

alber[®]

**KRAFT, DIE AUS DEN
RÄDERN KOMMT.**

e-motion[®]

Gebrauchsanweisung

de

User manual

en

Instructions d'utilisation

fr

Manual de instrucciones

es

Istruzioni per l'uso

it

Brugsvejledning

dk

Gebruiksaanwijzing

nl

Bruksanvisning

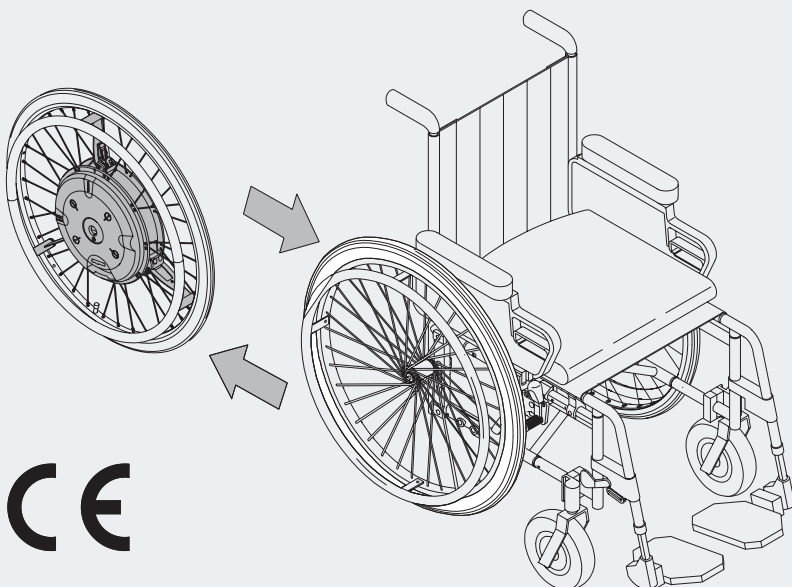
no

Instruktionsbok

se

Käyttöohjeet

fi



CE

Service Center (Deutschland)

Montag bis Donnerstag von

8.00 - 18.00 Uhr

Freitags von

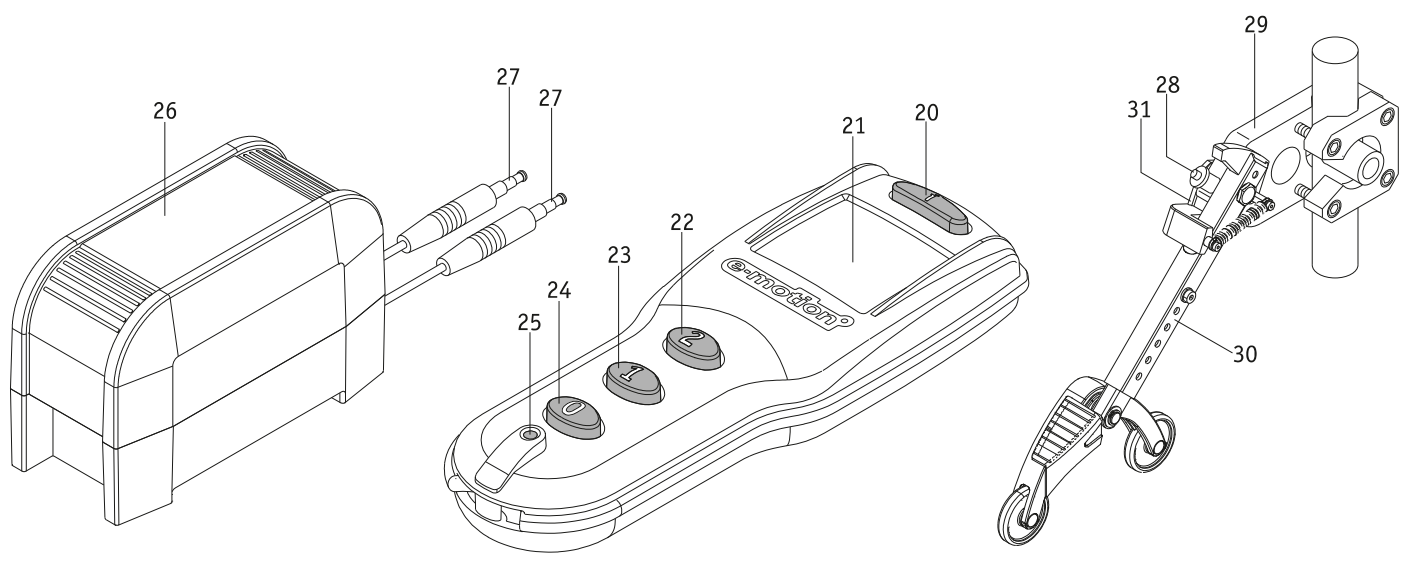
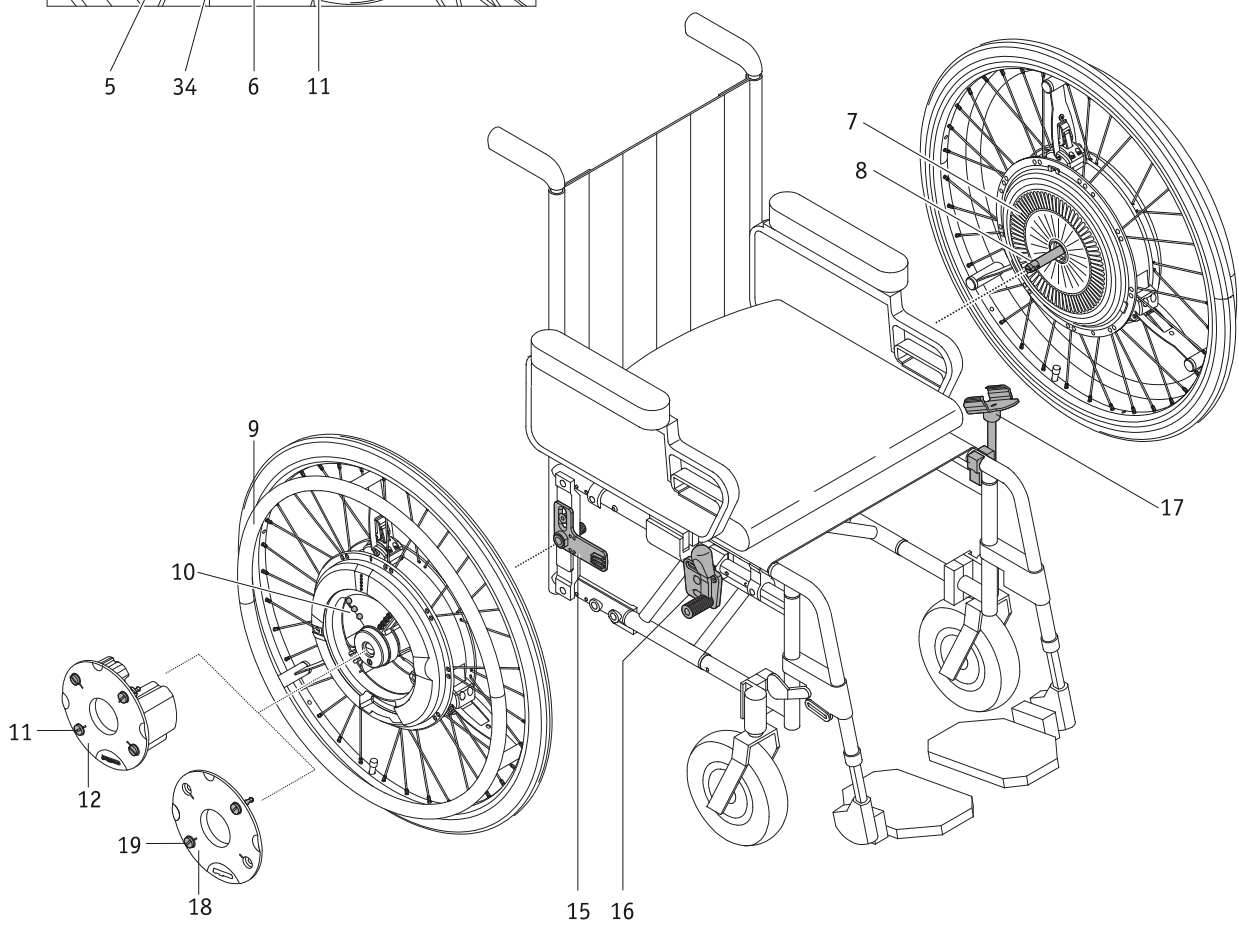
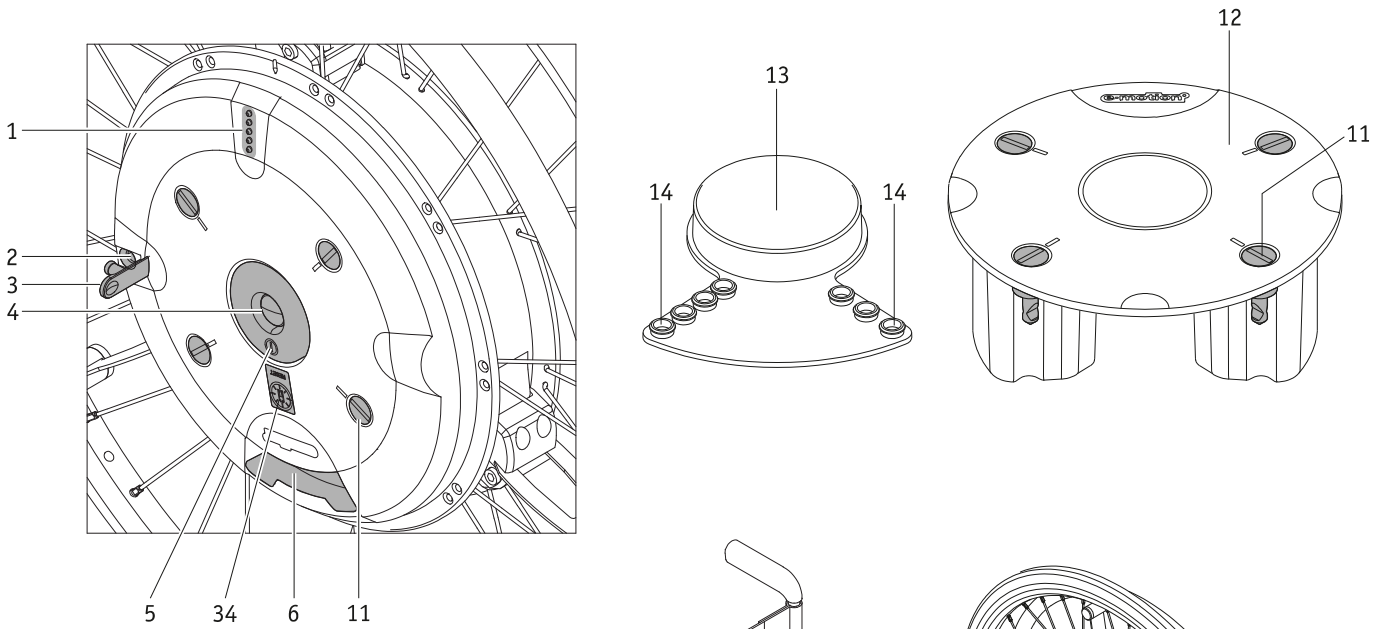
8.00 - 16.00 Uhr

erreichbar unter

Telefon (0800) 9096-250

(gebührenfrei)





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, 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 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 energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the powered 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, 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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This operating manual is available for download on our website
www.alber.de
If you require a version that is written in a larger font, contact
our Alber Service Center.

1. Introduction

1.1 Important safety information –You must read, understand and follow all of the warnings and instructions in this manual. Failure to do so might cause serious bodily injury.

The e-motion is an add-on drive for wheelchairs. 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, the user is 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 agent 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 Center (Tel: 0800 9096 250).

When operating the e-motion, observe the specifications of the wheelchair manufacturer (e.g. maximum slope, air pressure of tyres, the highest speed etc.), and strictly adhere to the operating instructions of the wheelchair. Never exceed any of the specified limit values.

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 in department stores.

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

The e-motion wheels have to be switched off while doing sports in the wheelchair, for example weightlifting or something similar.

Combining the e-motion with accessories that have not been approved by Alber is also prohibited.

2



Therefore, do not start using the e-motion before you have been properly instructed in its operation by an authorised specialist dealer or an agent of Alber GmbH.



When applying a force to the push rim the e-motion power wheels support driving and braking. The necessary force on the push rim is significantly reduced in comparison to a manual wheelchair.



The e-motion is only intended for transporting persons with restricted mobility and must not be misused, for example by children playing with it or by transporting goods.

1.2 Intended use of the e-motion

Wheelchairs with added e-motion wheels are exclusively intended for the transport of persons with walking impairments. No other parts may be added on except the accessories approved by Alber for operation.

The e-motion must be handled, operated or used only under the following circumstances:

- Observing the specifications, instructions and recommendations of this instruction manual
- The device is handled, operated or used exclusively by a person having been properly instructed and trained in its correct and safe operation and use.
- Neither the user nor third parties have made technical modifications to the device
- Operate only on firm surfaces. Do not operate on loose gravel, sand, mud, snow, ice or deep puddles.
- Do not use or operate on escalators, motorized walkways or stairs.
- Do not use to carry or transport loads, objects or other persons.
- Do not add or install accessories or components not approved by Alber.
- Do not operate or use the e-motion in an abrupt, sudden or jerky manner. Perform all operations and functions in a smooth, uniform, gentle and steady manner.
- When driving the e-motion, always look into the direction of travel and do not become distracted.

A person having received proper training is someone who has been instructed on the proper operation, use, responsibilities and possible hazards resulting from improper handling, operation or use of the e-motion.

Instruction and training is to be provided by authorized specialist dealership or Alber GmbH.

Handling, operating or using the e-motion by persons not having received proper instruction and training is explicitly prohibited.

The intended use also includes compliance with this instruction manual's specifications and requirements on performing safety checks and

following safety procedures in operating or driving the e-motion.

Any handling, use or operation contrary to the directions and instructions of this operating manual or exceeding the technical performance limits defined in this manual is a misuse of the device and can cause serious bodily injury.

Alber refuses any liability for resulting damage or injury.

1.3 Permissible operating conditions/places of use

Follow the instructions on permissible operating conditions in the user manual of your wheelchair to which the e-motion is attached. Any limitations on permissible operating conditions (e.g. maximum climbing capacity, maximum permissible obstacle height, maximum user weight, etc.) must also be observed when operating the e-motion!

The e-motion can be operated only at temperatures between -25 °C and +50 °C.

Avoid travel on non-solid surfaces (e.g. on loose gravel, sand, mud, snow, ice or through deep puddles).

Follow the safety instructions and hazard notes in Chapter 11.



It is prohibited to drive so-called “wheelies” (taken-off anti-tippers from the wheelchair, e-motion wheels on the floor, front wheels (castors) of the wheelchair hovering in the air). The Alber GmbH refuses to take over any liability for accidents caused by this kind of driving.



When not in use, do not expose your e-motion to strong sunlight for long periods of time. This could cause the motor to heat up and in an extreme case, not be able to operate at full power. Even plastic parts age quicker under intense sunlight. Pay attention with the push rims. They can heat up if there is an incident solar radiation. This can cause burnings when touching the push rims.

1.4 Standard scope of delivery

- two e-motion wheels
- two battery packs (maintenance free)
- two protective covers for the wheel contacts
- two protective covers for the battery contacts
- one mains charger inc. operating instructions
- These operating instructions

The wheelchair must have special brackets for attaching the e-motion. If this is not the case, please contact your specialist dealer directly or one of the Alber factory representatives.

