instead, always use the wheel casing [4] for support and avoid touching the push rims [5] during such manoeuvres.



The e-motion must be switched off before you adjust your seating position, in order to prevent the wheelchair from rolling away inadvertently.





### 8. Important information on the sensor

The sensor [6] on the e-motion wheel is used to adjust the parameters described in the following chapter to suit the wishes of the wheelchair user. As such, never adjust the position of the sensor without first consulting your specialist dealer.

Make a note of the level set on the wheel (-3 to +3) so that it can be returned to the correct setting if adjusted inadvertently.

### 9. Travel profiles, assistance levels & the hill-holder function

#### Default travel profiles

The e-motion comes with a number of pre-set travel profiles that affect the handling of the wheelchair; these can be selected in accordance with the wheelchair user's medical condition or personal preferences.

The amount of power that can be applied to set the e-motion wheels in motion may be higher or lower depending on the selected travel profile. The travel profiles also affect the acceleration and overtravel of the e-motion wheels.

These pre-set travel profiles can be selected using the free e-motion M25 Mobility app. The app also offers a more detailed description of the travel profiles that are currently available to the user.

In addition to this, the specialist dealer can adjust the sensitivity of the sensors on each e-motion wheel to one of seven levels. This can be used to compensate for muscular imbalances in the wheelchair user's arms or hands so that they travel in as straight lines as possible with the e-motion, for example. Please consult your specialist dealer for more information on possible adjustments.

#### Individual travel profiles

In addition to the pre-set travel profiles, your specialist dealer can also create custom settings to adjust your e-motion to suit your individual needs. Once such adjustments have been made, however, it is no longer possible to select the pre-set factory travel profiles. Please consult your specialist dealer for more information on possible adjustments.

#### Assistance levels

The e-motion also has two assistance levels, which are set differently for each travel profile. The optional ECS remote control is required in order to select the two assistance levels. Alternatively, you can switch between the assistance levels using the e-motion Mobility app. You will need the Mobility Plus Package to do this; this is available at an extra cost. The version of the e-motion without ECS or the Mobility Plus Package only has one assistance level. You can purchase the ECS remote control or the Mobility app with the Mobility Plus Package as accessories for your e-motion at any time.

#### Assistance level 1 (factory setting)

When the wheel is switched on, it beeps once, the motor power is reduced and the handling is made less dynamic. This assistance level is primarily recommended for indoor use. It has lower power consumption, which increases the range of the unit.

## Assistance level 2

(Only available in conjunction with the ECS remote control or the Mobility app with Mobility Plus Package)

When the wheel is switched on, it beeps twice, and the motor power is set higher than for assistance level 1. Assistance level 2 is primarily recommended for outdoor use. It has higher power consumption than level 1, and thus a shorter range per battery charge.

## Hill-holder function

(Only available in conjunction with the ECS remote control or the Mobility app with Mobility Plus Package)

If your e-motion is equipped with an ECS remote control or you have the Mobility app with the Mobility Plus Package, you can use the hill-holder function. This function makes travelling up hills and ramps easier by preventing the wheelchair from rolling back when you adjust your hand position to push yourself further forwards.

## Travelling up and down hills with the hill-holder function activated

You can travel up and down hills as usual, and the e-motion wheels will adjust their handling based on the selected travel profile and assistance level. If the wheel's electronic system detects that the wheel is moving in the opposite direction to the original direction of travel, the automatic hill-holder function will engage.

This will apply the brakes to the e-motion wheels for 5 seconds to prevent you from rolling backwards. Once these 5 seconds have elapsed, the wheels will beep twice and the brakes will be slowly disengaged. Depending on the incline you are currently on, the wheels will run in neutral for a few seconds after this. If you push the push rims (either forwards or backwards) during the aforementioned 5-second period, the brake function will be disengaged immediately to allow you to continue your journey.

Safe travel on a slope or ramp (with activated hill-holder) depends on the total weight (= weight of the wheelchair user, the wheelchair, both e-motion wheels and any other accessories), as well as the charge level of the battery.

The hill-holder function safely holds the position at a maximum user weight of 150 kg (or a system weight of 190 kg) on inclines of up to 6 degrees (10.5%), provided the charge in the batteries is at least 10%. This value is independent of the e-motion wheel size in use. At a lower user or system weight, the hill-holder function can be used on steeper stretches as well. Please contact Alber GmbH if, in particular cases, you are not sure if it is safe to travel on an incline using the hill-holder function. When the hill-holder function is activated, only ever travel in a forwards direction. Otherwise, sufficient traction for safe travel or holding a position cannot be ensured.

## Important safety notes

- On particularly steep slopes and/or for particularly heavy total weights, the hill-holder function may not be able to prevent the wheelchair from rolling backwards slightly.
- The hill-holder function is not a parking brake; it is merely designed to delay the wheelchair from rolling backwards for a few seconds. As such, you should always use your wheelchair's parking brakes if you want to stop on a slope.
- Only use the hill-holder function when your battery has sufficient charge (when at least 2 LEDs are lit)!
- The hill-holder function must be re-activated every time the e-motion wheels have been switched off and back on again.
- Even when the hill-holder function is active, you must keep your hands close to the push rims at all times in order to prevent the wheelchair from rolling backwards at any time.

