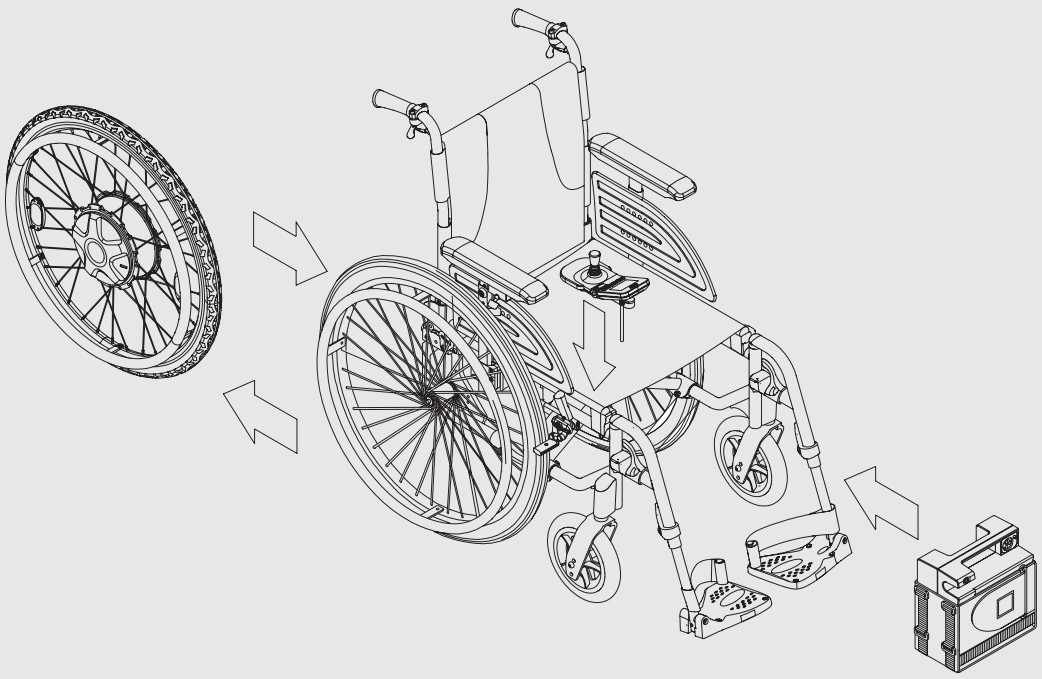
alber®

e-fix® eco

Gebrauchsanweisung e-fix eco DE

Instructions for Use e-fix eco EN