1.5 Optional accessories

- Rechargeable battery pack / spare battery
- Anti-tippers for the wheelchair
- Remote control
- Bracket for remote control
- Spoke cover

Use only original Alber accessories.

The e-motion is designed to yield superb performance when using with original Alber accessories. Alber is not liable for damages on the product or accidents (e.g. fires, etc.) caused by a malfunction of non-original accessories or spare parts (e.g. leakage or explosion of a battery pack). The warranty does not cover any repair required due to a malfunction of non-original accessories. However, you may commission repairs on a chargeable basis.

USA / Canada

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate the equipment.

1.6 Specifications

| | |
|------------------------|------------------------|
| Range: | 25 km per ISO 7176 - 4 |
| Max. speed: | 6 km/h |
| Drive power: | 2 x 60 W |
| Motor voltage: | 24 V |
| Operating temperature: | -25 °C - +50 °C |
| Max. load capacity: | 130 kg |

Battery pack

| | |
|----------------------------|--------------|
| Battery type: | Lithium-Ions |
| Nominal operating voltage: | 25.2 V |
| Charge temperature: | 0 °C - 40 °C |

Weight of the individual parts

| | |
|------------------|------------------------|
| Wheel: | 9.2 kg |
| Battery pack: | 1.3 kg |
| Battery charger: | 0.8 kg |
| Overall weight: | 21.0 kg |
| Range: | 25 km per ISO 7176 - 4 |

(*) The range varies depending on the terrain traversed and the prevailing driving conditions. The stated range can be achieved if driving conditions are optimal (even terrain, freshly charged batteries, ambient temperature of 20 °C, even travel, etc.).



The e-motion conforms to the requirements laid down in the European Medical Device Directive 93/42/EEC as well as the applicable sections of standard DIN EN 12184 and ISO 7176-8. The battery charger conforms to European guidelines.

We reserve the right to make alterations to the technology and design as part of ongoing further developments.

Battery charger

Please refer to the technical notes and instructions in the manual accompanying the charger.

1.7 The most important elements at a glance

(Please unfold the general drawing contained in the envelope)

Wheel

| | |
|--|----|
| LED display | 1 |
| Rubber cover of the charger socket | 2 |
| Charger socket | 3 |
| Lock of the stub axle | 4 |
| On/Off button | 5 |
| Handle area | 6 |
| Fins (rear of wheel) | 7 |
| Stub shaft | 8 |
| Push rim | 9 |
| Battery contacts (inside of wheel hub) | 10 |

Protective cover for battery contacts

| | |
|--------------------------|----|
| Cover | 18 |
| Locking pin of the cover | 19 |

Remote control (optional)

| | |
|--------------|----|
| Info button | 20 |
| Display | 21 |
| Button 2 | 22 |
| Button 1 | 23 |
| Button 0 | 24 |
| Reset button | 25 |

Battery pack

| | |
|---------------------------------------|----|
| Battery pack locking pin | 11 |
| Battery pack | 12 |
| Protective cover for battery contacts | 13 |
| Burls of plastic cover | 14 |

Battery charger

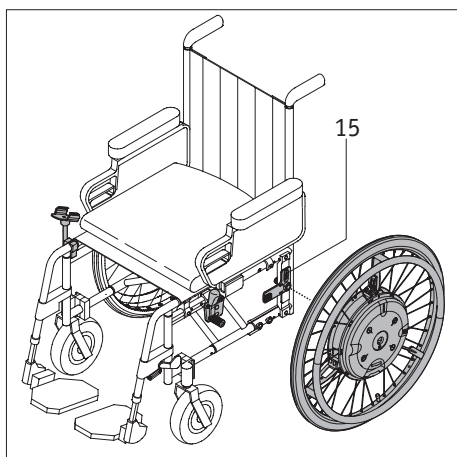
| | |
|--------------|----|
| Housing | 26 |
| Charger plug | 27 |

Wheelchair (not included in scope of delivery)

| | |
|---------------------------------------|----|
| Bracket with wheel receiver | 15 |
| Parking brake of wheelchair | 16 |
| Bracket for remote control (optional) | 17 |

Anti-tippers (optional)

| | |
|--------------------------|----|
| Quickpin | 28 |
| Receiver fork of bracket | 29 |
| Holding rod | 30 |
| Clamping piece | 31 |



2. Start-up

The e-motion wheels and, if applicable, the accessories you ordered are mounted to your wheelchair by Alber or your specialist dealer and delivered to you ready for operation. Both sides of your wheelchair are therefore equipped with new brackets [15] with wheel receivers into which the two e-motion wheels are inserted (see Chapter 2.1). The manual wheelchair wheels which you have previously used are also returned to you for possible future use.

When the e-motion is delivered to you, your specialist dealer will instruct you about the operation of the system and the accessories you may have ordered. He will also hand the operating instructions to you which contain important information on driving, in addition to the technical information.



The brackets [15] may only be mounted to the wheelchair by Alber or a specialist dealers authorized by Alber.



Regularly inspect and check the brackets [15] to verify that they are tightly and securely screwed onto the wheelchair. If these screw connections have become loose or have even unscrewed, you must have them retightened by an authorized specialist dealership. Failure to do so can cause the wheels to detach and serious bodily injury.



Alber manufactures brackets in different designs, for example, as a complete single part or made up of separate parts. For this reason, graphic representations in this operating manual may differ from the bracket mounted to your wheelchair.

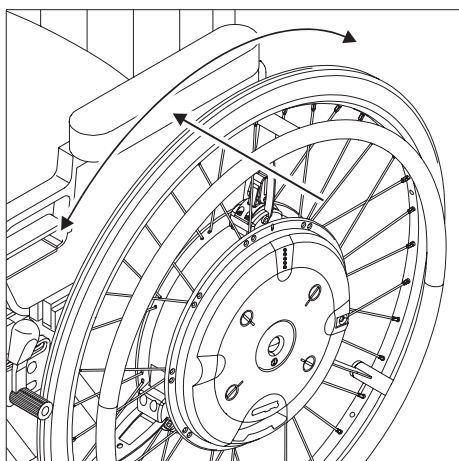
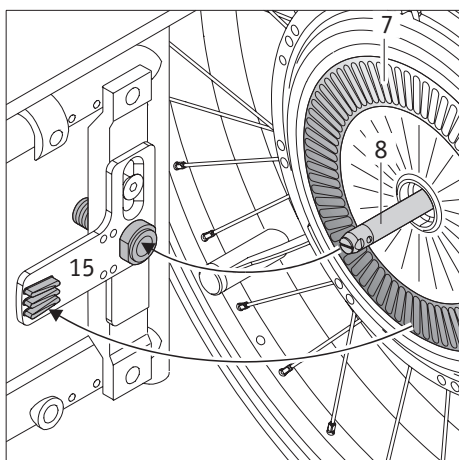
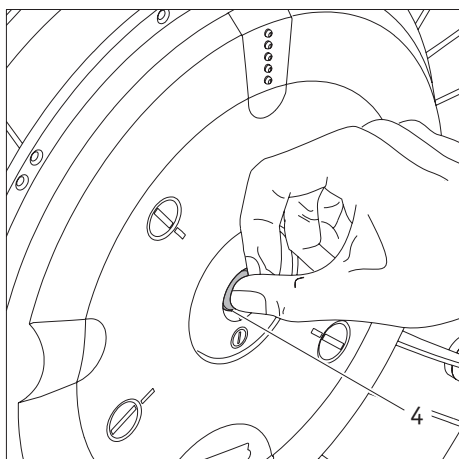


Your wheelchair brakes are adjusted to the two e-motion wheels. If the wheelchair is operated with manual wheels, the brakes may need to be readjusted to these wheels.



Speed limitation in neutral gear (without motor assistance)

When operating the e-motion wheels in neutral, a speed of 10 km/h can be reached without any problems. The electronics and the mechanics will not become damaged as a result as they are engineered for this load case. At higher speeds (e.g. travelling downhill in neutral, used of hand bikes, in particular with motor assistance or electric motor traction devices) much higher speeds can be reached for which no tests are required by the standard guidelines. The standards only stipulate that the additional drive has to be inspected 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 highest speed.



2.1 Mounting the wheels

Different driving parameters can be assigned to each e-motion wheel. It is therefore absolutely necessary to always mount the two e-motion wheels according to their identification on the left and right side of your wheelchair, respectively!

The stub axles [8] of the e-motion wheels are similar to the stub axles of your previously used manual wheelchair wheels. Therefore, you may mount the e-motion wheels to your wheelchair as you are used to.

- Unless already done, place the battery pack [12] into the wheel hub and lock it with the same (see Chapter 4.6).
- Push on the locking mechanism [4] located in the center of the wheel hub and at the same time push the stub axle [8] of the e motion wheel into the wheel receivers [15] on the wheelchair.
- You might need to turn the e-motion wheel a few millimetres around its axis to allow the fins [7] located at the rear of the wheel to engage with the torque receiver.
- Check if the e-motion wheel can be pulled out of the wheel receiver [15] without pushing the lock [4]. If this is the case, the e-motion wheel is not seated correctly in the wheel receiver [15] and must be reintroduced into the wheel receiver [15] as described above.
- Attach the second e-motion wheel on the other side of the wheelchair.
- Before using or operating, confirm that the wheels have been properly seated.

These few steps complete the mounting of the e-motion wheels on your wheelchair.



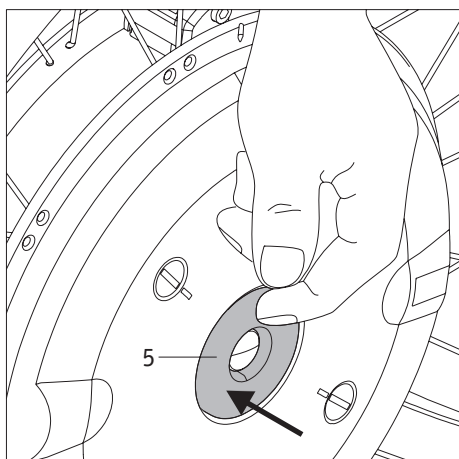
Operation or driving is only permitted with e-motion wheels that are correctly engaged and seated in the wheel receiver [15].



Check the proper function of your wheelchair brakes [16] before each drive. They must be adjusted correctly to the e-motion wheels and be able to prevent the unintentional rolling away of the wheelchair at any time. Do not use or operate the wheelchair if the brakes are not in proper working order.



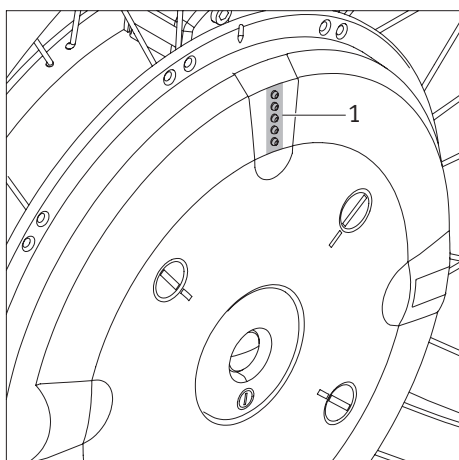
Always mount the e-motion wheels according to their identification on the left and right side of your wheelchair, respectively.



2.2 Switching on the wheels on the wheel hub

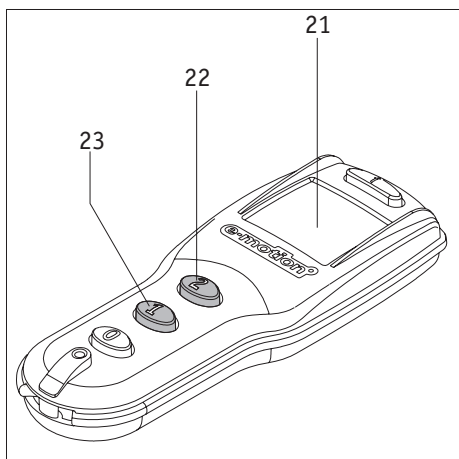
You can now switch on the system if the two e-motion wheels were correctly and securely mounted to your wheelchair as described in Chapter 2.1.

- Push the On/Off buttons [5], located in the wheel hub, for approximately one second.
- **e-motion with remote control (optional):**
Depending on the power stage used last (refer to chapter 6), an acoustic signal sounds (one signal tone for power stage 1, two signal tones for power stage 2).
- **e-motion with remote control (optional):**
A signal tone sounds.
- All five LEDs [1] of the display light up briefly and then change to the display status for the charge status of the battery pack (see Chapter 5.1).
- The wheel is operational after approx. 2-3 seconds and you can start driving. Please note the instructions in Chapters 3 and 11.



Note

If the switched on wheels are not used, they switch off automatically after a predefined period (refer to the information in Chapter 7).



2.3 Switching on the wheels with the remote control (optional)

Instead of activating the wheels via the On/Off switch [5] in the wheel hub, they can also be switched on by the optionally available remote control.

- When pushing button 1 [23], both wheels are switched on in power stage 1 and one signal tone each sounds on the wheels.
- When pushing button 2 [22], both wheels are switched on in power stage 2 and two signal tones each sounds on the wheels.

After the wheels have been switched on, the charge status of the two battery packs and the selected power stage are indicated on the display [21].

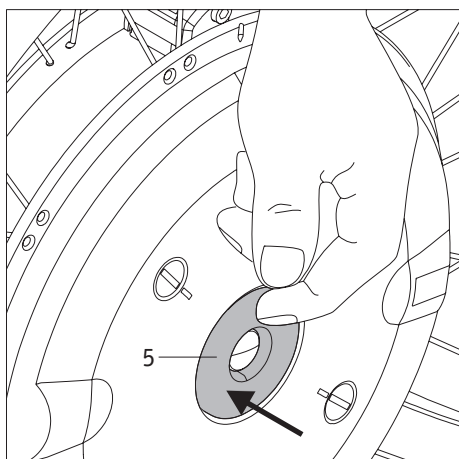
Please refer to Chapter 9 for a detailed description of this and other functions, displays and possible error messages.



A fault is present if no or more than 2 signal tones sound when switching on the wheels. Do not use or operate, and refer to Chapters 5.3 or 9.4.



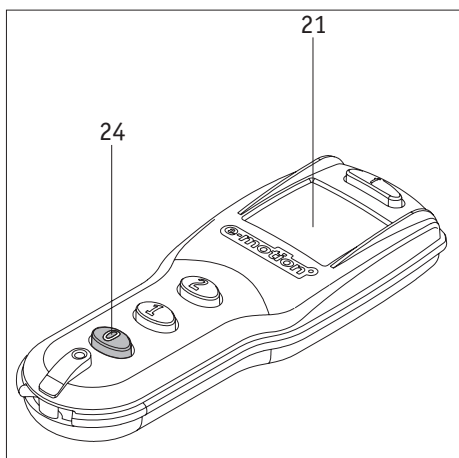
For e-motion systems without remote control, switch on the wheels one after the other and not at the same time. Activating the wheels at the same time can cause you not to hear possible warning signals (see Chapter 5.3) or allocating them to the wrong wheel.



2.4 Switching off the wheels on the wheel hub

After you are done driving, always switch off the two e-motion wheels and engage the parking brakes on the wheelchair. This will save the energy of the two battery packs and prevents a possibly inadvertent rolling away of your wheelchair.

- Push the On/Off buttons [5], located in the wheel hub, for approximately one second.
- To confirm the switch-off, an acoustic signal (1 beep) sounds on each wheel.
- The LED [1] on the wheels goes off.
- Secure your wheelchair against unintentional roll away by engaging the parking brakes of the wheelchair.