## 10. Conditions and instructions for using the e-motion as a vehicle seat in combination with a wheelchair

The use of wheelchairs as vehicle seats (e.g. in cars or vans) is regulated by national laws and the specifications of the wheelchair manufacturer. Combining the Alber e-motion with a manual wheelchair does not affect the way the wheelchair will behave in case of a crash. As such, the manual wheelchair remains the decisive factor in observing said laws and specifications. For this reason, we only permit the transport of persons in vehicles while they are seated in a wheelchair under the following conditions:

1. If the national laws permit the use of wheelchairs as vehicle seats.
2. If the manufacturer of the manual wheelchair has approved the wheelchair in question for the transportation of persons in vehicles.
3. If suitable fastening systems for the manual wheelchair (ISO 10542), suitable headrests and a suitable belt system (three-point safety belt) are provided in the vehicle in question. These must be used in accordance with the instructions for the wheelchair and the fastening system.
4. If the fastening system is not mounted on the e-motion wheels.
5. If the manual wheelchair in question is included in the Alber compatibility list for e-motion.

Wheelchair manufacturers usually use crash tests in order to assess whether or not a wheelchair is suitable for the transportation of persons in vehicles. However, these crash tests (which are conducted in accordance with ISO 7176-19) do not simulate every possible situation; side-on collisions are not included, for example. As such, we highly recommend re-seating the wheelchair user on a standard seat in the vehicle where he/she will be protected by the vehicle's own safety system, e.g. airbags and side-on collision protection.

If the vehicle is equipped with a wheelchair lifting platform or similar equipment, exercise extreme caution when moving the e-motion onto the platform. Drive slowly and carefully. Do not make any sudden, abrupt or jerky movements. Look in the direction of travel and avoid any distractions.

Alber GmbH accepts no liability for any accidents, their consequences, or damage to the wheelchair or the e-motion wheels that result from failure to comply with these requirements and instructions.

## 11. Care, safety inspections (maintenance) and disposal

### 11.1 Care



**Water ingress can permanently damage the drive.**

**As such, never clean the e-motion under running water or with a high-pressure cleaner.**

Always ensure that no liquid or moisture gets into the wheel hub. Due to this requirement, the utmost caution must be exercised when cleaning the e-motion. In particular, please observe the following instructions:

- Clean the surface of the wheels with a dry or slightly damp cloth.
- Never use scouring pads, abrasive detergents or aggressive chemicals.
- Never clean the e-motion under running water, e.g. using a hose or a high-pressure water jet. This can cause water to get into the system, causing irreparable damage to the electronics.
- Clean and treat the stub axles every 4 weeks with a spray containing PTFE.

Alber GmbH accepts no liability for any damage caused by water inside the device. Please note that such damage is not covered by our warranty.

### 11.2 Re-use

If your e-motion has been provided to you by your health insurance company and you do not need it any longer, please contact your health insurer, an Alber representative, or your authorised specialist dealer. Your e-motion can then be given to somebody else.

Before the e-motion is re-used, it should undergo maintenance. The bracket used to attach the e-motion to your wheelchair can be easily and quickly removed by your authorised specialist dealer or an Alber representative and fitted to another wheelchair.

In addition to the cleaning instructions specified in chapter 11.1, all the externally accessible plastic parts of the e-motion components need to be disinfected before it can be re-used. To do this, use a detergent suitable for wet disinfection and follow the manufacturer's instructions.

### 11.3 Maintenance

In Germany, the maintenance of medical products is regulated by law in the Medical Device Directive (MPBetreibV), Section 7. According to this law, maintenance measures, especially inspections and servicing, are required in order to ensure continuous safe and proper operation of medical products.

Based on our market observations, an interval of two years has proven reasonable for maintenance of our products when used under normal operating conditions.

This guideline value of two years may vary depending on the actual use of the product and the behaviour of the user. Checking the degree of use and the user behaviour is the responsibility of the operator.

In any case, we strongly recommend that you clarify beforehand to what extent the cost of the maintenance work for our products is covered by your health insurance provider, especially with regard to any existing contracts.

### 11.4 Disposal



This device, its batteries and its accessories are durable products.

Nevertheless, they may contain substances that are hazardous to the environment if the parts are disposed of in locations (e.g. landfills) that are not intended for the disposal of such materials according to the applicable statutory regulations for the country in question.

The product is labelled (in accordance with the WEEE Directive) with a "crossed-out rubbish bin" symbol, reminding you that it must be recycled.

As such, please protect the environment and return the product to your local recycling centre at the end of its service life.

As this product is not covered by the regulations of the WEEE Directive in all European countries, please familiarise yourself with the applicable waste disposal regulations in your country.

Alternatively, return the e-motion to your authorised specialist dealer or Alber GmbH for proper and environmentally safe disposal.

## 12. Storage

If your wheelchair and the e-motion are going to be stored for an extended period of time (e.g. several months), please observe the following directions:

- Store the wheelchair according to the wheelchair manufacturer's specifications.
- Protect the e-motion components with film in order to keep moisture out.
- Store the wheelchair and all e-motion components in a dry room.
- Ensure that no moisture penetrates into or drips onto the wheelchair or e-motion components.
- Ensure that the wheelchair and e-motion are not continuously exposed to solar radiation (e.g. through windows).
- Ensure that unauthorised persons (especially children) do not have unsupervised access to this room.
- Observe the notices on how to store the battery pack.
- The wheelchair and the e-motion components must be cleaned prior to recommissioning.
- Check whether maintenance is required before recommissioning, and arrange this if necessary.

## 13. Product safety information

All the components of your e-motion have undergone functional tests and extensive inspections. However, in the event of an unforeseeable impairment in the operation of the e-motion, the following web pages contain prompt and appropriate safety information for customers:

- Home page of Alber (manufacturer of the e-motion)
- Home page of the German Federal Institute for Drugs and Medical Devices [BfArM]

If corrective measures are necessary, Alber will notify the specialist dealer, who will then contact you.

## 14. Product service life

We expect an estimated average service life of five years for this product, provided that the product is used as intended and maintained and serviced in accordance with all the instructions specified in the operating manual. This service life can be extended by handling, servicing, maintaining and using the product with care and if there are no technical limitations that arise from further developments in science and technology. However, the service life may also be reduced significantly by excessive or improper use. The service life required by the applicable standards does not constitute an additional warranty.