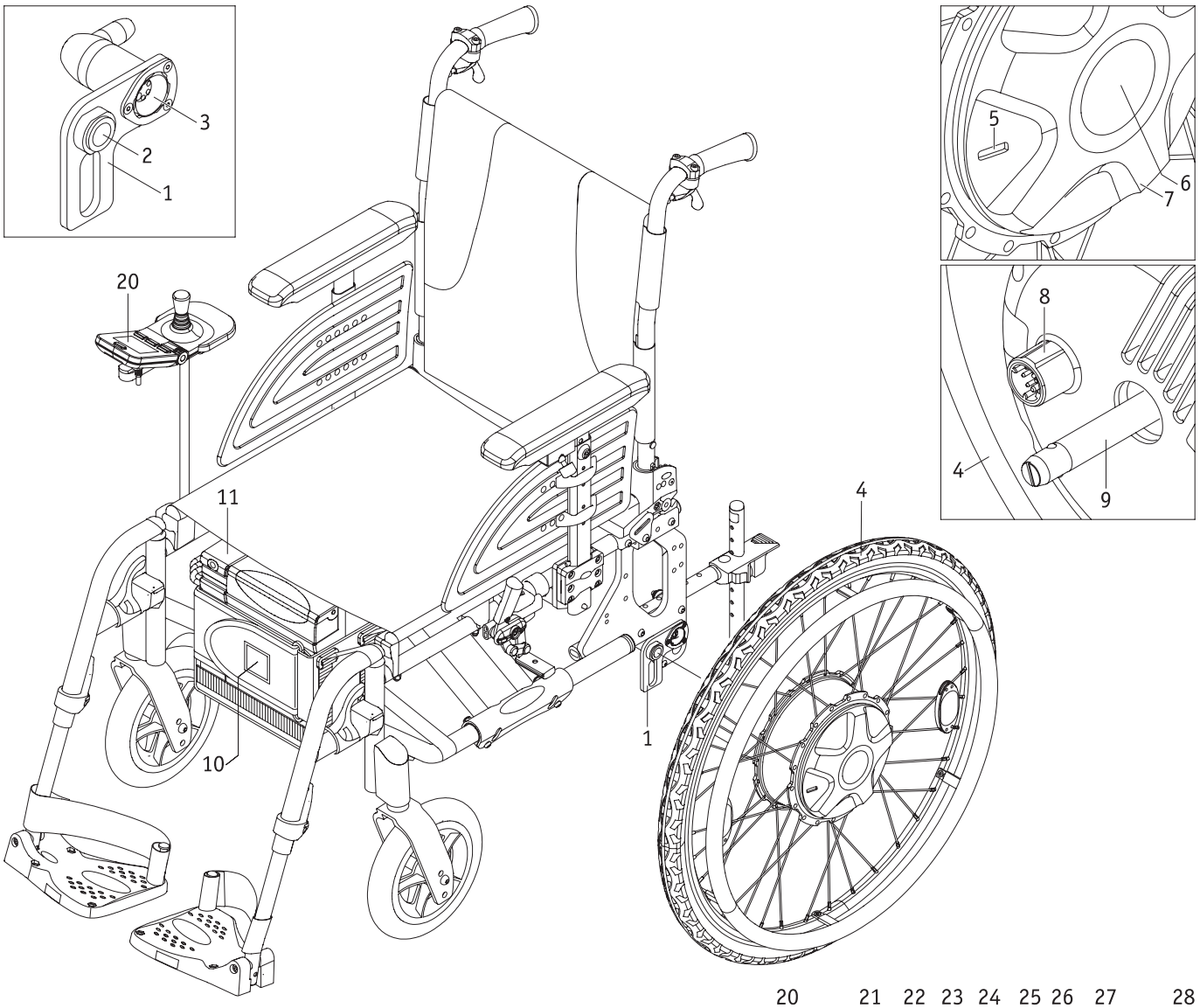


CE

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)