2.5 Switching off the wheels with the remote control (optional)

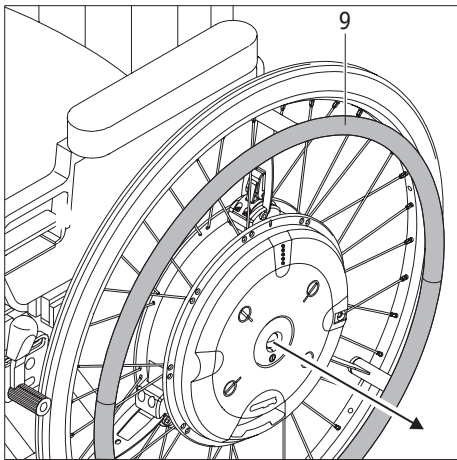
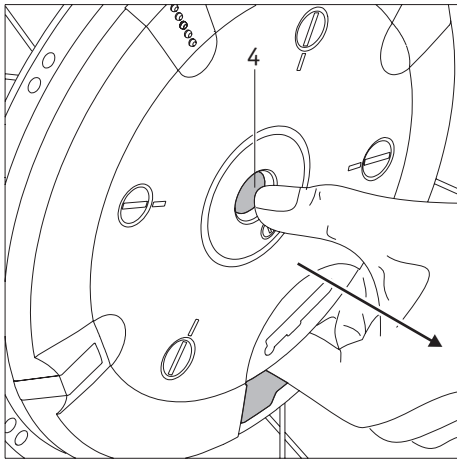
Please proceed as follows if you are switching off the wheels with the optional remote control:

- Push the „0“ [24] button; both wheels are switched off at the same time.
- To confirm the switch-off, an acoustic signal (1 beep) sounds on each wheel.
- The LED [1] on the wheels goes off.
- The display (21) goes off after approx. 5 seconds.
- Secure your wheelchair against unintentional rolled away by pulling the parking brakes of the wheelchair.

Please refer to Chapter 9 for a detailed description of this and other functions, displays and possible error messages.



The e-motion wheels are not quipped with their own built-in brakes. It is therefore absolutely necessary to properly adjust the brakes installed on your wheelchair to the e-motion wheels to prevent the wheelchair from unintentionally rolling away. Please contact your specialist dealer in this regard.



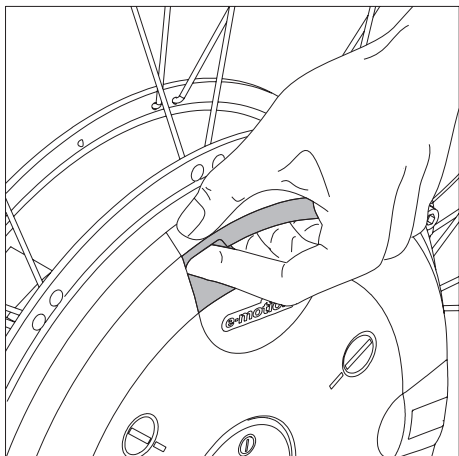
2.6 Removing the wheels

The e-motion wheels will usually remain on your wheelchair. If they need to be removed (for example to facilitate transport), then please proceed as follows:

- Switch off the e-motion wheels if not yet done (see Chapter 2.4).
- **When using Alber anti-tippers:**
Lift your wheelchair as described in Chapter 10.2 and operated the anti-tippers.
- Reach with the fingers into the opening between wheel hub and battery pack as shown in the graphic.
- Push on the locking mechanism [4] located in the center of the wheel hub and pull the e-motion wheel with care off the wheelchair.
- Once both wheels have been removed, you can return the anti-tippers to the original position as described in Chapter 10.2.
- **Without Alber anti-tippers:**
Lift the wheelchair by its push handles.
- Reach with the fingers into the opening between wheel hub and battery pack as shown in the graphic illustration.
- Push on the locking mechanism [4] located in the center of the wheel hub and pull the e-motion wheel with care off the wheelchair.



When removing an e-motion wheel, never pull on its push rims [9]. This could damage the sensors attached to them.



2.7 Transportation and storage of the wheels (as luggage in a vehicle)

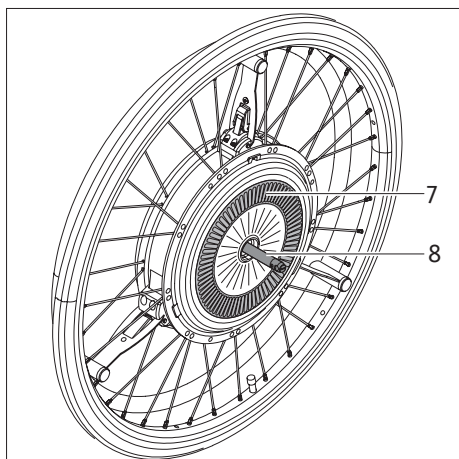
Do not lift or hold the e-motion wheels by the push rims [9] when transporting the wheels. This can damage the sensors attached to them.

Instead, reach into the opening between the battery pack and wheel hub as shown in the graphic illustration or carry the e-motion wheel by its rim. There is no risk of damaging the wheel at these points.

Pay special attention to the fins [7] and the stub axle [8] on the rear of the wheel when putting or placing down the wheel. Both parts may not be damaged.

The specifications of the respective wheelchair manufacturer regarding the securing of the complete wheelchair and/or its individual parts apply for transport.

Remove the e-motion wheels from the wheelchair and transport them individually.

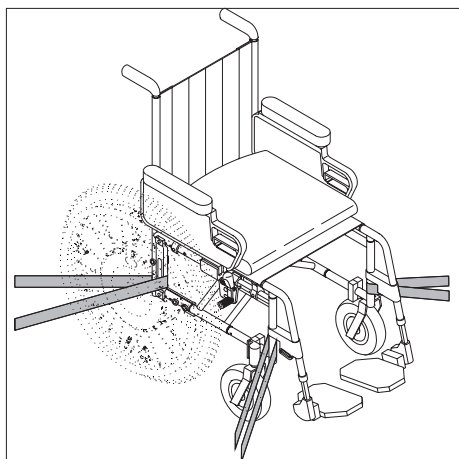
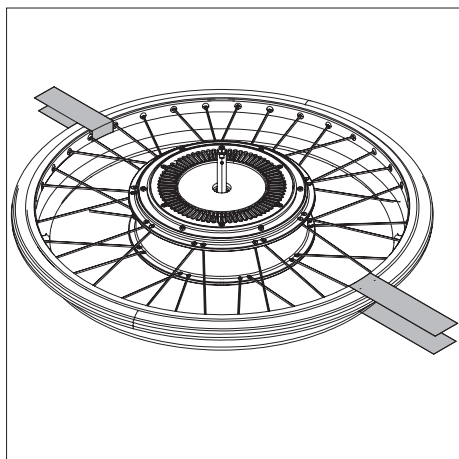


During transport, the wheels must be secured against moving or flying about in all cases, so that they cannot lead to danger for the occupants during a braking maneuver. To secure the wheels, fasten them in the vehicle with sufficiently strong fabric straps as shown in the graphic illustration.

If there are national regulations regarding the securing of wheelchairs and wheels in your country, these must be observed.

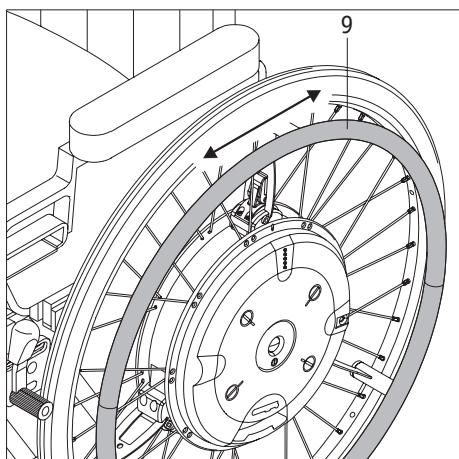
The national legal regulations apply in all cases and observe all traffic laws.

Alber GmbH and its representatives reject any liability for accidents of any kind and their consequences, which arise as a result of the non-observance of these instructions.



If you aim to transport the wheelchair as a whole without removing the wheels you have to protect the wheelchair according to the guidelines of the wheelchair manufacturer. The drawing is only an example how you can do it.

If you intend to use the wheelchair **as a seat in vehicles** please **observe** strictly the requirements and the instructions therefore in **chapter 11.2**.



3. General safety instructions for driving with the e-motion

The operation of the e-motion wheels is similar to the manual wheels you have used so far. This means that you can move your wheelchair with the push rims [9] as usual. The power assist function of the e-motion will cause the wheelchair to react or function more quickly and at a greater speed. Do not engage the push rims abruptly, suddenly or too forcefully to avoid unintended movements. Always engage the push rims in a smooth, uniform and gentle manner. (See Chapter 6).

After being trained on the e-motion, practice driving until you are comfortable that you can properly and safely utilize the power assist function. This will help you to thoroughly familiarize yourself with the drive and its features.

- Adjust the parking brakes [16] of your wheelchair to the e-motion wheels to prevent unintentional rolling away. If this has not been done, contact the specialty dealership authorized by Alber and have the brakes readjusted.

e-motion with remote control (optional):

- First select power stage 1 for the initial driving attempts. Switch only to power stage 2 after you have thoroughly familiarized yourself with the power assistance of the drive.

e-motion without remote control:

- After you have been properly trained on the e-motion, begin driving slowly, on level surfaces and in locations free of obstacles.

Important information

- Learn and familiarize yourself with the e-motion's power assist function characteristics in areas without obstacles.
- Before driving the e-motion on slopes or hills, master handling and operating the device safely on flat terrain.
- Always adjust your speed to the surroundings and surface to safely circumvent obstacles that may suddenly occur or to stop your wheelchair timely and safely.
- Always drive up slopes with full battery packs.
Although the wheels continue to run when the battery packs are empty, the power assistance for the rolling motion and especially the braking maneuver is no longer available!
- Special care and caution must be exercised when driving down slopes of any kind. Adjust your speed and braking as needed to maintain safe control.
When descending slopes with fully charged battery packs and at too high a speed, a forced shut-down of the e-motion due to overvoltage can occur. Although the wheels continue to run, the power assistance for the braking process is no longer available!
For this reason, drive down slopes only at a low speed to avoid suddenly occurring obstacles or to bring the wheelchair to a stop.
- Observe the information, safety and hazard notes of your wheelchair manufacturer. They apply also for driving with the e-motion.



Drive slowly on downhill slopes with fully charged battery packs!

The system may shut down automatically at fully charged battery packs and at high speed. Reduce your speed for this reason to maintain safe control.



Overcome obstacles (e.g. curbs) only by driving backward, if possible. The maximum permitted height of the obstacle is 50 mm.

Attention! When driving over obstacles backward, the proper function of the Alber anti-tippers is not guaranteed! Therefore, drive slowly and carefully in reverse until the wheels of your e-motion touch the obstacle. Then, carefully drive over the obstacle. The assistance of an accompanying person is strongly recommended.



Observe the safety and hazard notes in Chapter 11!

4. Battery pack

4.1 Safety instructions on charging the battery pack

The battery packs [12] remain in the wheel hubs of the e-motion wheels during use but must be removed in the event of air transport, wheel storage, servicing or extended periods of non-use (longer than a week).

The charging process takes place directly on the wheels with the batteries inserted. In general, both battery packs should always be charged at the same time, which is why the battery charger has two charging cables.

Read and follow all instructions and warning information included with the charger before starting with the charging process and pay attention to the following warning notes. Failure to do so may damage the unit or cause personal injury.

Wheelchair

Switch off both wheels before beginning with the charge process and secure the wheelchair with its parking brakes against rolling away unintentionally.

Battery charger

- Only use the supplied Alber charger to charge the e-motion battery pack. This switches off automatically as soon as the battery pack is charged up. For this reason, overloading is not possible.
- Do not charge any other battery packs with the charger except those delivered.
- When the e-motion wheels are not used for some time (more than 1 day), the charger must first be disconnected from the line supply socket and then from the battery pack.
- Never use a charger not supplied by Alber.
- Never subject the charger to humidity (water, rain water, snow) during the charge process.
- Caution with condensation. If the charging device is brought from a cold room into a warm room, condensation can form. Wait using the charger in this case until the condensate has evaporated. This may take several hours.
- Never carry out the charging process in rooms where humidity may settle on the charger.
- Never carry the charger on the power cable or the charger cables.
- Never pull on the power cable to remove the charger from the socket.
- Route the power cable and the attached two charger cables to prevent persons from stepping on them or tripping over them and to keep them from being exposed to damaging impacts or stresses.
- Do not operate the charger if the power cable, one or both charger cables or the plugs attached to them are damaged. Damaged parts must be replaced without delay by the specialist dealership authorized by Alber.
- Never use or dismantle the charger if it has incurred a hard blow, was dropped or damaged otherwise. Bring the damaged charger for repair to a specialist dealer authorized by Alber.
- The charger is not to be used by small children.
- The charger may only be operated at 100 V - 240 V AC.
- Do not disassemble or modify the charger.
- Do not cover the charger during the charging process and do not place any objects on top of the device.
- Place the charger securely in a vertical position on a level surface.
- Do not expose the cable and the plug to any pressure. Excessive stretching or bending the cable, pinching the cable between a wall and a window frame or placing heavy objects on the cable or the plug may cause electrical shock or fire.
- Never shorten the two poles with metallic objects.
- Make sure that the plug is firmly plugged into the socket.
- Do not touch the plug with wet hands.
- Do not use the plug of the charger and/or the plug of the power cable if they are wet or soiled. Clean them with a dry cloth before plugging them into the socket.
- After the charge procedure is completed, first pull the plug of the charger from the socket and then the charger plug from the e motion wheels.
- Do not plug the charger plug into the charge socket while the battery has been removed.

Battery pack

- Only the battery packs supplied by Alber are to be used for the operation of the e-motion wheels. Other battery might burst and cause injuries or property damages.
- Never charge the batteries in the presence or vicinity of flammable liquids or gasses.
- Keep the battery pack away from fire.
- Never subject the wheels with the battery packs in them to humidity (water, rain water, snow) during the charge process.
- In the (unlikely) event of overheating or fire of the battery pack it must not come into contact with water or any other liquids at any rate. The battery manufacturers recommend sand as the only useful means to extinguish the fire.
- Never carry out the charging process in rooms where humidity may settle on the wheels with the battery packs in them.
- Never charge the battery packs at temperatures below 0 °C or over 40 °C.
- When attempting to charge the batteries outside of this temperature range, the automatic mechanism of the e-motion wheel cuts off the charge process automatically.
- Your e-motion uses power each time it is used. Never run the battery pack completely empty since this may damage it over time.
- Only use the Alber charger supplied with the e-motion to charge the battery pack. This switches off automatically as soon as the battery pack is charged up. For this reason, overloading is not possible.
- When the e motion wheels are not used for some time (more than 1 day), the charger must first be disconnected from the line supply socket and then from the battery pack.
- Use the battery packs only for the purposes outlined in these operating instructions.
- Do not disassemble or modify the battery pack.
- Never shorten the poles of the battery pack with metallic objects.
- Never shorten the poles with metallic objects.
- Do not submerge the battery pack in water. This could cause irreparable damages.
- Attach the protective cover for the battery contacts [13] as soon as you have removed it from the wheel.
- The service life of a battery pack also depends on its storage location. Therefore do not leave the battery pack at hot locations for longer periods (regardless whether it is installed in the wheel hub or has been removed from it). Especially the trunks/boots of passenger cars parked in the sun should be used only for transport but not for general storage.