## 15 Warranty and liability

### 15.1 Warranty for defects

Alber guarantees that the e-motion is free of defects at the time of delivery. This warranty expires 24 months after the date of delivery of the e-motion.

### 15.2 Durability warranty

Alber provides a 24-month durability warranty for your e-motion.

The durability guarantee does not include:

- Devices whose serial numbers have been tampered with or removed.
- Wear parts such as tyres, control elements, spokes and batteries.
- Defects caused by normal wear, incorrect handling including failure to comply with the instructions in this operating manual, accidents, reckless damage, and damage caused by fire, water, force majeure and other events that are outside the control of Alber GmbH.
- Parts that may need to be serviced or replaced as part of normal use (e.g. tyre change).
- Device inspection without detection of a fault or defect.

### 15.3 Liability

As the manufacturer of the e-motion, Alber GmbH accepts no liability for the safety of the product under the following circumstances:

- If the e-motion is handled incorrectly
- If the e-motion is not serviced at the prescribed two-year intervals by an authorised specialist dealer or Alber GmbH
- If the e-motion is operated in contravention to the instructions in this operating manual
- If the e-motion is operated with an insufficient battery charge
- If the e-motion is repaired or modified by persons not authorised to carry out such work
- If third-party parts are attached to or combined with the e-motion
- If parts of the e-motion are removed

## 16. Important legal information for the user of this product

Incidents that occur due to product malfunctions and result in serious personal injury are to be reported to the manufacturer and the competent authority of the EU Member State in which the user is established.

With regard to the Federal Republic of Germany, these are:

- Alber GmbH (see the back of this operating manual for details of the address)
- The German Federal Institute for Drugs and Medical Devices (BfArM),  
Kurt-Georg-Kiesinger-Allee 3  
53175 Bonn  
www.bfarm.de

With regard to EU Member States, please notify:

- Your Alber dealership (see the back of this operating manual for details of the address)
- The authorities in your country responsible for incidents involving medical devices

An overview of the competent authorities can be viewed online at: <http://ec.europa.eu/growth/sectors/medical-devices/contacts/>

## 17. Important information about air transport

With regard to its technical design, the e-motion, and specifically the lithium-ion battery contained therein, complies with the applicable standards, guidelines and laws. It meets the requirements of the International Air Transport Association (IATA) for air transport. We confirm this annually in the form of our transport certificate. This is prepared on the basis of the new IATA Dangerous Goods Regulations, which are not usually published until mid-December of each year. The current certificate is available for download on the Alber homepage: (<https://www.alber.de/de/hilfe-service/alber-service/reisen-mit-alber-produkten/>). We would be happy to send it to you on request.

However, when planning a trip, please contact your travel agent or the airlines to discuss taking the e-motion with you on any flight you may book. At the end of the day, the decision to allow or refuse the e-motion on board is made at the pilot's discretion. Neither Alber GmbH nor their specialist dealers are able to influence the pilot's decision.



**Please also note the applicable regulations for transporting lithium-ion batteries in the countries you are visiting (see also chapter 3.5.8).**

## 18. Important information about the bluetooth connection

The basis for the Cruise and Remote Mode (wheelchair not occupied – see App instruction for use) of the e-motion M25 is an active Bluetooth connection between the power wheels and the App. If this Bluetooth connection is interrupted, the e-motion M25 stops continuously cruising / driving. This allows the user to react to emergency situations at any time by operating the system via the handrims like the e-motion M25 in the normal drive mode.

An integrated set of technologies guarantees an appropriate Quality of Service (QoS) for both Bluetooth connections.

However, both Bluetooth connections are highly secured by latest up-to-date encryption and under consideration of Sweeney Tooth vulnerabilities.

An interruption of the Bluetooth Connection can have various reasons.

The e-motion M25 passed the EMC testing according to ISO 7176-21 including the active Bluetooth connection and the Wireless Coexistence testing according to ANSI C63.27:2017 successfully.

Therefore interruptions in the household or office environment are highly unlikely, nevertheless not all possible combinations and of massive interference sources can be anticipated.

So, it is very unlikely that the Bluetooth connection can be interrupted due to other interference sources like e.g. anti-theft alarm systems.

Intentional hacker attacks cannot be entirely excluded in the medical device market.

An attacker can try to crash the device by e.g. triggering hard faults through the so called "SweeneyTooth vulnerability", causing denial of service conditions.

In the unlikely event a successful attack, the e-motion M25

- Normal drive mode: An attack during this mode has no influence on driving behaviour as the e-motion acts in this mode independent from any wireless devices.
- In the Cruise Mode: The continuous motor driving support stops. Unintended movements are impossible. In any cases the connection is

lost; you are always able to react to avoid dangerous situations by moving away from the danger zone by propelling the system like an e-motion M25 in the normal drive mode.

- In the Remote Mode (wheelchair is un-occupied – see App instruction for use): The motor driving support stops in order to enter the safe state of the system (=no more auxiliary power provision). Unintended movements are impossible.