alber®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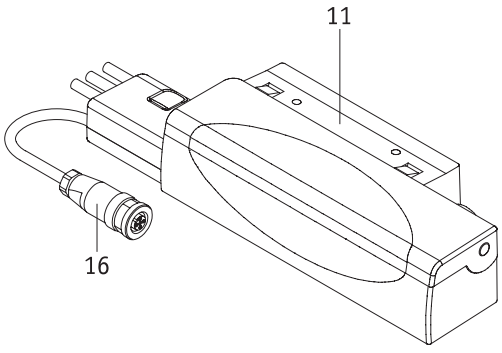
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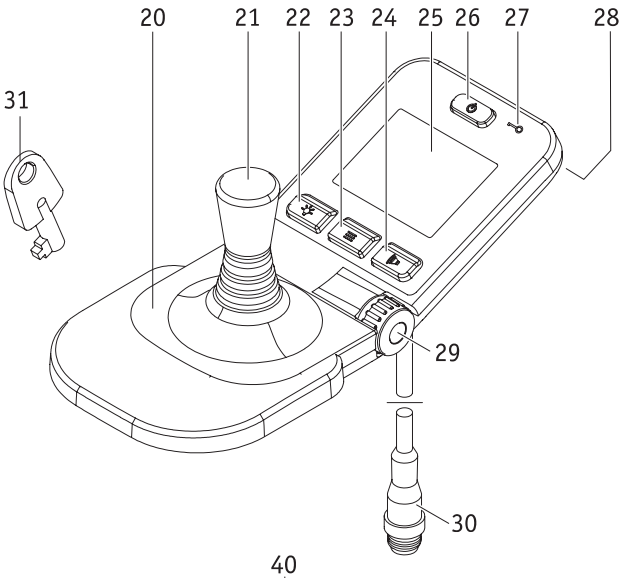
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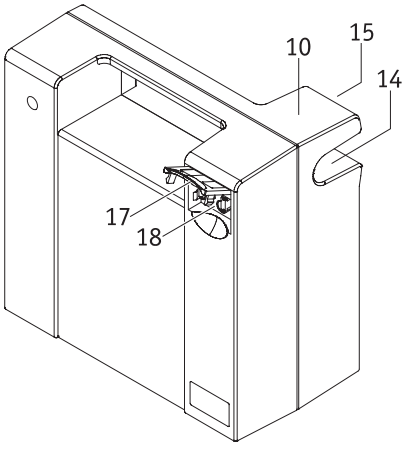
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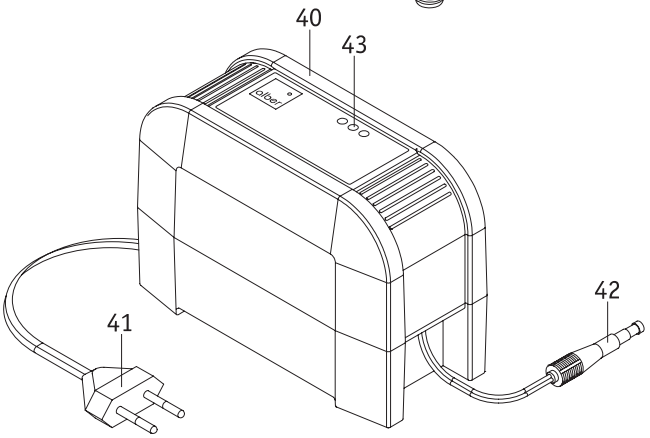
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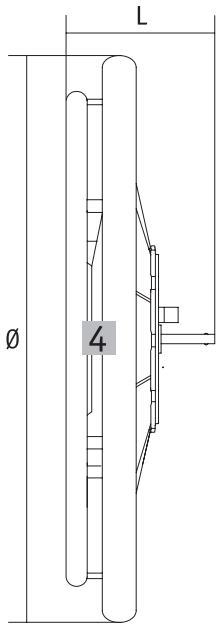
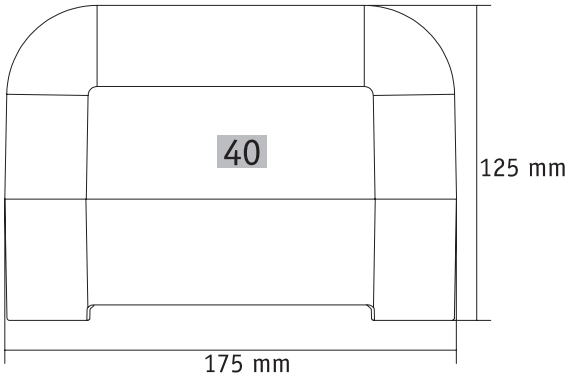
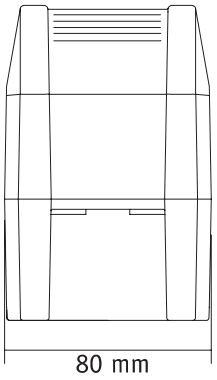
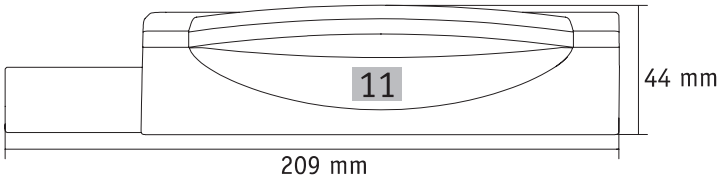
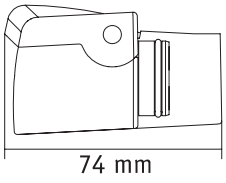
e-fix E35 eco 14”: Ø= 356 mm, L= 170 mm
e-fix E35 eco 22”: Ø= 560 mm, L= 134 mm
e-fix E35 eco 24”: Ø= 610 mm, L= 134 mm