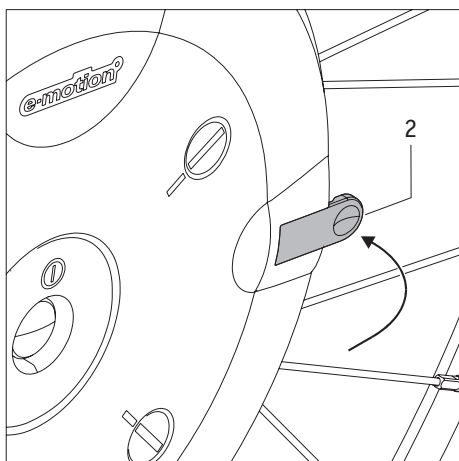
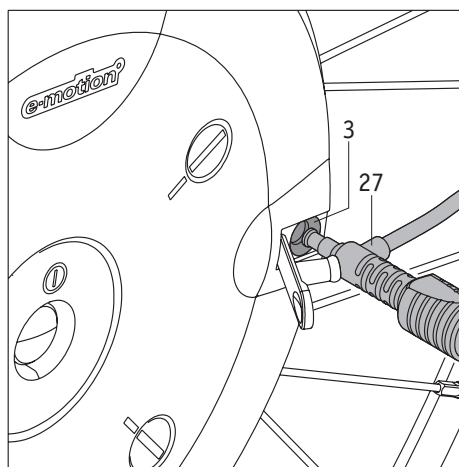
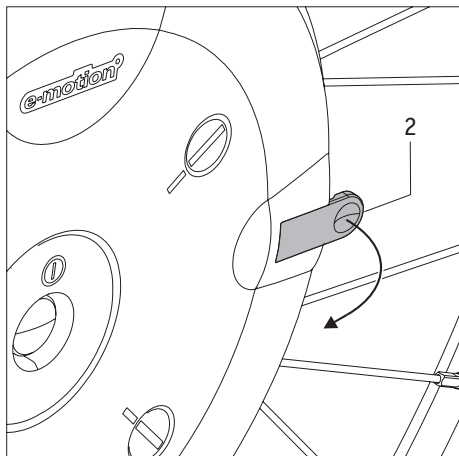
During storage of the e-motion wheels, the battery packs need to be removed and stored separately (see chapter 4.4). They also need to be recharged at monthly intervals.



Prevent total discharge by charging the battery packs after each use.



Exhausted battery packs must not be charged under any circumstances!
Usually the e-motion electronics prevents exhausted battery packs being charged, which means the battery cannot be charged (see also fault indications in chapters 5.3 and 9.4). This protection mechanism can, however, be bypassed by multiple charging attempts. This must not be attempted under any circumstances.
If the electronics prevent charging, contact your specialist dealer about a repair.



4.2 Charging the battery pack

The orientation of the sensors is checked during the charge process; for this reason, neither compression nor tensile forces may be exerted on the push rim during this time. Make sure during each charge process that both push rims are free from any load or weight. If the push rims were accidentally exposed to any forces during the charge process and the sensor orientation was therefore misadjusted, please proceed as follows:

- Do not expose the push rim to any loads, that is, neither to tensile or compression forces.
- Carry out the charge process once more for approx. 10 minutes; this will readjust the sensors.
- Complete the charge process.

The correct charging process on the e-motion wheels is described below.

- Open the rubber cover [2] attached on the wheel hub above the charge socket [3].
- Push the charger plug [27] into the charger socket [3].
- Push the power cable of the charger only now into an outlet.
- Depending on the remaining capacity in the batteries, one or several LEDs on the wheel come on (see also Chapter 5.1).
- All five LEDs come on if the battery pack is fully charged.
- Pull the power plug of the charger from the socket.
- Pull the charger plug [27] only now from the charger socket [3].
- Close the charger socket [3] again with the rubber cover [2].



When the e-motion wheels are not used for some time (more than 1 day), the charger must first be disconnected from the dine supply socket and then from the battery pack.

Always check the charge status of the battery packs each time you prepare to drive. They should be fully charged before beginning to drive.

Please follow also the notes and instructions in the manual accompanying the charger.



The e-motion wheel shuts off automatically if the charger plug [27] is pulled or removed from the charger socket [3].



If a fault occurs during the charging process, all 5 LEDs flash at the same time. Proceed accordingly.

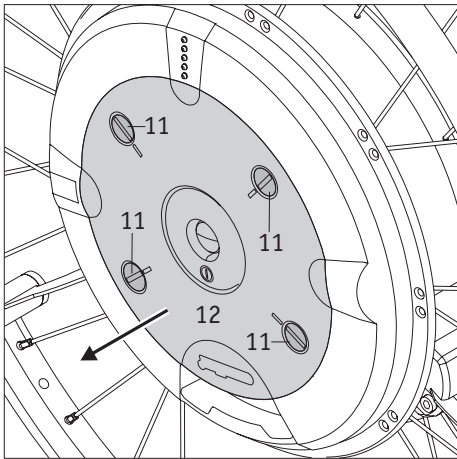


If the e-motion wheels remain attached to the wheelchair during charging, switch off both wheels before beginning with the charge process and secure the wheelchair with its parking brakes against rolling away unintentionally.

If you disregard this and the wheels roll away during the charging process, an acoustic warning signal sounds (several beeps) to alert you to this critical safety condition.



Remove the rubber covers [2] only to charge the battery pack. Attach the rubber covers [2] again to the wheel hub after the charging process is completed.



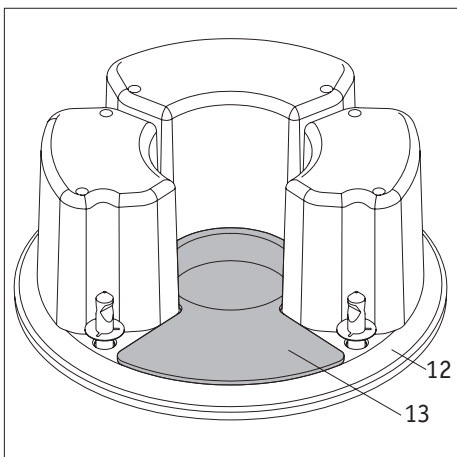
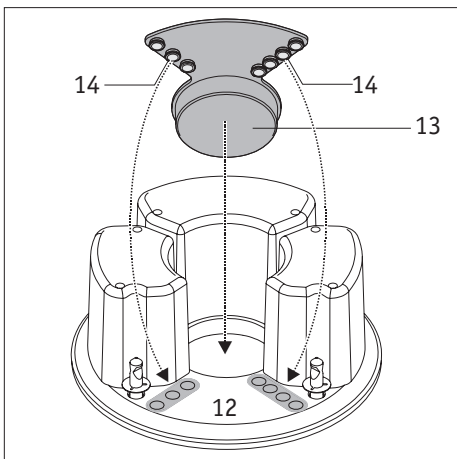
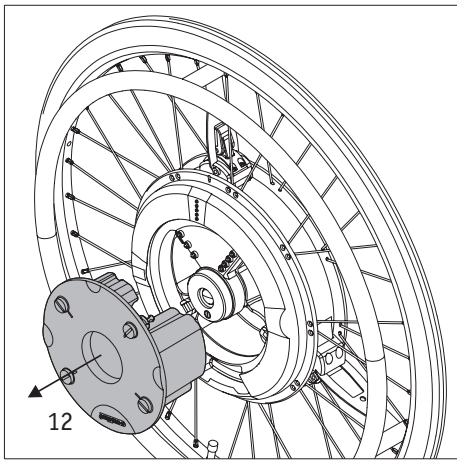
4.3 Removal and protection of the battery pack

The battery packs [12] remain in the wheel hubs of the e-motion wheels during use but must be removed in the event of air transport, wheel storage, servicing or extended periods of non-use (longer than a week). If the battery packs are removed, please proceed as follows:

- Loosen the 4 locking pins [11] using a coin.
- After loosening the last locking pin, the battery pack [12] jumps slightly out of the wheel hub.
- Remove the battery pack [12] from the wheel hub.

On the bottom of the battery pack:

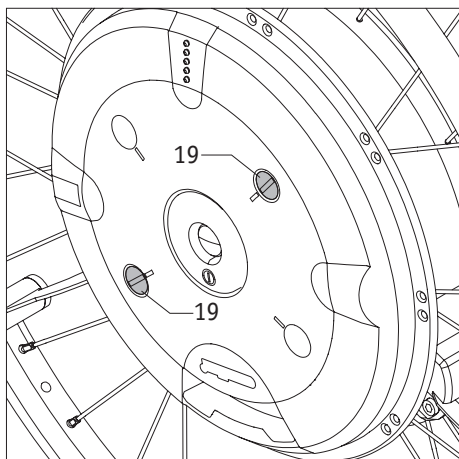
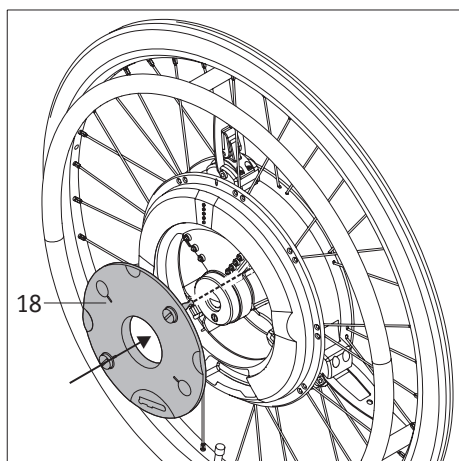
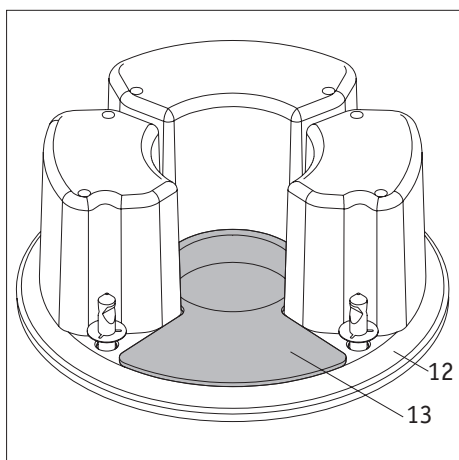
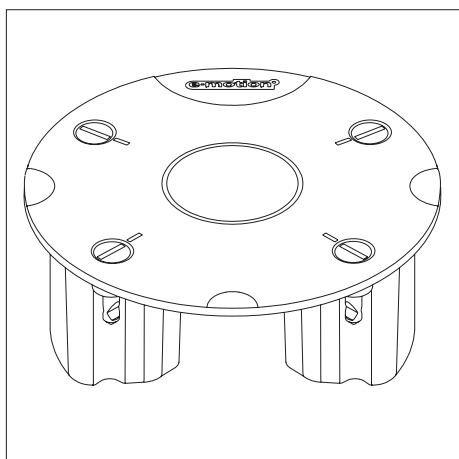
- Immediately after removing the battery pack, place the round side of the protective cover [13] in the center of the battery pack housing [12] as shown in the graphic illustration and firmly push it in place.
- Push the burls [14] of the protective cover into the openings on the bottom of the battery pack housing and push them in place.
- The protective cover [13] and its burls [14] must be connected firmly enough with the battery pack housing so that they cannot become detached from it on their own.



Protect the battery pack immediately after removing it from the e-motion wheel to prevent damaging it. Neither humidity nor foreign objects (e.g. metal shavings, small nails or other conducting metals) may enter the openings on the battery pack.



If you are travelling by plane you need to remove the battery pack from the e-motion wheels. Based on current knowledge: The wheels are transported in the cargo compartment of the plane, the two battery packs are to be carried as hand luggage in the passenger cabin. However, make sure to contact the respective airline carrier on the applicable regulations in this matter before commencing your journey and also on the applicable legal regulations in your country of origin or your vacation destination in regard to the air transport of batteries and rechargeable lithium-ion batteries.



4.4 Storage and transport of the battery packs removed from the wheel

Never subject the battery pack to humidity (water, rain water, snow, etc.)!

Information regarding storage:

- The battery pack removed from the wheel should always be stored upright as shown in the graphic illustration and inaccessible to children.
- Fully charge the battery pack before storage and recharge it at monthly intervals.
- Store the battery pack at a cool and dry location where it is protected from damage and unauthorized access.

Information regarding transport:

- The battery pack should be transported in the original package (therefore keep the carton).
- The battery pack may remain in the wheel with all types of transport except air transport. This must be clarified with the respective airline when transporting the battery pack by plane (see note in Chapter 4.3).
- Contact your specialist dealer or the Alber Service Center for clarification prior to shipping or transporting a damaged battery pack.

Instructions in case of damages or defect of the battery pack

If the battery pack is damaged or defective, it must be set apart and inspected. Please contact your specialist dealer and discuss the further procedure regarding return shipment and repair with him.

A defective/damaged battery pack must not to be used or opened to prevent damage or personal injury.

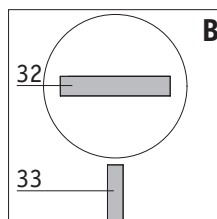
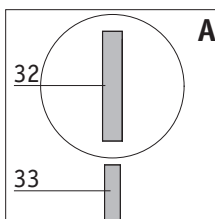


The battery pack [12] removed from the wheel must only be stored or transported with the protective cover [13] in place. Transport or storage without the protective cover in place [13] is not permitted to prevent damage or personal injury.

4.5 Protection of the wheel with the battery pack removed

After you have removed the battery pack and secured it as described in Chapter 4.3, you must next protect the wheel against dirt and damage as follows:

- Remove the cover [18] and push it slightly into the wheel hub in place of the battery pack as shown in the graphic illustration.
- Insert a coin into the slot [32] of one of the two locking pins [19].
- Push the locking pin [19] inside and rotate it by 90 degrees.
- Repeat the procedure with the second locking pin [19].
- The cover [18] has only been correctly inserted into the wheel hub if it does not protrude beyond it at any point.
- The cover [18] is only correctly secured in the wheel hub if its marks [33] and the slots [32] of the locking pins [19] are properly aligned (refer to the following graphic illustration).

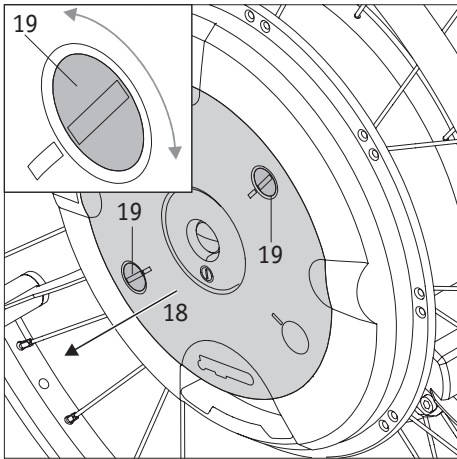


**A=Locking pin locked
B=Locking pin released**



Protect the wheel immediately after removing the battery pack. Neither humidity nor foreign objects (e.g. metal shavings, small nails or other conducting metals) may enter the wheel hub.