### **19. Your Contact Person (USA only)**

If you have problems with the efix components (including the battery-pack and the charger) please contact your local dealer or

*Alber USA LLC*

*1005 International Drive*

*Oakdale, PA 15071-922*

*United States*

*Phone 001-724-6957822*

*Fax 0017246953710*

*E-Mail: [info@alber-usa.com](mailto:info@alber-usa.com)*

## 20. Technical data

### Wheel

Range (\*): 25 kilometres in accordance with ISO 7176-4  
Maximum speed: 6 km/h / 8.5 km/h (with Mobility Plus Package)

**Always observe the country-specific traffic regulations**

Drive output: 2x80 W  
Motor voltage: 36.5 V  
Operating temperature: -25°C to +50°C  
Permissible total weight: 22" wheel: 165 kg; maximum body weight: 125 kg (\*\*)  
24" wheel: 190 kg; maximum body weight: 150 kg (\*\*)  
25" wheel: 190 kg; maximum body weight: 150 kg (\*\*)

Type of wireless technology: IEEE 802.15.4 (Bluetooth Low Energy)  
FCC compliance: CFR47, Part 15  
FCC ID: A8TBM78ABCDEFGH  
Wireless Coexistence Compliance: ANSI C63.27-2017, separation distance  $\geq 0.25\text{m}$   
EMC Compliance: ISO 7176-21:2009  
RF frequency range: 2.402 GHz to 2.480 GHz  
RF maximum output power: 1.5 dBm  
Wireless operating range: 10m / class 2  
Wireless functions: Speed, Emergency stop, Operating mode (on/standby)

### Battery

Battery type: Lithium-ion, 10ICR19/66-2 - rechargeable, leak-proof and zero-maintenance  
Rated operating voltage: 36.5 V  
Charging temperature: 0°C – 40°C  
Protection class (wheel with battery): IPx4 (protected against splash water)

### Miscellaneous

All e-motion components are protected against corrosion.

### Weight of components

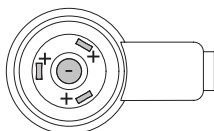
Wheel: 7.8 kg  
Charger: 1.2 kg  
Total weight: 15.6 kg

- (\*) The range varies depending on the terrain and the prevailing driving conditions. The specified maximum range is valid for optimum travel conditions (level terrain, fully recharged batteries, ambient temperature around 20°C, smooth travel, etc.).
- (\*\*) This value indicates the upper technical limit and depends on the wheelchair model. The suitability of the operator can also reduce this value.
- All electrical components of the e-motion are protected against spray water and humidity.
- Some of the specifications listed have been calculated using applicable standards and test dummies with a weight of 150 kg. Nevertheless, some of the values produced during operation of the e-motion may differ from the specifications provided.

### Charger

Model: PS 4820  
Mains voltage: 100...240 VAC, 50...60 Hz  
Power output: 96 W  
Output voltage: 2 x 48 VDC  
Output current: 2 x 1.0 A  
Protection rating: IP 31  
Ambient temperature: Operation 0...40°C  
Storage -40...+65°C  
Humidity: Operation 10...80%  
Storage 5...95%  
Air pressure: Operation 500...1060 hPa  
Storage 700...1060 hPa

Polarity of the two charging plugs:







The e-motion and the corresponding off-board charger comply with the applicable sections of standard EN 12184 for electric wheelchairs and standard ISO 7176-14 for wheelchairs and comply with the EU Medical Devices Directive (MDR) 2017/745. The e-motion is a Class I medical device.

We reserve the right to modify the design and technology of our products to incorporate the latest developments.

### Tyres for 22" wheels

Name	Manufacturer, model and type	Size (inches)	Air pressure in bar and kPa
Schwalbe Rightrun	Schwalbe, Rightrun 25-489, black	22 x 1"	Min. 6.0/max. 10.0 bar Min. 600/max. 1000 kPa
Airless Bereifung	Alber, black casing with PU insert	22 x 1 3/8"	Puncture-proof

### Tyres for 24" wheels

Name	Manufacturer, model and type	Size (inches)	Air pressure in bar and kPa
Schwalbe Rightrun	Schwalbe, Rightrun 25-540, black	24 x 1"	Min. 6.0/max. 10.0 bar Min. 600/max. 1000 kPa
Schwalbe Marathon Plus	Schwalbe, Marathon Plus 25-540, black	24 x 1"	Min. 6.0/max. 10.0 bar Min. 600/max. 1000 kPa
Puncture-proof tyres	Rolko PROSPEED, material: PU, black	24 x 1"	Puncture-proof
Airless Bereifung	Alber, black casing with PU insert	24 x 1 3/8"	Puncture-proof

### Tyres for 25" wheels

Name	Manufacturer, model and type	Size (inches)	Air pressure in bar and kPa
Schwalbe Rightrun	Schwalbe, Rightrun 25-559, black	25 x 1.1"	Min. 6.0/max. 10.0 bar Min. 600/max. 1000 kPa
Schwalbe Marathon Plus	Schwalbe, Marathon Plus 25-559, black	25 x 1"	Min. 6.0/max. 10.0 bar Min. 600/max. 1000 kPa



Only the tyre types specified in the table may be used on the e-motion wheel. The use of other types of tyre is prohibited. If you have a flat tyre, please contact your specialist dealer.



The use of manual wheelchair wheels with 1" tyres in conjunction with 1 3/8" tyres is only permitted if the parking brakes are adjusted to suit the wheels each time they changed.

## 21. Labels and explanation of symbols

There are labels on the wheels and the battery charger which contain various details on the product. In case of a fault in the device, components can be replaced by your specialist dealer within the scope of the Alber exchange parts pool. For this purpose, your specialist dealer will require certain items of information from the labels.

<b>Systemnr. / System No.</b> Produkt/Modell [Product/Model] Betriebsspannung [Rated Voltage] Motor Nennleistung [Rated Power] Max. Geschwindigkeit [Max. Speed] Batterie Typ [Battery Typ] Batteriekonfiguration [Battery Config.] Batterie Nennkapazität [Rated Capacity] Batterie Nennenergie [Rated Energy]	<b>M25200240</b> e-motion M25 36,5 V 2 x 80 W 6 km/h [4mph] Lithium-Ion 10ICR19/66-2 2 x 4,3 Ah 2 x 156,95 Wh	 2020-02-07 
	<b>Alber GmbH</b> Vor dem Weissen Stein 14 D-72461 Albstadt Made in Germany	(01)04046727184865 (11)200207 (21)M25200240

### System label on the e-motion wheel

Please specify the system number of the wheel when exchanging a device as part of the Alber exchange parts pool. The system label is on the back of the e-motion wheel.