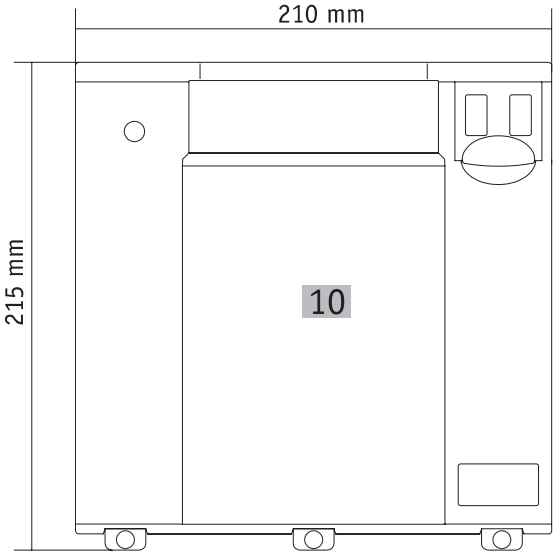


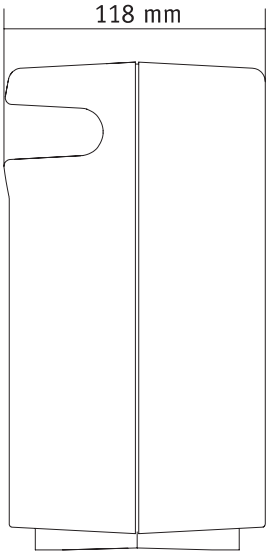


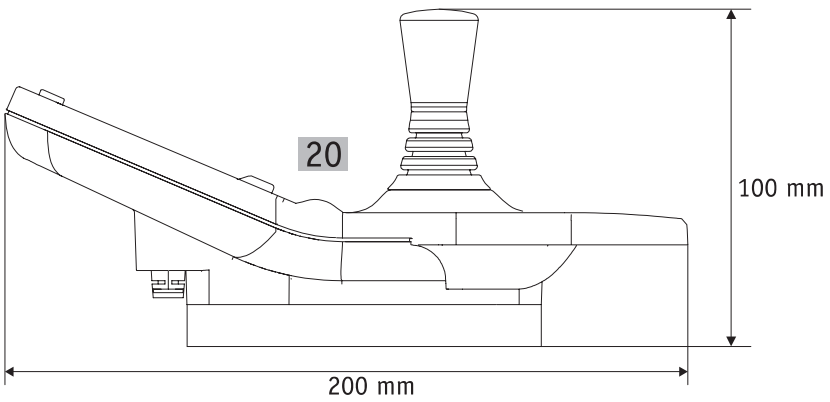


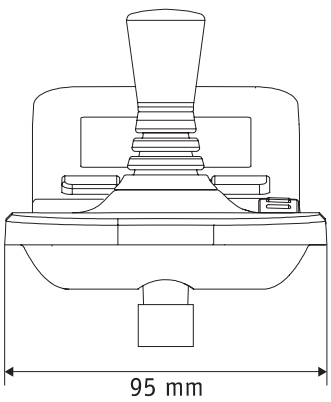












USA and CANADA only

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

Powered Wheelchair Electromagnetic Interferences (EMI)
Because EM energy rapidly becomes more intense as one moves closer to the transmitting antenna (source), the EM fields from hand-held radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the powered wheelchair's control system while using these devices. This can affect powered wheelchair movement and braking. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of the powered wheelchair.