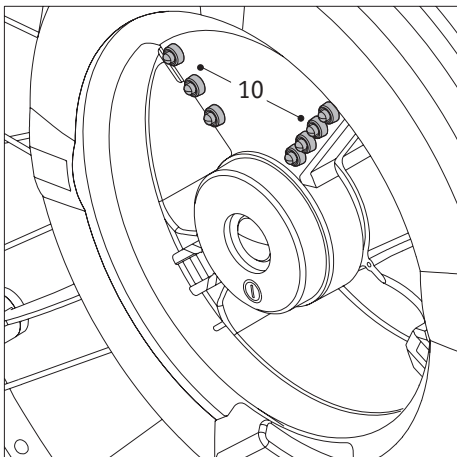
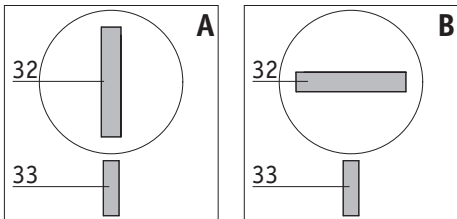
4.6 Inserting the battery pack

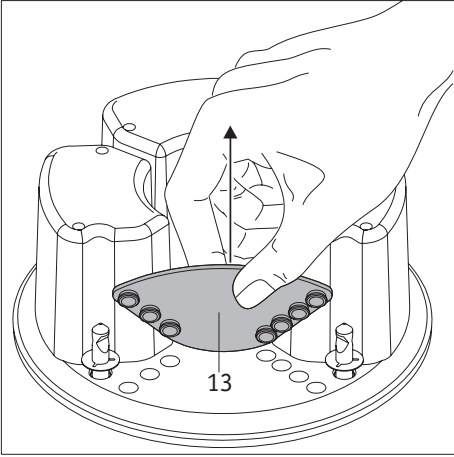


Carry out the following steps to insert a battery pack again in the wheel hub:

Wheel

- Insert a coin into the slot [32] of one of the two locking pins [19].
- Push the locking pin [19] slightly toward the inside and turn it by approx. 90 degrees until the slot [32] and the marks [33] of the cover [18] are properly aligned (refer to the graphic illustration). This releases the locking pin and it jumps out slightly. The graphical illustration explains:
A= locking pin locked
B= locking pin released
- Repeat the procedure with the second locking pin.
- Remove the cover [18] from the wheel hub and store it for future transports of the wheel.
- Check if moisture is present inside the wheel hub. Dry wet spots immediately with a clean, dry cloth.
- Check if dirt or foreign objects (especially metal shavings, small nails or other conducting metals) are present inside the wheel hub and remove them.
- Dry and clean especially the battery contacts [10] inside the wheel hub if necessary.

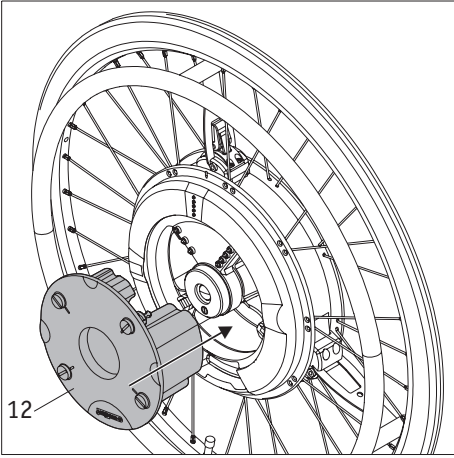




Battery pack

- Pull the protective cover [13] from the bottom of the battery pack. Keep the protective cover [13] for further transports.
- Take the battery pack [12] and push it into the wheel hub.
- Push the four locking pins [11] one after the other slightly to the inside and rotate them by 90 degrees.
- The battery pack [12] has only been correctly inserted into the wheel hub if it does not protrude beyond it at any point.
- The cover [12] is only correctly secured in the wheel hub if its marks [33] and the slots [32] of the locking pins [11] are properly aligned (refer to the graphic illustration).

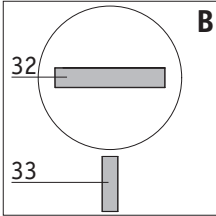
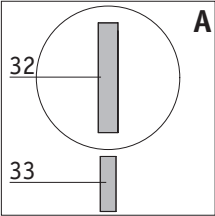
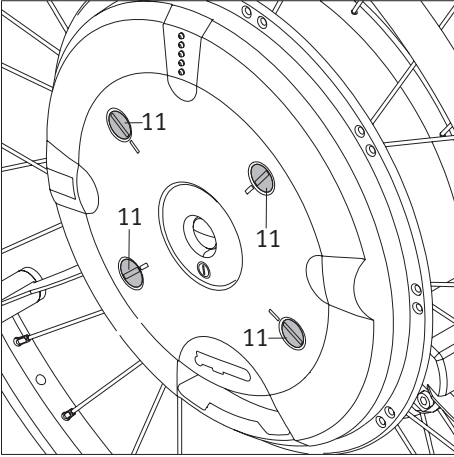
The graphical illustration explains:
 A= locking pin locked
 B= locking pin released

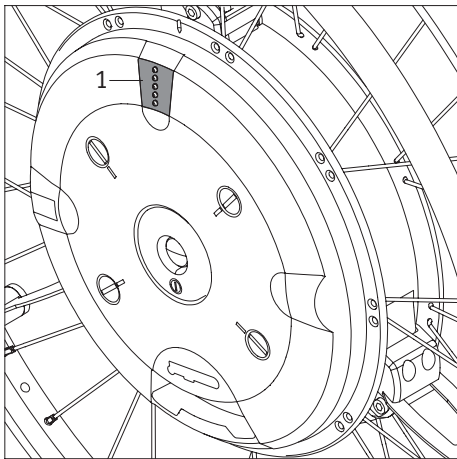


Your e-motion wheel is now completely ready for the next ride.



Insert the battery pack only into the wheel hub if both are clean and dry. Both parts must never be joined in case of dirt and moisture. Observe the notes in on cleaning in Chapter 12.1.





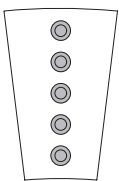
5. Indicators and error messages on the wheel

5.1 Charge status of the battery pack

The charge status of the two e-motion battery packs is indicated by the LEDs [1] attached to the wheel. Please note that because of different drive moments or possibly differently adjusted wheels the current consumption may also vary (see Chapter 6).

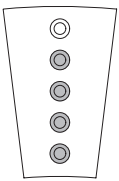
Each time when switching on a wheel and after each operation of the push rim, one or several LEDs come on (refer to the following table) and indicate the respective charge status of the battery pack. The LEDs go off after approx. 10 seconds and the top green LED (signal for the operational readiness of the wheel) flashes approx. every 2 seconds.

They mean:

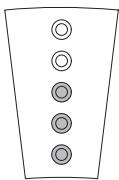


5 LEDs come on – Battery pack is charged 100 %.

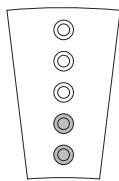
Avoid driving down slopes at high speeds because a forced shut-down of the wheel may occur due to the current return in the wheels and the risk of overvoltage in the battery pack.



4 LEDs come on – Battery pack is charged 80 %.

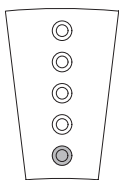


3 LEDs come on – Battery pack is charged 60 %.



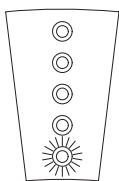
2 LEDs come on – Battery pack is charged 40 %.

We recommend not driving too far without charging the batteries first.



1 LED comes on – Battery pack is charged 20 %.

Charge the batteries before starting a ride.

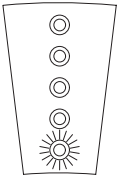


1 LED (red) flashes – Battery pack is charged 10 %.

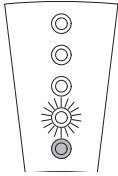
Charge the batteries before starting a ride.

5.2 Display during charging of battery pack

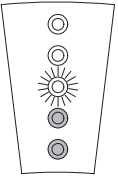
1 LED (red) flashes – Battery pack is charged less than 20 %.
LED (red) flashes



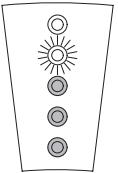
1 LED flashes, 1 LED come on – Battery pack is charged between 20 % and 40 %.



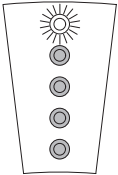
1 LED flashes, 2 LEDs come on – Battery pack is charged between 40 % and 60 %.



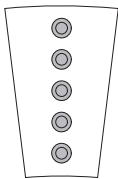
1 LED flashes, 3 LEDs come on – Battery pack is charged between 60 % and 80 %.



1 LED flashes, 4 LEDs come on – Battery pack is charged between 80 % and 100 %.



5 LEDs come on – Battery pack is fully charged.



The e-motion wheel shuts off automatically if the charger plug [27] is pulled from the charger socket [3].



If a fault occurs during the charging process, all LEDs flash slowly and an acoustic warning tone sounds (refer to Chapter 5.3).



Exhausted battery packs must not be charged under any circumstances!

Usually the e-motion electronics prevents exhausted battery packs being charged, which means the battery cannot be charged (see also fault indications in chapters 5.3 and 9.4). This protection mechanism can, however, be bypassed by multiple charging attempts. This must not be attempted under any circumstances.

If the electronics prevent charging, contact your specialist dealer about a repair.

5.3 Acoustic error messages

The following table describes the errors occurring most frequently and are mainly due to faulty handling of the e-motion wheel. They mean:

- • Short signal tone, duration approx. 0.2 seconds
- Long signal tone, duration approx. 0.8 seconds

| Acoustic signal on the wheel | Repetition Acoustic signal | Error description | What to do |
|------------------------------|---|--|--|
| • • | every 8 seconds | Overvoltage in the battery pack; a forced shut-down is immediately pending. | The error occurs especially when driving down slopes with fully charged battery pack. Drive at a slower speed. |
| • • | every 10 seconds | Overvoltage of the battery pack, the drive was shut down by force. | The error occurs especially when driving down slopes with fully charged battery pack. Drive at a slower speed. |
| — • | every 10 seconds | The charging process was terminated because the ambient temperature is below 0 °C or above 40 °C. | Charge the battery packs only at temperatures above 0 °C and below 40 °C. |
| • • • | every 5 minutes | Voltage of the battery pack < 20 % remaining capacity | Charge the battery pack as soon as possible. |
| • • • | every 60 seconds | Undervoltage of the battery pack (< 10 % remaining capacity), a forced shut-down is immediately pending. | Charge the battery pack immediately. |
| • • • | every 10 seconds | Undervoltage of the battery pack (< 5 % remaining capacity), a forced shut-down is immediately pending. | Complete a ride down a slope. Charge the battery pack immediately. |
| — • • | every 5 seconds | The charger plug is inserted in the charger socket but no charge current is flowing. | Check the operational readiness of the charger. Possible defect on the charger or wheel; repair is then required. |
| — — — | Each time when switching on the e-motion 1 time | The battery pack has less than 60 % capacity of a new battery. | The achievable range is significantly reduced. Replace the battery pack against a new one. |
| — • • • | every 10 seconds | The battery pack was charged longer than 12 hours but is not completely charged. | The charger is defective if both battery packs are charged at the same time and the error messages is indicated for both battery packs. If both battery packs are charged at the same time and the error message is indicated for only one battery pack, this battery pack is defective. Repair is required in both cases. |
| • • • • | every 10 seconds | The voltage in the battery pack is no longer sufficient for operation, the drive was shut down by force. | Charge the battery pack immediately. |

Acoustic error messages (continued)

| Acoustic signal on the wheel | Repetition Acoustic signal | Error description | What to do |
|------------------------------|----------------------------|---|--|
| — ● ● ● ● | every 3 seconds | The charger plug is inserted in the charger socket; the wheel turns at the same time. | Pull the charger plug from the charger socket or stop the movement of the wheel. |
| — ● ● ● ● | every 10 seconds | The charge process was terminated because one battery pack is defective. | The battery pack is defective and must be sent to Alber for repair. Contact your specialist dealer in this regard. |
| — — — ● ● | every 10 seconds | Overtemperature of the motor. | Switch off the system and allow it to cool down; observe the ambient temperature. |
| — — — — ● | every 10 seconds | The signal coming from the push rim is applied longer than one wheel rotation. | A foreign object may have become wedged in the push rim. Remove this foreign object. Defect in the wheel, repair required. |



A major fault of the system is present if error messages other than those shown in the list are signaled. The e-motion wheel is then no longer operational and must be sent to the Alber factory for inspection. Do not operate or use the e-motion wheel if a fault exists to prevent damage or personal injury.



Contact your dealer if you have a problem with the system, a tyre damage or an error message

6. Power stages and stored parameters

6.1 Power stages

Individual driving parameters can be assigned individually to each e-motion wheel to possibly adapt a wheel to the particular physical limitations or restrictions of the wheelchair driver. With regards to this topic, please contact your specialist dealer.

The standard version of the e-motion is equipped with only one power stage. Both power stages can only be utilized with a remote control which is offered as optional accessory and can be retrofitted at any time.

Power stage 1 (factory setting)

A beep sounds when switching on the wheel, the motor output is 50 % of the maximum possible output of the e-motion.

This power stage is primarily recommended for driving indoors. This results in low current consumption, the battery packs are preserved and achieve a greater range per battery charge than in power stage 2.

Power stage 2 (factory settings, only in connection with optional remote control)

Two beeps sound when switching on the wheel, the motor output is 80 % of the maximum possible output of the e-motion.

This power stage is primarily recommended for driving outdoors. The current consumption is higher than in power stage 1 resulting in a correspondingly lower range per battery charge.

6.2 Power assistance

To start moving an e-motion wheel, gently, smoothly and uniformly move the push rim mounted forward (to drive forward) or backward (to drive backward). This movement requires a certain amount of force in the hands of the wheelchair driver. Do not move push rim suddenly, abruptly or in a jerky manner. After the e-motion starts moving, only a small, gentle push of the push rim of the e-motion wheel is sufficient to keep the wheel in motion.

Programming is done by the specialist dealer authorized by Alber who will also be glad to educate you on additional options of the individual adjustment of the e-motion.

6.3 Rollback delay (only with e-motion wheels with remote control)

If your e-motion is equipped with remote control, it will have a rollback delay that can be activated. This helps the wheelchair driver to drive up slopes and ramps by preventing the wheelchair from rolling back while repositioning the hands after a push motion.

Driving up slopes and down inclines with activated rollback delay.

You can drive up and down slopes as usual whereby the motors move the e-motion wheels according to the power stage selected and the preprogrammed power assistance. The automatic rollback delay kicks in when the wheel electronics senses the wheel rolling back against the original direction of travel. This means that the wheels are slowed down by braking for 5 seconds thus being prevented from rolling back. This is followed by two short signal tones and the brake function is gradually cancelled. The wheel run free after 5 seconds. Safe travel on a slope (with activated hill-holder) depends on the total weight (=weight of the person in the wheelchair, the wheelchair, both e-motion wheels and any other accessories), as well as the charge level of the battery. The following table shows which slopes can be travelled safely with only a minimally charged battery.

| Total weight | Slope that is safe to travel |
|--------------|------------------------------|
| 115 kg | 14% |
| 140 kg | 11,50% |
| 170 kg | 9% |

Activating / deactivating the rollback delay

To activate the rollback delay, push the following buttons on the remote control:

- button 1 [23] (for activation in power stage 1), or
- button 2 [22] (for activation in power stage 2).

Push the buttons longer than 3 seconds. Activation is confirmed with a long signal tone.

If you want to switch off the rollback delay, push (depending on the selected power stage) button 1 or 2 again longer than 3 seconds.

Deactivation is confirmed with a long signal sound.

Alternatively, you can also switch off the e-motion wheels. The rollback delay is deactivated if the e-motion is switched off and on again.

Safety instructions

- In case of especially steep slopes and/or very heavy wheelchair drivers, the rollback delay might not be able to prevent a slow rolling back of the wheelchair.
- The rollback delay is not a parking brake but only delays the wheelchair from rolling back for only a few seconds. Therefore, secure your wheelchair with the parking brakes to stop on a slope.
- Use the rollback delay only with sufficient battery capacity (if at least 2 LEDs are still on)!
- The rollback delay must be reactivated each time after the e-motion wheels have been switched off
- Failure to follow these instructions can cause damage or personal injury.

7. Automatic self switch-off

To save energy, time periods have been assigned to the e-motion wheels after which they are switch off automatically.