Wartung Maintenance			
am/at: .....			
durch/by: .....			
in (PLZ)/in: .....			
01	nächste	07	
02	next	08	
03	<b>alber</b>	09	
04		10	
05		11	
06		12	
2021	2022	2023	2024


**“Maintenance” label on the e-motion wheel**


This label indicates the time of the next maintenance due. It is located on the back of the e-motion wheel.

**Betriebsmodus-Anzeige / Operation Status**

LED Farbe / LED Colour	LED Modus / LED Mode	Status
Rot / Red	Dauerlicht / Illuminated	Fehler / Fault
Orange	Dauerlicht / Illuminated	Betriebsbereit / Ready for use
Grün / Green	Blinkend / Flashing	Ladevorgang läuft / Charging in progress
Grün / Green	Dauerlicht / Illuminated	Ladevorgang abgeschlossen / Charging completed

**Battery Charger Art. No. 1592086**

Gerätetyp / Type Reference PS4820  
 Ausgangsnennspannung / Rated Output Voltage 2 x 48 V   
 Ausgangsnennstrom / Rated Output Current 2 x 1,0 A  
 Ausgangsnennleistung / Rated Output Power 96 W  
 Eingangsnennspannung / Rated Input Voltage 100 – 240 VAC, 50 – 60 Hz  
 Eingangsstrom / Input Current 2,5 A  
 Schutzart / Degree of Protection IP 31  
 OEM Hersteller / OEM Manufacturer ANSMANN AG  
 OEM Gerätetyp / OEM Type Reference 2041 – 3041

 **ACHTUNG!** Vor der Benutzung ist die Gebrauchsanweisung zu lesen.  
 Nur zur Verwendung in trockenen Räumen.  
**CAUTION!** Read user manual before use. For indoor use only.  
**AVERTISSEMENT!** Il faut lire le mode d'emploi avant d'utiliser l'appareil.  
 Appliquer exclusivement à l'intérieur.

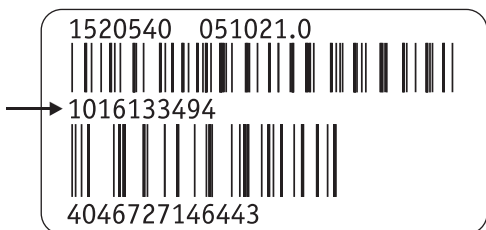


**alber** GmbH  
 Vor dem Weißen Stein 21  
 72461 Albstadt



**“Technical data” label on the battery charger**

The label shown opposite is found on the underside of the battery charger, and provides information on its technical data and the displays shown during the charging process.



**Component label on the battery charger**

Please specify the component number of the charger (number in centre of label, marked with an arrow in the diagram opposite) when exchanging a device as part of the Alber exchange parts pool.

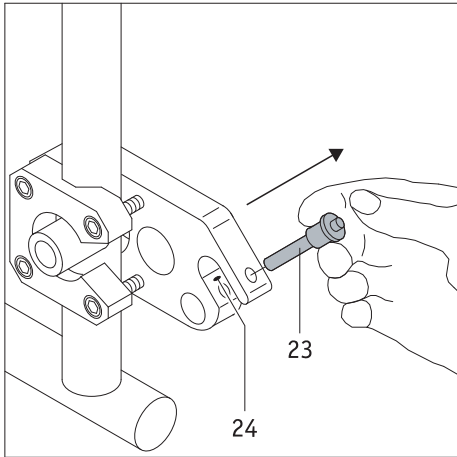
The component label is on the underside of the battery charger.

**22. Product safety information**

All the components of your e-motion have undergone functional tests and extensive inspections. However, in the event of an unforeseeable impairment in the operation of the e-motion, the following web pages contain prompt and appropriate safety information for customers:

- Home page of Alber (manufacturer of the e-motion)

If corrective measures are necessary, Alber will notify the specialist dealer, who will then contact you.

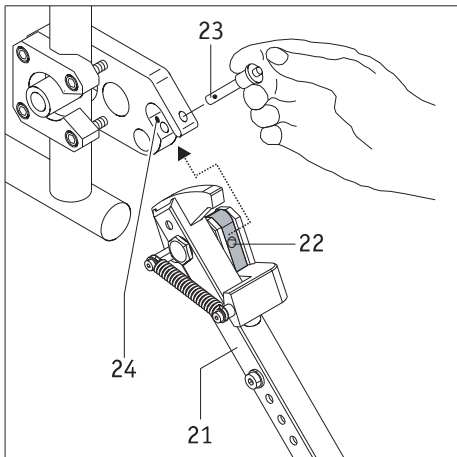


### Anti-tippers (art. no. 1489214)

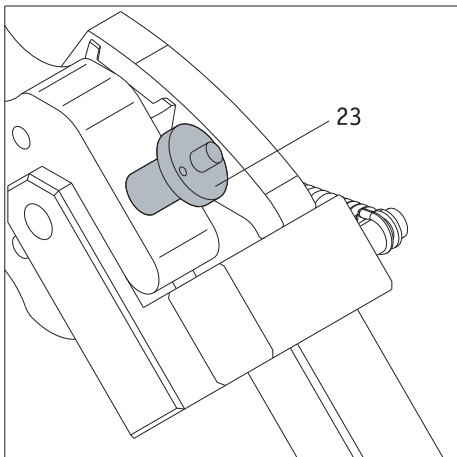
Since your wheelchair may already be equipped with anti-tippers, Alber anti-tippers are only offered as optional accessories. The use of original anti-tippers is subject to the instructions and safety information provided by the manufacturer that apply to their use. When using Alber anti-tippers, two further brackets are fitted to your wheelchair in which the anti-tippers are inserted. The following instructions and safety precautions apply.