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

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

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

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

Electromagnetic Interference (EMI) From Radio Wave Sources
Powered wheelchairs and motorized scooters (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energie (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the powered wheelchair's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called its "immunity level". The higher the immunity level, the greater the protection.

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

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

Note: Other types of hand-held devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, and cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to your powered wheelchair.

Contents

This operating manual provides you with information about the product e-fix E35 eco, hereinafter referred to as e-fix.

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.

The latest applicable version of this operating manual is available for download on our website **www.alber.de**. If you require a large-print version, please contact Alber Service Centre.

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Version: 2021-11-22

1. Introduction

1.1 Intended purpose

The e-fix is an add-on drive for wheelchairs. It converts a manually powered wheelchair to an electrically powered wheelchair. It is intended as a medical aid for disabled persons and serves to enhance their mobility and flexibility.

1.2 Important safety notes – please observe at all times

For safety reasons, the e-fix 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-fix wheels attached to it in all possible situations (e.g. road traffic) and, in the event of the e-fix wheels failing to work, are able to brake the wheelchair and stop safely.

A one-to-one instruction session on handling and operating the device is included in the scope of delivery. Please contact your specialist dealer or Alber GmbH 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-fix, please contact your specialist dealer for advice.
In the event of technical faults, please contact your specialist dealer or the Alber Service Centre, telephone 0800 9096 250 (toll-free; only applies within the Federal Republic of Germany).

When operating the e-fix, observe the specifications of the wheelchair manufacturer (e.g. maximum slope, air pressure of front wheels, maximum speed, etc.), and strictly adhere to the operating instructions for the wheelchair. Never exceed any of the specified limit values.
We recommend refraining from trips in locations that are exposed to strong electric fields.
In rare cases, the operation of the e-fix may interfere with other electrical devices such as anti-shoplifting barriers in department stores.
You must not use the e-fix on escalators or moving walkways.
If carrying out sporting activities in the wheelchair, such as lifting weights or similar tasks, the wheels of the e-fix must be shut down.
Similarly, combining the e-fix with accessories that have not been approved by Alber is also prohibited.

**It is prohibited to start up the e-fix before being instructed in how to use it.
Contact your authorised specialist dealer or Alber agent for this instruction.
Starting up the e-fix before receiving instruction is contrary to the intended use and will, among other things, invalidate the warranty. Any use contrary to the intended use involves a risk of injury.**

1.3 Proper use of the e-fix

Wheelchairs that are fitted with e-fix wheels are designed exclusively for transporting persons with a walking disability. It must only be attached to and operated with wheelchairs that are listed in Alber's mounting database. The e-fix must be used, transported, maintained and serviced as described in this operating manual.

1.4 Handling instructions

Do not attach any parts other than the accessories that have been approved for use by Alber. Similarly, the e-fix and its accessories must not be technically modified.
The e-fix must only be operated under the following conditions:

- Full compliance with the information, instructions and recommendations contained in this operating manual
- Full compliance with the information, instructions and recommendations contained in the operating manual for the wheelchair
- The e-fix is only operated by a person who has been instructed in its use
- No technical modifications have been made to the e-fix and the wheelchair by the user or by any third party

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

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

The use of the e-fix for any of the following purposes shall be deemed to be misuse by Alber GmbH:
- Use of the device that contravenes the instructions and recommendations in this operating manual
- Exceeding the technical limits laid down in this operating manual
- Technical modifications to the device
- Attachment and/or use of parts and accessories that have not been supplied or approved by Alber GmbH.

Damage resulting from
- using the device improperly
- use by a person who has not been instructed in the handling of the device
- use that contravenes the instructions and recommendations in this operating manual
- exceeding the technical limits laid down in this operating manual

shall not be deemed by Alber GmbH as part of the company's liability.