7.1 Automatic wheel self switch-off

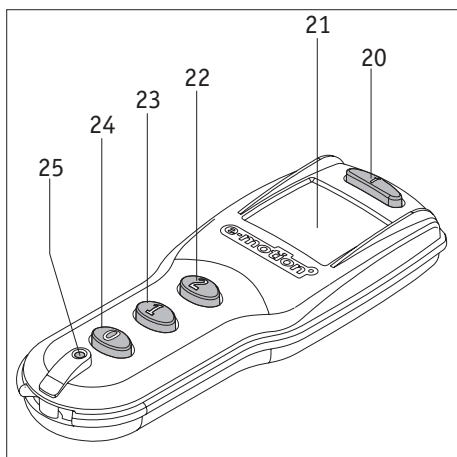
The value preset at the factory for the automatic self switch off is 30 minutes.

This value can be changed with the optional remote control. With regards to this topic, please contact your specialist dealer.

8. Fuse replacement

As any electric or electronic device, your e-motion is equipped with fuse protection. The fuse responds in case of a defect and thereby protects the electronic components from lasting and expensive damages.

The fuse of the e-motion wheel is located in the electronic system inside the wheel hub. A possibly required fuse replacement, together with a complete diagnosis of the entire electronic system may only be carried out by the authorized specialist dealer.

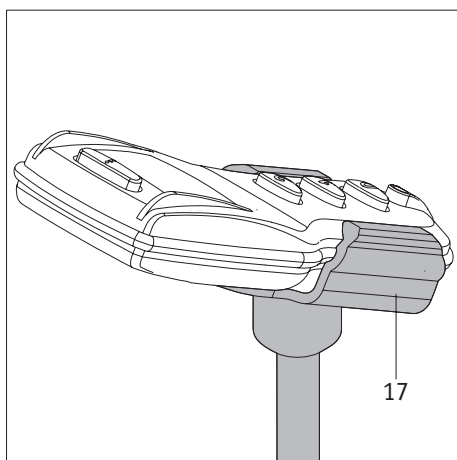


9. Remote control (optional)

9.1 Operating controls

They mean:

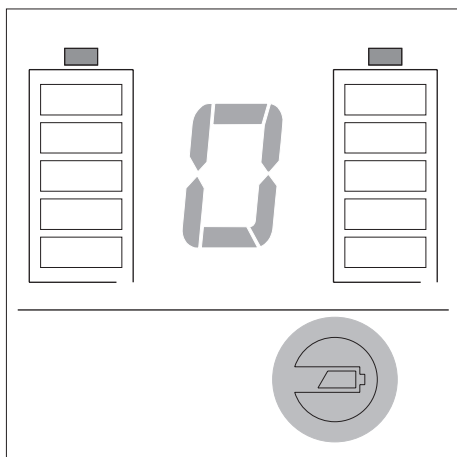
- Information button [20] to retrieve the current operating status (with the wheels switched on) as well as activate or deactivate the button lock.
- Display [21] for the optical indication.
- Button 2 [22] to simultaneously switch on both e-motion wheels in power stage 2 as well activate or deactivate the rollback lock (see chapter 6.3).
- Button 1 [23] to simultaneously switch on both e-motion wheels in power stage 1 as well activate or deactivate the rollback lock (see chapter 6.3).
- Button 0 [24] to simultaneously switch off both e-motion wheels.
- RESET button [25] to program the wheels.
- **Never push this button since the parameters stored in the software of the wheel may otherwise change requiring them to be reset by the specialist dealer.**



An optional bracket [17] is available to store the remote control on the wheelchair.

Activation / deactivation of the button lock

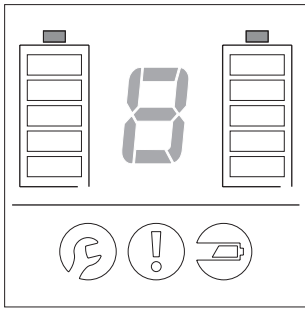
To prevent accidental activation of functions, the buttons of the remote control can be locked. For this purpose, press the information button [20] two times in quick succession. The lock of the keypad will be shown in the display [21] as „L“ (alternating with the displays of other functions already activated and an error display, if applicable). The button lock remains active until it is canceled again. For this purpose, press the information button [20] again two times in quick succession.



Based on an average daily use of the remote control, the life of the battery already inserted at the factory is roughly 5 years.

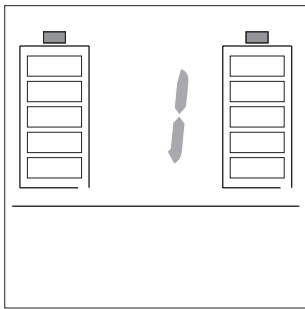
If the battery replacement becomes necessary, the battery symbol lights up at the lower right part of the display during all display situations.

The battery may only be replaced by the specialist dealer authorized by Alber.



9.2 Function display

The remote control is activated after pushing any of the operating controls introduced in Chapter 9.1. All display elements light up hereby for approx. 1 second (refer to the adjacent graphic illustration).

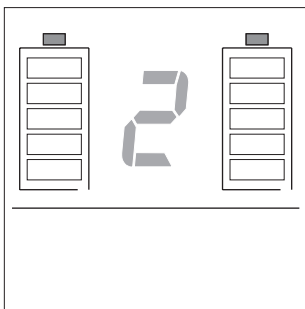


Push the button [23] on the remote control to simultaneously switch on both e-motion wheels in power stage 1.

Power stage 1 and the charge status of both battery packs is indicated in the display.

A beep sounds at the e-motion wheels. The LEDs [1] on the wheel hub also signal the charge status of the respective battery pack.

If you press the button [23] longer than 3 seconds, you will activate or deactivate the rollback lock (see chapter 6.3) with this action. Attention: Power stage 1 is also activated at the same time.

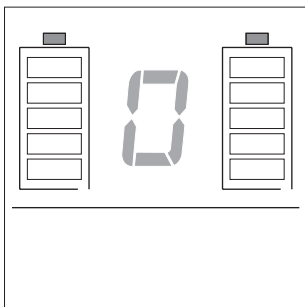


Push the button [22] on the remote control to simultaneously switch on both e-motion wheels in power stage 2.

Power stage 2 and the charge status of both battery packs is indicated in the display.

Two beeps sound at the e-motion wheels. The LEDs [1] on the wheel hub also signal the charge status of the respective battery pack.

If you press the button [22] longer than 3 seconds, you will activate or deactivate the rollback lock (see chapter 6.3) with this action. Attention: Power stage 2 is also activated at the same time.

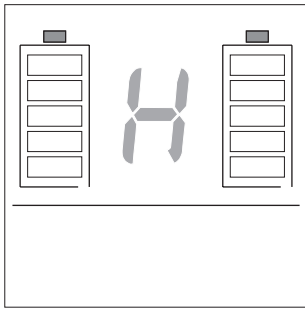


Push the button [24] on the remote control to simultaneously switch off both e-motion wheels. A zero and the charge status of both battery packs is indicated in the display.

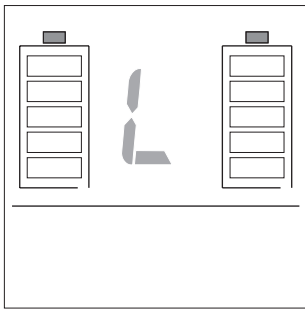
A beep sounds at the e-motion wheels.



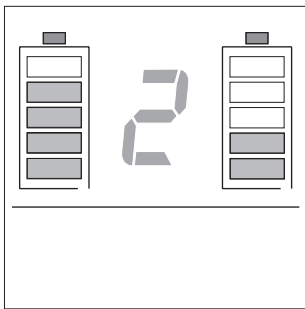
If the remote control does not detect the two wheels (for example, due to a poor remote communication), the information message shown here appears on the display.



If button 1 or 2 is pressed longer than 3 second to activate or deactivate the rollback lock, a long signal tone sounds on the e-motion wheel in each case. If the rollback lock is active, the following will be displayed: the current charge status of the two battery packs, an „H” in alternating fashion, the power stage currently set (1 or 2) and, if applicable, additional functions (e.g. the button lock). In case of an error, only the corresponding error code is displayed.



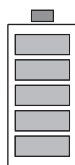
When activating the button lock, the following is shown in the display: the current charge status of the two battery packs, an „L” in alternating fashion, the power stage currently set (1 or 2) and in case an error occurs, the corresponding error code.



9.3 Display of the battery pack charge status

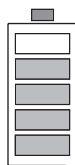
The charge status of the two e-motion battery packs is indicated in the upper half of the display [21]. Please note that because of different drive moments or possibly differently adjusted wheels the current consumption may also vary (see also Chapter 6).

The respective charge status of a battery pack is indicated as follows:

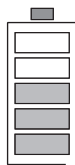


5 bars come on – Battery pack is charged 100 %.

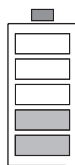
Avoid driving down slopes at high speeds because a forced shut-down of the wheel may occur due to the current return in the wheels and the risk of overvoltage in the battery pack.



4 bars come on – Battery pack is charged 80 %.



3 bars come on – Battery pack is charged 60 %.

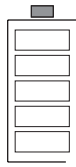


2 bars come on – Battery pack is charged 40 %.

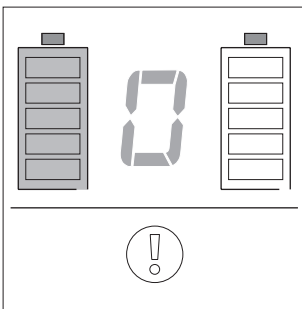
We recommend not driving too far without charging the batteries first.



1 bar comes on – Battery pack is charged 20 %.
Charge the batteries before starting to drive.

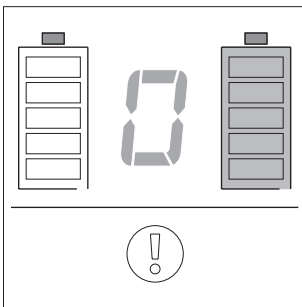


No bars come on – Battery pack is empty.
Driving without charging the battery pack is not possible.

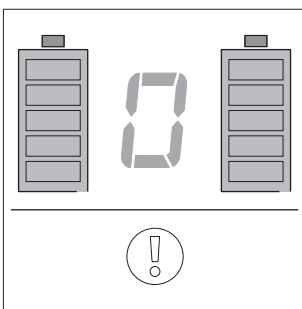


9.4 Display of error messages

If an error is indicated according to the table on the following page and the left battery symbol flashes at the same time, the error indicated occurs only in the left wheel or in the battery pack of the left wheel.



If an error is indicated according to the table on the following page and the right battery symbol flashes at the same time, the error indicated occurs only in the right wheel or in the battery pack of the right wheel.



If an error is indicated according to the table on the following page and both battery symbols flash at the same time, the error indicated occurs in both wheels or in the battery packs of both wheels.

Table Error Messages

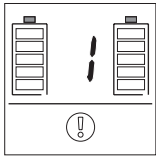
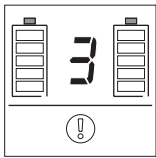
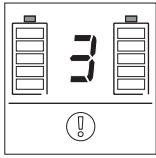
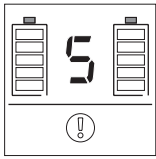
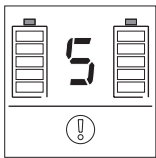
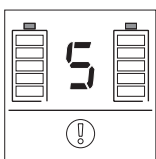
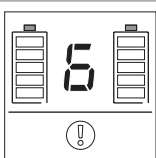
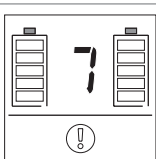
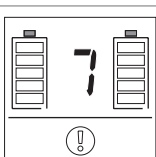

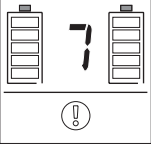
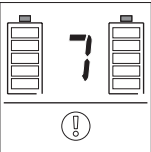

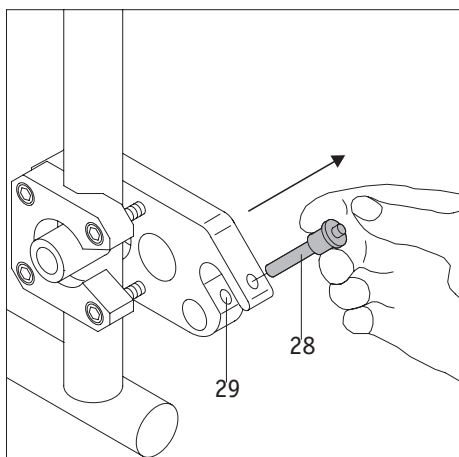
| Indication in the display | Acoustic signal on the wheel | Repetition Acoustic signal | Error description | What to do |
|---|------------------------------|--|--|--|
|  | — — — • • | every 10 seconds | Overtemperature of the motor. | Switch off the system and allow it to cool down; observe the ambient temperature. |
|  | • • | every 8 seconds | Overvoltage in the battery pack; a forced shut-down is immediately pending. | The error occurs especially when driving down slopes with fully charged battery pack. Drive at a slower speed. |
|  | • • | every 10 seconds | Overvoltage of the battery pack. The system is shut down by force. | The error occurs especially when driving down slopes with fully charged battery pack. Drive at a slower speed. |
|  | • • • | every 60 seconds | Undervoltage of the battery pack (< 10 % remaining capacity), a forced shut-down is immediately pending. | Charge the battery pack immediately. |
|  | • • • | every 10 seconds | Undervoltage of the battery pack (< 5 % remaining capacity), a forced shut-down is immediately pending. | Complete a ride down a slope. Charge the battery pack immediately. |
|  | • • • • • | every 10 seconds | The voltage in the battery pack is no longer sufficient for operation, the drive was shut down by force. | Charge the battery pack immediately. |
|  | — — — — • | every 10 seconds | The signal coming from the push rim is applied longer than one wheel rotation. | A foreign object may have become wedged in the push rim. Remove this foreign object. Defect in the wheel, repair required. |
|  | — — — | 1 time each time the e-motion is switched on | The battery pack has less than 60 % capacity of a new battery. | The achievable range is significantly reduced. Replace the battery pack against a new one. |
|  | — • • • • | every 3 seconds | The charger plug is inserted in the charger socket; the wheel turns at the same time. | Pull the charger plug from the charger socket or stop the movement of the wheel. |

Table Error Messages (continued)

| Indication in the display | Acoustic signal on the wheel | Repetition Acoustic signal | Error description | What to do |
|---|------------------------------|----------------------------|---|---|
|  | — ● ● | every 5 seconds | The charger plug is inserted in the charger socket but no charge current is flowing. | Check the operational readiness of the charger. Possible defect on the charger or wheel; repair is then required. |
|  | — ● ● ● | every 10 seconds | The battery pack was charged longer than 12 hours but is not completely charged. | The charger is defective if both battery packs are charged at the same time and the error message is indicated for both battery packs. If both battery packs are charged at the same time and the error message is indicated for only one battery pack, this battery pack is defective. Repair is required in both cases. |
|  | — ● | every 10 seconds | The charging process was terminated because the ambient temperature is below 0 °C or above 40 °C. | Charge the battery packs only at temperatures above 0 °C and below 40 °C. |
|  | — ● ● ● ● | every 10 seconds | The charge process was terminated because one battery pack is defective. | The battery pack is defective and must be sent to Alber for repair. Contact your specialist dealer in this regard. |



A major fault of the system is present if error messages other than those listed in the display are shown or other signal tones than those listed sound on the wheels. Your e-motion is then no longer operational and must be sent to the Alber factory for inspection. To prevent damage or personal injury, do not operate or use the e-motion if a fault is present.