#### Fitting and removing the Alber anti-tippers

- Switch off the e-motion wheels before attaching the anti-tippers.
- Remove the quickpin [23] from the bracket mounting fork [24] by pressing on the pin in with your thumb and pulling it out using your index and middle finger.

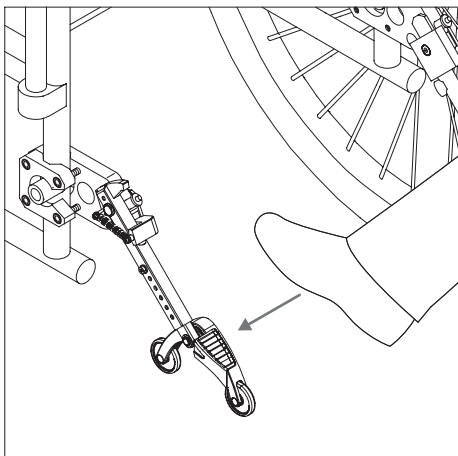


- Push the clamping piece for the anti-tipper [22] into the bracket mounting fork [24].
- Lock the bracket mounting fork [24] in place using the quickpin [23]. To do this, press the pin in with your thumb and then push it **fully** into the bracket as far as it will go.



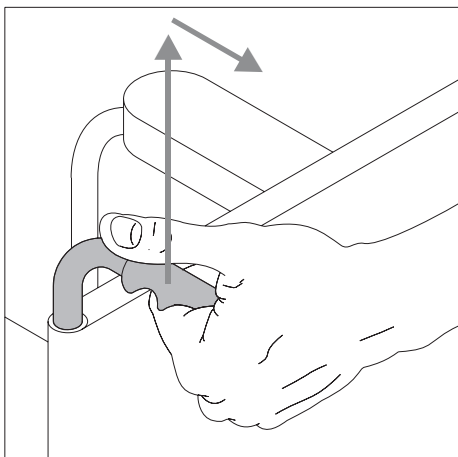
- Check that the quickpin [23] holds fast in the bracket mounting fork [24]. It must not be able to be removed without pressing the releasing device.
- Fit the second anti-tipper.

**Follow the above sequence in reverse to remove the anti-tippers.**

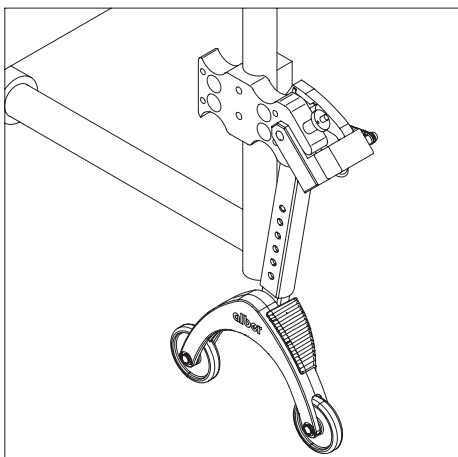


### Using the Alber anti-tippers

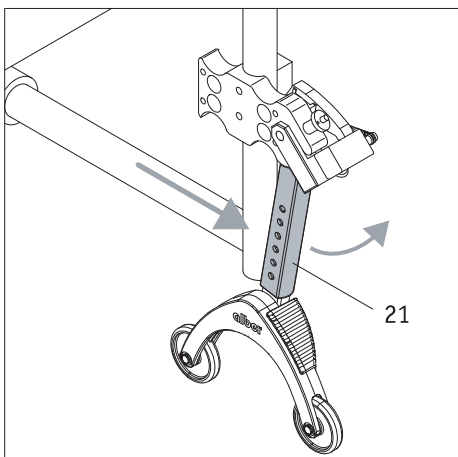
- Press your foot on an anti-tipper as shown in the diagram.



- Whilst doing so, pull the wheelchair upwards and to the rear a little by its handles until the wheelchair has been raised and the anti-tippers click into a fixed position.

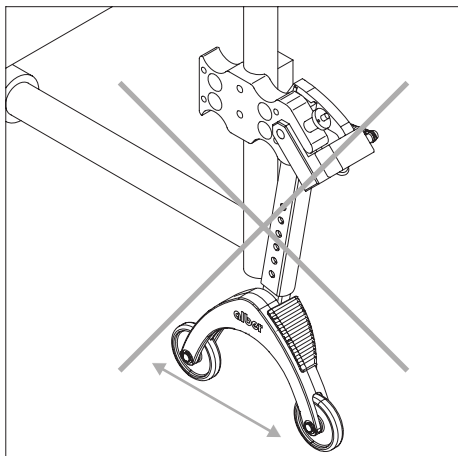


- You can now fit or remove a wheel. E-motion wheels must be switched off prior to fitting and removal.
- Repeat the process with the second anti-tipper on the other side of the wheelchair.



- Once the wheels are fitted, you can return the anti-tippers to their starting position. To do this, push the wheelchair forwards and push back the holding rod [21] using your foot at the same time.

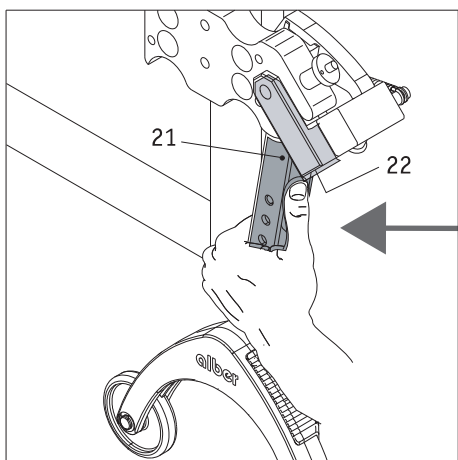
**Important operating and safety instructions**



Jacking up the wheelchair is not permitted when the wheelchair user is still seated.