10. Anti-tippers

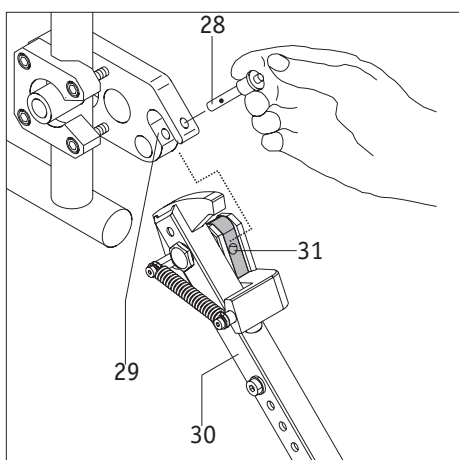
Because your wheelchair may already be equipped with anti-tippers, Alber anti-tippers are only offered as accessory. Do not remove the anti-tippers with which your wheelchair is equipped. When using the original wheelchair anti-tippers, the instructions and safety information of the manufacturer apply to their usage.

- If your wheelchair has no anti-tippers, you must install Alber anti-tippers. Failure to do so might cause serious damage or personal injury.

When using Alber anti-tippers, two additional brackets are attached to your wheelchair in which the anti-tippers are introduced. The following instructions and safety information applies.

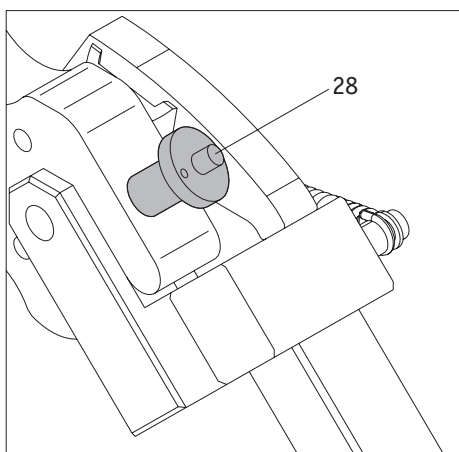


To prevent damage or personal injury, never use or operate the e-motion unless anti-tippers are properly installed.

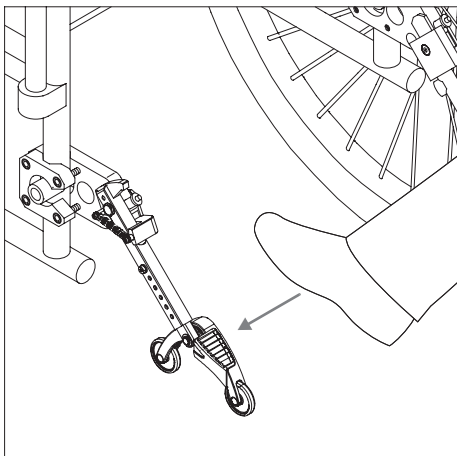


10.1 Attaching and removing the Alber anti-tippers

- Pull the quickpin [28] out of the receiver fork of the bracket [29] by using your thumb to press on the pin and at the same time using your forefinger and middle finger to pull it out.
- Insert the clamping piece of the anti-tipper [31] into the receiver fork of the bracket [29].
- Lock the receiver for of the bracket [29] with the quickpin [28]. Press on the pin with your thumb and then push it all the way against the stop in the bracket.
- Check the secure seat of the quickpin [28] in the receiver fork of the bracket [29]. It may not be pulled out again without pushing the unlocking mechanism.
- Attach the second anti-tipper.

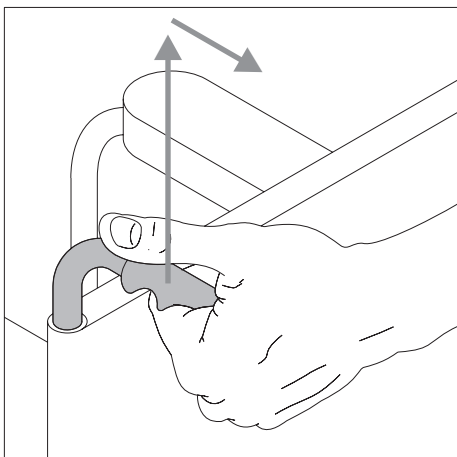


Remove anti-tippers in the reverse order.

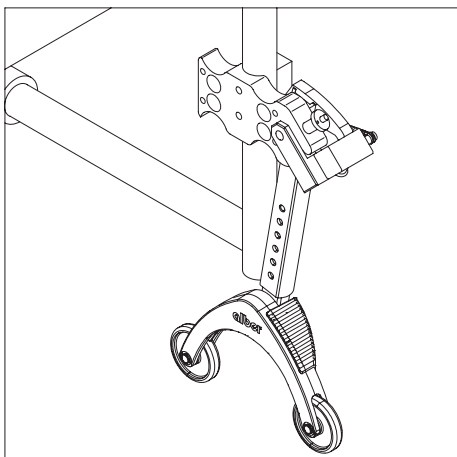


10.2 Using the Alber anti-tippers

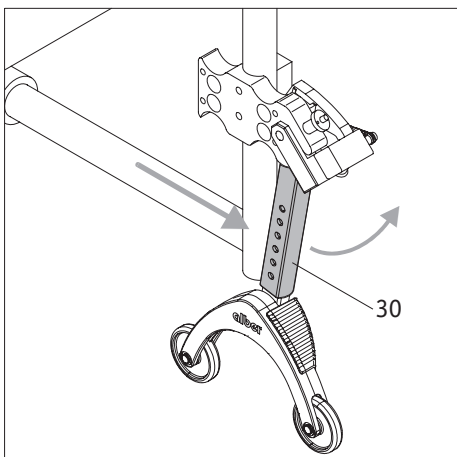
- Push with the foot against an anti-tipper as shown in the graphic illustration.



- At the same time, pull the wheelchair by its handles slightly to the top and rear until the wheelchair was raised and the anti-tippers engage in a fixed position.

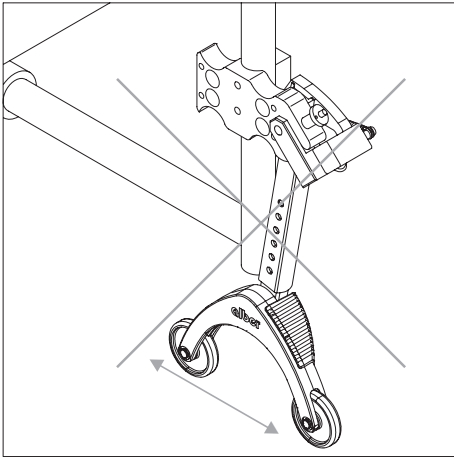


- You can not attach or remove a wheel. Repeat the process with the second anti-tipper on the other side of the wheelchair.



- Once the wheels have been attached, you can return the anti-tippers to the original position. To do so, push the wheelchair forward and the holding rod [30] back with the foot at the same time.

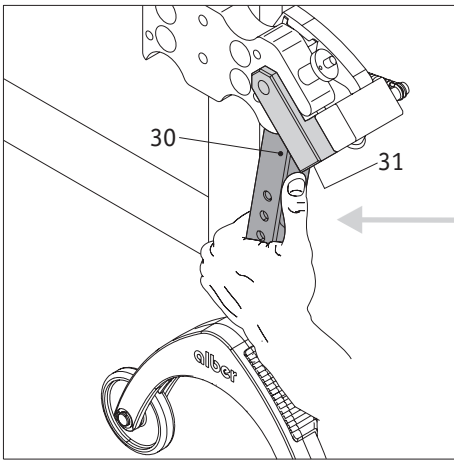
10.3 Important operating and safety information



Jacking up the wheelchair while the driver is in it is not permitted!



**Anti-tippers are no transfer rolls!
Do not move the wheelchair while jacked up!**



Use caution when adjusting or folding the anti-tippers, especially when making the settings or operation with your hand. There is a risk of crushing due to the required high spring force between holding rod [30] and the clamping [31].

11. Safety Instructions: Always follow these instructions to prevent damage or personal injury.

For safety reasons, apply the wheelchair parking brakes when you have stopped, especially on hills and slopes to prevent the wheelchair from rolling away unintentionally.

TO ENSURE SAFE USE OF YOUR E-MOTION AND TO PREVENT DAMAGE OR PERSONAL INJURY, THE FOLLOWING INSTRUCTIONS MUST BE STRICTLY OBSERVED AT ALL TIMES.

11.1 Safety notes

In the (unlikely) event of overheating or fire of the battery pack it must not come into contact with water or any other liquids at any rate. The battery manufactures recommend sand as the only means to extinguish the fire.

Before starting a ride/journey, observe the following:

- The e-motion must only be attached to wheelchairs with hand rims that have been approved by Alber GmbH for this purpose.
- Therefore always mount the e-motion wheels according to their identification on the left and right side of your wheelchair, respectively. Incorrectly attached wheels can lead to accidents because of their different programming.
- The bracket for the e-motion must only be assembled and altered by Alber GmbH or the medical supplies provider authorized by Alber.
- The wheelchair user manual must be followed when using the e-motion.
- The wheelchair must not be driven without the two anti-tippers properly attached. Drive only with both anti-tippers attached.
- Always have properly attached the original anti-tippers of the wheelchair manufacturer or the optionally available Alber anti-tippers to your wheelchair.
- Before each use or operation, always check the condition of the e-motion wheels. The e-motion must not be operated after the tires have reached their wear limit (a tire thread can no longer be seen).
- Before each use or operation, always check the function of the parking brakes of your wheelchair. You must not drive without properly functioning parking brakes.
- If your wheelchair has pneumatic tires:
Check the tire pressure of the emotion wheels at regular intervals. It must be between 6.0 bar (85 psi) and 10.0 bar (145 psi). Check the tire pressure of the steering wheels according to the notes and specifications of the wheelchair manufacturer. If the air pressure is too low, this can severely influence the driving behaviour and range.
- Check the correct seat of the e-motion wheels in the two wheel receivers on your wheelchair before each ride.
- The e-motion must not be used in combination with a wheelchair puller or hand bike. The drives are not designed for the speeds that can be achieved with a hand bike. Even if the e-motion drives are switched off, there is a risk of the electronic system sustaining damage from the current induced by the fast rotation of the wheel.

When driving with the e-motion, always observe the following to prevent personal damage or personal injury:

- Before driving the e-motion on slopes or hills, you must be able to master safely handling and operating of the device on flat terrain.
- The maximum permissible gradient specified by the wheelchair manufacturer must not be exceeded.
- Approach curbs, steps or steep drops with exceptional care and caution.
- When the e-motion is switched on, each impulse on the push rims is converted into a drive command. When stopping or waiting at potentially hazardous locations (e.g. while waiting at a pedestrian crossing on street corners, on hills and slopes, on ramps of any type, on motorized, elevating, or lift platforms, in tight or narrow spaces or confines) remove your hands from the push rims and secure your wheelchair with the parking brakes.
- Never reach into the wheel while the e-motion is switched on.
- Never insert or throw any objects into an e-motion wheel that is switched on or off.
- Never attach any objects to the push rims! This could lead to undesirable drive movements.
- When driving on paths, keep a sufficient distance (if possible, at least a wheelchair's width) from the curbstone edge.
- Do not travel on non-solid surfaces (e.g. on loose gravel, sand, mud, snow, ice, or through deep puddles).
- Never leave the e-motion unattended, either switched off or on.
- The performance of the e-motion can be impaired by the electromagnetic fields, for example, generated by mobile phones. The supplementary drive must therefore be switched off when mobile phones are used in direct proximity to the wheelchair.
- The e-motion can have a disruptive effect on the other equipment, such as security panels in department stores.
- Do not use or operate the e-motion on escalators or motorized walkways.
- While driving at the highest speed, never change the direction of travel suddenly to the left or right, as this may cause the wheelchair to tip over to the side.
- Reduce your speed when negotiating curves.
- If you intend to stop with your wheelchair on an incline or downhill slope, the wheelchair must be parked perpendicular to the slope or incline and the parking brake pulled.
- Pull the parking brakes of your wheelchair after each ride or when stopping the wheelchair to prevent unintentional rolling away!
- Never drive parallel along slopes. Only drive perpendicular to the slope.
- Never reach into the spokes of the e-motion wheels while driving or into the front wheels of your wheelchair.
- Brake the e-motion gently, uniformly, and according to your speed (not abruptly or in a jerky manner).

- While driving in vehicles, sit only on the seats installed there using the pertaining restraint systems. Disregarding these instructions bears the risk that both you and the other passengers could be injured in case of an accident.
- Secure your wheelchair and the e-motion wheels according to the respective applicable legal stipulations and rules when driving in vehicles.
- When driving on public roads and paths, observe the instructions of the Highway Code and the Federal Motor Safety Standards (StVZO).
- The e-motion is only intended for persons with limited mobility and must not be used for any other purpose, e.g. for playing children, carry loads or to transport goods. Do not allow children to play with the e-motion. Do not transport material or loads with the e-motion.
- Operating the e-motion in the vicinity of strong magnetic fields as they may be caused by magnetic clamps, transformers, tomography, etc. is not permitted.
- Do not drive the e-motion during adverse conditions, for example, during storm, snow and ice, hail and tall brushwood.
- Always move the push rims gently, smoothly and uniformly. Never move them suddenly, abruptly or in a jerky manner.

Observe the following after completing the ride with your e-motion:

- When not in operation, switch off the e-motion straightaway to avoid unintentionally triggering a drive movement through contact with the push rims and battery from self-discharging.
- Apply the parking brakes of the wheelchair at each stop.
- If possible, charge the battery pack on your e-motion after each ride.

11.2 Requirements and instructions on using the e-motion together with the wheelchair as a seat in vehicles

The usage of a wheelchair as a seat in vehicles (e.g. cars, vans,..) is regulated by local law and the specifications of the wheelchair manufacturer. The combination Alber e-motion and manual wheelchair doesn't change the behavior of the wheelchair significantly in crash situations, therefore the manual wheelchair is the leading element relating to this. Due to this we can agree to the passenger transportation in vehicles while sitting in the wheelchair only under following conditions:

1. Local law allows the usage of wheelchairs as seats in vehicles.
2. The manufacturer of the manual wheelchair has given clearance for passenger transportation in vehicles regarding the affected wheelchair.
3. An appropriate tie-down system for the manual wheelchair (ISO 10542), an appropriate head-rest and an appropriate belt system (three-point safety belt) are available, respectively used in adherence to the user manual of the wheelchair and the tie-down system
4. The tie-down system doesn't dock at the e-motion wheels.
5. The manual wheelchair used is covered in the Alber compatibility list for e-motion.

Crash tests are typically the basis for the manufacturer of wheelchairs to release a wheelchair for passenger transport in vehicles but these crash tests (according to ISO 7176-19) don't simulate all possible situations e.g. a side impact. Due to this we strongly recommend to re-seat the wheelchair user in the fixed seat of the vehicle where he is protected by the safety systems of the vehicle like airbag or side impact protection.

If the vehicle is equipped with an elevating or lift platform, use extreme caution when driving the e-motion on the platform. Drive very slowly, gently and smoothly. Make no sudden, abrupt, or jerky movements. Always look directly into your direction of travel and avoid all distractions.

Alber GmbH rejects any liability for accidents and their consequences or for damages to the wheelchair or the e-motion wheels which arise as a result of the non-observance of these requirements and instructions.

11.3 Obstacles

Overcome obstacles (e.g. curbs) only while driving backward. The maximum permitted height of the obstacle is 50 mm. Attention! When driving over obstacles in reverse, the full function of the Alber anti-tippers is not guaranteed! Therefore, drive slowly, smoothly and carefully in reverse until the wheels of your e-motion touch the obstacle. Then, carefully drive over the obstacle. We recommend the assistance of an accompanying person.

11.4 Hazardous locations and situations

- The operator of the wheelchair makes an independent decision about the routes and surfaces to be traveled based on his/her driving skills and physical capabilities.
- Before driving the e-motion, the user must check the e-motion wheels for run-down or damaged tires, as well as the charge status of the two battery packs and the proper functioning of the optical and acoustic signal devices on the wheel and the remote control. The tires must be undamaged and properly inflated and the battery must be properly charged.
- The brake must always be the proper and safe working order.
- These safety checks as well as the personal driving skills of the user are particularly important at the following hazardous locations which are to be negotiated at the discretion of the e-motion driver:
 - Quays, landing places and moorings, paths and places near bodies of water, unsecured bridges and dikes
 - narrow paths, sloping paths (e.g. ramps and entrance ramps), narrow paths on a downhill slope, mountain paths
 - narrow and/or steep/sloping paths on main traffic routes and side streets or near steep drops
 - Leaf and snow covered or icy tracks/roads
 - ramps, platforms and lifts on vehicles.
- Always operate the e-motion gently, smoothly and uniformly. Do not perform any sudden, abrupt or jerky movements. Look into the direction of travel and do not become distracted.



When negotiating a curve or when turning on hills or sloping paths, there can be an increased inclination to tip to the side due to a shift in the center of gravity. For this reason, carry out this drive maneuver with increased caution and at a slower speed!



Utmost caution is required when crossing roads, junctions and railway crossing points. Never cross tracks embedded in roads or at railway crossings parallel as the wheels could become jammed or stuck.



Utmost care is required when traversing ramps, platforms or lifts on vehicles. The e-motion must be switched off while the ramp or lift is being raised or lowered. Likewise, the parking brakes must be applied on the wheelchair. Rolling away, e.g. due to unintentional drive commands, is thereby prevented.



When conditions are wet, the grip of the tires on the surface is reduced; and there is an increased risk of slipping. Adjust your driving behaviour accordingly and never drive with run down tires.

12. Care, safety checks (maintenance), reuse and disposal

12.1 Care



Water entering the device can destroy the drive. Therefore never clean the e-motion under running water or with a high-pressure water jet.

Ensure that no liquid or moisture can enter the wheel hub or the battery pack! Cleaning the e-motion is therefore a task that must be carried out with special caution.

Please observe the following instructions:

- As a rule, the battery pack must remain installed in the e-motion wheel at all times and should only be removed for servicing or transport by aeroplane. Normally only the outside of the wheels need to be cleaned. Cleaning the inside of the wheel hub or the bottom side of the battery pack is not necessary.
- Clean the surface of the wheels with a dry or slightly damp cloth. If it is necessary to clean the inside of the hub or the bottom side of the battery pack, use a dry cloth only.
- Never use scouring pads, abrasive detergents or aggressive chemicals.
- Never clean the e-motion under running water, with a garden hose or a high-pressure water jet, as there is risk that water enters the device, causing repairable damage to the electronics.

Alber GmbH shall not be liable for damage caused by water inside the device.

Please note that such damage is not covered by our warranty.

12.2 Maintenance (safety inspections)

Legislators have regulated how to carry out safety inspections in the German Medical Devices Operator Ordinance (MPBetreibV). Safety inspections (hereinafter referred to as STK) are intended to verify the operation and safety of the product, uncover any defects and, if necessary, initiate steps/repairs that will restore the product to proper working order.

Section 6 of the MPBetreibV stipulates that the manufacturer has to specify an interval at which this STK is to be performed and which must not exceed 2 years with regard to the products listed in appendix 1. Based on our market observations, an interval of 2 years has proven reasonable for products used as mobility aids that are used under normal operating conditions.

This guideline value of 2 years may vary with the product's respective degree of utilisation and the behaviour of the user. Checking the degree of utilisation 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 STK is covered by your health insurance provider, especially with regard to any existing contracts.



Service work and repairs to the e-motion must only be carried out by authorized specialist dealers or by Alber. If any errors occur, please contact your specialist dealer or the Alber Service Center as well.

12.3 Storage

If your wheelchair and the e-motion will be stored for an extended period (e.g. several months), please observe the following:

- 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.
- Follow the instructions for storing the battery pack.
- The wheelchair and the e-motion e-motion components must be cleaned prior to recommissioning.
- Check whether a safety inspection is required before recommissioning and arrange for said inspection if necessary.

12.4 Re-use

If your e-motion has been made available to you by your health insurance company and you do not need it any longer, you should contact your health insurance company or your medical supplies provider. Your e-motion can be re-used easily and economically.

- Alber recommends conducting a safety inspection before each re-use depending on the condition of the device. However, your e-motion shall be subjected to a professional safety inspection no later than every 2 years to examine the full functionality and safety.
- The brackets with which the e-motion is secured to the wheelchair can be easily and quickly removed from the wheelchair by the authorized specialist dealer and attached to a new wheelchair.
- The system is protected against corrosion, but as a precaution you should check it regularly by a visual check.
- In addition to the cleaning instructions detailed in Chapter 12.1, the push rims and all plastic parts of the e-motion wheel accessible from the outside as well as the optional remote control must be disinfected before re-use. To do this, use cleaning agents suitable for disinfection by wiping according to the instructions of the corresponding manufacturer.

12.5 Disposal



The battery pack and accessories are long-lasting products.

However, they may contain materials that prove to be hazardous for the environment if they are disposed of in places (e.g. landfills) that are not intended for this purpose according to the current applicable legislation in the respective country.

The symbol of the „crossed-out refuse bin“ (in accordance with WEEE Directive 2002/96/EC) is placed on this product to remind you of your obligation to recycle. Therefore please act in an environmentally-conscious manner and bring this product to your regional recycling centre at the end of its service life.

Please familiarize yourself with the applicable legislation in your country regarding disposal, because the WEEE Directive does not apply in all European States.

These components are also alternatively taken back by Alber or Alber dealers for proper and environmentally sound disposal.

13. Guarantee, warranty and liability

13.1 Warranty for defects

Alber guarantees that the e-motion is free from defects at the time of original purchase from an authorized dealer. These warranty claims expire 24 months after delivery of the e-motion.

13.2 Guarantee of durability

Alber provides a 24 month guarantee of durability for the e-motion.

The guarantee of durability does not include

- devices where the serial numbers have been altered, disfigured or removed
- wear parts such as tires or operating controls
- defects due to natural wear and tear, faulty handling, in particular defects due to non-compliance with this user manual, defects due to accidents, negligent damage, the effects of fire or water, force majeure and other events which lie outside the influence of Alber.
- any servicing work required due to daily use (e.g. replacing the tires)
- Checking the device without finding any fault
- Improper use or operation.

13.3 Liability

Alber GmbH as the manufacturer of the e-motion is not responsible for its safety and reliability if:

- the e-motion is handled inappropriately
- the e-motion is not serviced by an authorized specialist dealer or by Alber GmbH every 2 years
- the e-motion is operated contrary to instructions/notes in this user manual
- the e-motion is operated with insufficient battery charge
- repairs or other work is carried out by unauthorized persons
- foreign parts (parts not belonging to the system) are attached or connected to the e-motion
- parts of the e-motion are dismantled.
- The e-motion has been altered or modified without Alber's authorization.

14. Product safety information

All 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 would be available to customers with prompt and appropriate safety information:

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

If any corrective measures should be necessary, Alber shall notify the specialist dealer, who will then contact you.

15. Estimated service life

We expect that the estimated service life of this product is five years on average provided that the product is used as intended and maintained and serviced in accordance with all 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 shall not be deemed an additional guarantee.

Appendix A – Explanation of symbols

The symbols used on the labels and in some parts of this operating manual are explained in the following.



Indicates tips and special information.



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



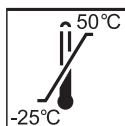
The e-motion conforms to the requirements laid down in the European Medical Device Directive 93/42/EEC as well as the applicable sections of standard DIN EN 12184.
The battery charger conforms to European guidelines.



For information on how to dispose of the e-motion and its components, please see chapter 12.4.



Protect the device from moisture.



Indicates the temperature range in which the device can be used.



Important, observe accompanying documents.



Maximum weight of person that the e-motion can accept as its load capacity (120 kg).



Specification of the manufacturing date on the system label (see Appendix B - Labels)











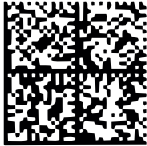
Name and address of the device manufacturer (see reverse of this operating manual).



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

Appendix B - Labels

There are labels on the e-motion components which include various product details. In the event of a system defect, individual components can be replaced by your specialist dealer as part of the Alber exchange parts pool. Your specialist dealer will need some of the information given on the labels.

| | | |
|---|--|---|
| Systemnr. / System No. Produkt/Modell [Product/Model] Max. Pers. Gewicht [Max. Occ. Weight] Betriebsspannung [Operating Voltage] Max. Geschwindigkeit [Max. Speed] Motor Nennleistung [Rated Power] Sicherheitshinweise beachten! | M15160150 e-motion M15 130 kg 25,2 V 6 km/h 2 x 60 W Follow safety hints! |  |
|       |  |  2016-01-15 |
| Alber GmbH Vor dem Weissen Stein 21 D-72461 Albstadt Made in Germany | | |
| (01)04046727143169 (11)160115 (21)M15160150 | | |

System label

The system label provides information on the key technical data of the e-motion and makes it possible, if necessary, to trace the system. Please specify the system number when exchanging a device as part of the Alber exchange parts pool. The system label is on the front of the interface.

| Sicherheitstechnische Kontrolle | | | |
|---------------------------------|-----------|------|------|
| durch: | | | |
| Alber GmbH 72461 Albstadt | | | |
| 01 | nächste | 07 | |
| 02 | Kontrolle | 08 | |
| 03 | | 09 | |
| 04 | | 10 | |
| 05 | | 11 | |
| 06 | | 12 | |
| 2015 | 2016 | 2017 | 2018 |

"Safety inspection" label

The label should remind you when your next safety inspection is due.







It is located inside the wheel hub.



Component label

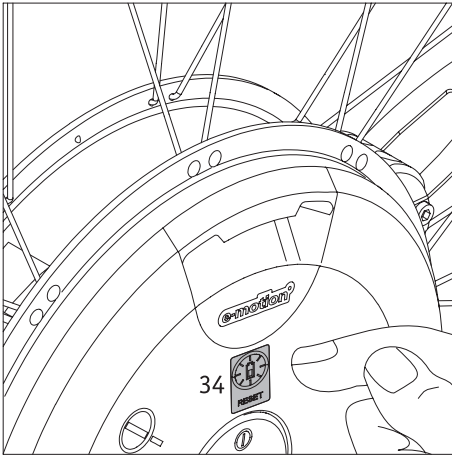
The label is affixed in the wheel hubs of the e-motion wheels, the battery pack, the charger, and the remote control.

Please specify the component number of the battery charger (number in the middle of the label, shown by an arrow in the adjacent diagram) when replacing the component within the Alber exchange parts pool.

| | |
|--|---|
|     | Bitte vergessen Sie nicht, die Akku-Packs nach jedem Gebrauch nachzuladen, um deren volle Leistungsfähigkeit zu erhalten. <i>Please make sure that the battery packs are recharged after each partial discharge i.e. after each use, to maintain their full capacity.</i> |
|    | Kurzschluss vermeiden / Avoid short circuits Nur Original-Ladegerät gemäß Gebrauchsanweisung verwenden. / Use only genuine charger provided with the unit. |
| Typ: Lithium-Ionen Akku-Pack 71CR19/66-3 Type: Lithium-Ion battery-pack 71CR19/66-3 Auslaufsicher / Nonspillable battery Nennspannung: 25,6 V <i>Nominal voltage:</i> 25,6 V Nennkapazität: 6,45 Ah <i>Nominal capacity:</i> 6,45 Ah Wattstundenleistung pro Batterieblock: <i>Watt-hour rating per battery block:</i> 47,1 Wh / 70,6 Wh / 47,1 Wh |  Bitte beachten Sie die Hinweise zum Laden und zum Transport in der Gebrauchsanweisung / For charging and transportation, please read operating instructions. |
| Betriebstemperatur: -25°C ... +50 °C <i>Operating Temperature:</i> -13°F ... 122°F Ladetemperatur: 0°C ... +40 °C <i>Charging Temperature:</i> 32 °F ... 104°F |  Alber GmbH Vor dem Weissen Stein 21 72461 Albstadt, Germany Phone: +49 7432 2006-0 Fax: +49 7432 2006-299 |

Battery pack labelling

There is a sticker on the side of the battery pack with instructions for use and technical information.



Appendix C - RESET button on the battery pack

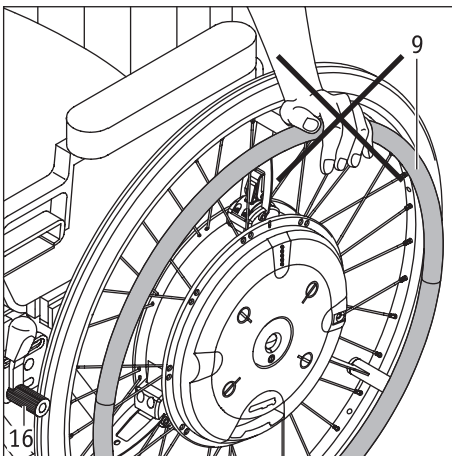
As described in chapter 4.3, the battery packs [12] remain in the wheel hubs of the e-motion wheels during use but must be removed in the event of air transport, wheel storage, servicing or extended periods of non-use (longer than a week). In order to save energy in the process, the batteries enter into a so-called sleep mode 16 minutes after they are removed from the wheel hub.

Battery packs with a newer manufacturing date have a RESET button [34] which aids the electronics in “waking up” the battery pack. To do this, proceed as follows:

- Insert the battery pack in the wheel hub as described in chapter 4.6.
- Press and hold the RESET button [34] for about 2 seconds.
- If the battery pack was already in sleep mode, the LEDs illuminate briefly before the e-motion wheel is switched off.
- If the battery pack was not in sleep mode, the LEDs [1] do not illuminate; the e-motion wheel is switched off.
- Switch on the e-motion wheels as indicated in chapter 2.2 and 2.3.

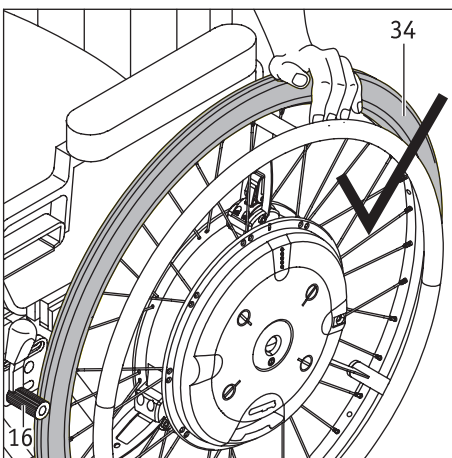


Always pay attention to the charge status of the battery pack (see chapter 5.1). Before storing it, charge the battery pack and check its charge status every month. If necessary, charge the battery pack if the charge status drops to below 50 per cent.



Appendix D - Important information about changing seats

- Switch off the e-motion.
- Tighten the handbrake [16] before changing seats into or out of the wheelchair, so that the wheelchair cannot roll away unintentionally.
- Do never prop up yourself with your hands on the push rim [9]. The sensors that are fixed on the push rim can be permanently damaged, so that the wheel is not functional anymore.
- Prop up yourself on the tyre [34] instead when you are changing seats and do not touch the push rim [9] while doing this.



Ihre Alber-Vertretung / Your Alber representative / Votre représentation Alber /
Vostra rappresentanza Alber / Su representación Alber / Din Alber representant /
Din Alber-agenturene / Uw distributeur Alber / Deres Alber-repræsentation



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