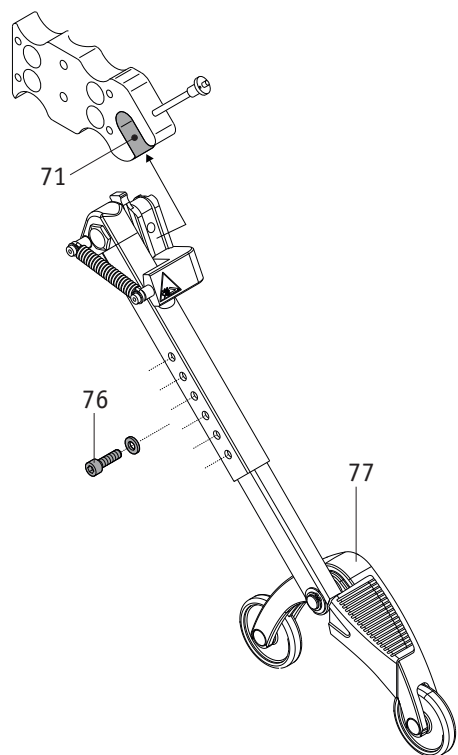


Anti-tippers are not transfer rollers. Do not move the wheelchair when it is jacked up.



Caution must be exercised when moving or collapsing the anti-tippers, particularly during manual adjustment or activation. As a result of the high spring force required there is a risk of crushing between the holding rod [21] and the clamping piece [22].

**Important information**



Any changes and assembly work on the anti-tippers, such as adjusting the distance to the ground, may only be carried out by a trained specialist dealer or by an Alber regional director.



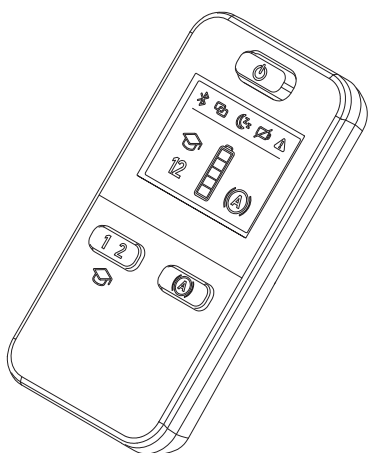
The locking screw for the plug-in part (see [76] in the diagram opposite) must be tightened to 5 Nm. Arrange for your specialist dealer to carry out this assembly work.



The maximum permissible load for anti-tippers fitted in pairs is 210 kg. The use of only one fitted anti-tipper is not permitted.



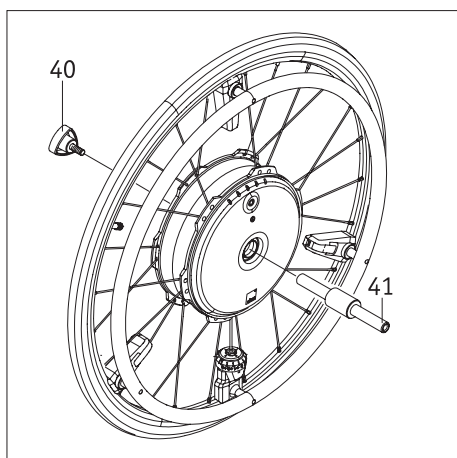
Regularly check that the anti-tippers are still seated securely in the mounting fork [71] of the bracket. Check that the support angle [77] can still move freely. If screw connections have loosened or have even come loose or if the support angle is no longer able to move freely, contact your authorised specialist dealer to rectify the situation.



### ECS remote control (art. no. 1592486)

As detailed in chapter 10, the e-motion has two assistance levels (which are set differently for each travel profile) and a hill-holder function.

These functions are only available when using the optional ECS remote control or the Mobility app with the Mobility Plus Package, which is available at an additional cost.



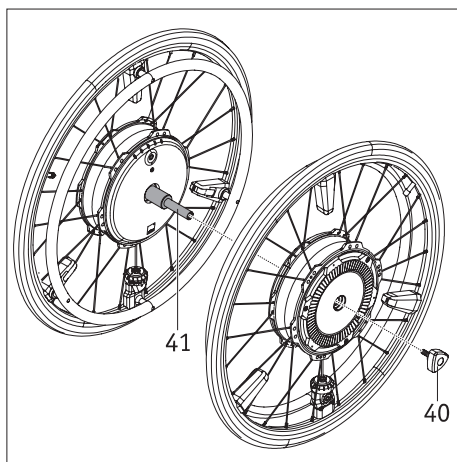
### Stub axle for transport (1591362)

#### Connecting the e-motion wheels

- Switch off the e-motion wheels (see chapter 2.3).
- Take the wheels off the wheelchair and remove the stub axles [8].
- As shown in the diagram, push the axle [41] into the front of an e-motion wheel and screw the wheel and axle together using the handle [40].
- Take the second e-motion wheel, push it onto the axle [41] front side first and screw the wheel and the axle together using the second handle [40].
- Both wheels are now secured for transport.

#### After transport

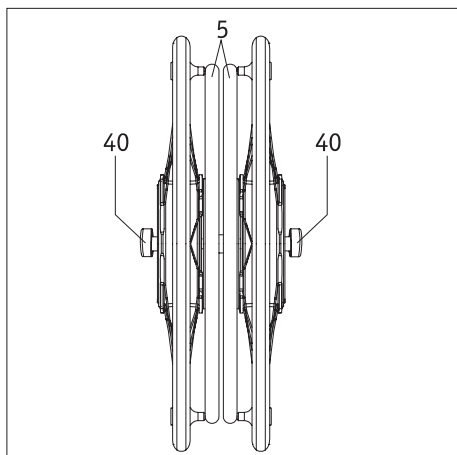
- Unscrew the two handles [40] from the axle [41].
- Pull the axles [41] out of the two e-motion wheels.
- Screw the two handles [40] onto the axle [41] so that the three separate parts are connected and cannot get lost.



**Never hold an e-motion wheel by its push rims [5]. This could damage the fitted sensor. Instead, hold the e-motion wheel by its tyre or the wheel hub.**



**When connecting the wheels, take care not to switch them on inadvertently. Both wheels must always remain switched off when transporting them by plane.**



### Mobility Plus package (art. no. 1592408)

When you purchase the optional Mobility Plus Package, you will receive a licence code which you can enter in the e-motion Mobility app to unlock useful additional functions for your e-motion:

- Increase the maximum assisted speed from 6 km/h to 8.5 km/h. Always observe the country-specific road traffic regulations
- Choice of two assistance levels (alternative to ECS)
- Activate training mode (alternative to ECS)
- Activate the hill-holder function (alternative to ECS)
- Travel in cruise mode without having to keep pushing the push rims (similar to the cruise control function in a car)
- Remote control the wheelchair with your smartphone when it is unoccupied (e.g. to re-park it)
- Accessible smartphone navigation system (Easy Navi)
- Push counter – counts the number of pushes on the push rims during a trip

Before putting these functions into operation, please read the operating manual for your e-motion, particularly the safety and hazard information contained therein. In addition to the general safety information, the following information must be observed when using the Mobility Plus Package.



**Please observe the country-specific road traffic regulations when increasing the assistance speed from 6 km/h to 8.5 km/h.**

#### Remote Function

- Remote control of the wheelchair by means of the remote function is only permitted when the wheelchair is unoccupied.
- If you have not already done so, affix the enclosed “L” and “R” stickers to the left and right e-motion wheels respectively. If the wheels are inadvertently put on the wrong way round, forwards/backwards and left/right steering will be inverted.
- Watch out for obstacles in your immediate vicinity and avoid collisions. Do not use this function outdoors or in tight spaces.
- Note: While the remote function is active, the maximum speed will be limited to 2 km/h, regardless of the assistance level. The torque will be 10% per wheel. It may not be possible to use the remote function for heavy wheelchairs on long-pile carpets.

#### Cruise mode

- If you have not already done so, affix the enclosed “L” and “R” stickers to the left and right e-motion wheels respectively. If the wheels are inadvertently put on the wrong way round, forwards/backwards and left/right steering will be inverted.
- Before using the cruise mode in public areas, you should first familiarise yourself with the driving characteristics in a safe and risk-free environment. Get a feel for the handling of the continuous drive, how to change direction during continuous drive, how to accelerate to an increased continuous speed, how to slow down, and what to do in case of an emergency stop. You should test and practice these fundamental driving situations before moving on public roads.
- When cruise mode is activated, your hand must always be positioned near the push rims so that you can react quickly to change direction and stop the wheelchair safely.
- When travelling on slopes, it is possible for cruise mode to be deactivated unintentionally if the Bluetooth connection to the smartphone is interrupted or if both push rim sensors receive a travel signal as a result of a vibration. If cruise mode is deactivated, the e-motion returns to freewheeling mode and the speed of the wheelchair can increase. When travelling on slopes and inclines, keep your hands close to the push rims and be prepared to brake.
- In order to prevent the function from starting up inadvertently, always deactivate cruise mode when stopping or taking a break from driving. Use the cruise mode function in the Mobility Plus App to deactivate the function. Please familiarise yourself with the app so that you can do this.
- Cruise control may only be activated by the person sitting in the wheelchair. Unauthorised persons not familiar with the cruise mode function are not permitted to activate or use the function.
- In order to ensure that the battery indicators for the left and right drive wheel batteries corresponds to the e-motion app display on your smartphone, and that the direction of your pushes on the push rims are interpreted accurately, the wheels must be attached in the correct positions on the right and left sides respectively. Use the stickers (L/R) included on delivery to mark the wheels accordingly (in the direction of travel from the perspective of the wheelchair user).
- Never use the parking brakes of the wheelchair to perform a change in direction while driving in cruise mode. The brakes on your wheelchair are parking brakes designed to keep the wheelchair in its parked position, not service brakes. They are not permitted for any use other than parking except in case of emergency.
- Always keep a close eye on the road ahead of you, as the front wheels of the wheelchair may lock up if they encounter obstacles or uneven surfaces, causing falls and serious injuries.
- In order to avoid dangerous driving situations, mounting and dismounting kerbs is only permitted when cruise mode is switched off.

- It is prohibited to use cruise mode in hazardous areas, especially those listed below:
  - Quay walls, berths and marinas, paths and areas near water, bridges and dykes without railings
  - Narrow footpaths, gradients (e.g. ramps and driveways), narrow paths along slopes, mountain paths
  - Narrow and/or steep/inclined paths along main and side roads or near precipices
  - Paths covered with leaves, snow or ice
  - Ramps and lifting equipment on vehicles



**Any unauthorised use constitutes misuse of the device.  
Alber accepts no liability for any damages resulting from abuse of the device.**



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Vostra rappresentanza Alber / Su representación Alber / Din Alber representant /  
Din Alber-agenturene / Uw distributeur Alber / Deres Alber-repræsentation



**Alber GmbH**

Vor dem Weißen Stein " %

72461 Albstadt-Tailfingen

Telefon +49 (0)7432 2006-0

Telefax +49 (0)7432 2006-299

info@alber.de

www.alber.de

www.invacare.ca

570 Matheson Blvd. E. Unit 8 Mississauga, Ontario

L4Z 4G4 Canada

(800) 668-5324

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