Alber GmbH excludes any liability for damage caused by use contrary to the intended purpose of the e-fix and its accessory parts, by handling of the e-fix and its accessory parts by a person who has not been instructed, by use of the e-fix and its accessory parts contrary to the instructions and specifically the safety and hazard information in this operating manual, or by exceeding the technical limits defined in this operating manual on the part of the user or third parties.

Before starting up the e-fix, carefully read all safety and hazard information contained in the individual chapters of this operating manual.

1.5 Signs and symbols

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

Indicates tips and special information.

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

Observe these indications and warnings at all times to avoid injury to people and damage to the product.
Information in this operating manual, such as “in front”, “behind”, “left”, right”, “forwards”, “backwards” etc. refers to the position **from the point of view of the wheelchair user**.

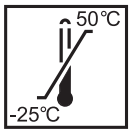
The symbols used on the labels and in some parts of this operating manual are explained in the following.

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

Medical device

For information on how to dispose of the e-fix and its components, please see chapter 7.5.

Protect the device from moisture.



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

Observe the operating manual!
This operating manual contains instructions, information and warnings relating to operation of the e-fix and to charging the batteries. They are to be read and be given due consideration prior to starting up the e-fix or charging it for the first time.

Maximum occupant mass (120 kg / 264,6 lb).

Specification of the manufacturing date on the system label (see chapter 13).

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

Warning against magnetic fields and forces.

1.6 Permissible conditions of use/locations of operation

- Observe the permissible conditions of use of the wheelchair to which the e-fix wheels are attached (see wheelchair operating manual).
- In addition to observing the information provided about the e-fix, it is also imperative to observe the information provided by the wheelchair manufacturer (e.g. maximum gradeability, maximum permissible height of obstacles, maximum user weight, maximum speed, etc.). The lowest values always apply.
- Any limits regarding the operation of the wheelchair (e.g. maximum gradeability, maximum permissible height of obstacles, maximum user weight etc.) must also be observed when using the e-fix.
- The e-fix must only be used at temperatures between -25 °C and +50 °C. Therefore, do not expose the e-fix to any heat sources (such as intense sunlight) as this may cause surfaces to reach high temperatures.
- Avoid using the wheelchair on soft ground (e.g. loose chipping, sand, mud, snow, ice or deep puddles).
- Take particular care to observe the safety instructions and hazard information provided in chapter 3.

When not in use, do not expose the e-fix to strong sunlight for long periods of time. This could cause the motor to heat up and, in extreme cases, prevent it from operating at full power. Plastic parts also age quicker under intense sunlight.

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

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

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

1.7 Standard scope of delivery

- Two e-fix wheels
- Control unit including handrest and key for immobiliser
- Control unit bracket
- Battery pack
- Charger
- This operating manual

The wheelchair must be fitted with special brackets in order to attach the e-fix wheels. If this is not the case, please contact your specialist dealer or an Alber agent.

1.8 Optional accessories

Please refer to the Alber homepage for information about the available accessories.
We recommend using only original accessories supplied by Alber.
The e-fix is designed in such a way that it performs best when using Alber original accessories. Alber GmbH shall not be liable for damage to the product or accidents (e.g. fires) caused by a malfunction of non-original accessories or spare parts. The warranty does not cover repairs for damage caused by malfunction of non-original accessories. Alber GmbH will, however, carry out such repairs for you at a charge.

1.9 The main elements at a glance
(please fold out overview drawing in document cover)

Wheelchair and e-fix components

Bracket on the wheelchair	1
Wheel retainer	2
Wheel socket	3
e-fix wheel	4
Viewing panel on the e-fix wheel	5
Release mechanism	6
Coupling ring	7
Wheel plug	8
Stub axle	9
Battery pack	10
Interface	11
Control unit	20

Battery pack and interface

Battery pack	10
Interface	11
Battery pack bag	12
Velcro fastener for battery pack bag	13
Opening for cable holder	14
Charger socket	15
Socket on interface (to control unit)	16
Hinged cover	17
Fuses 3A	18
Fuses 25A	19

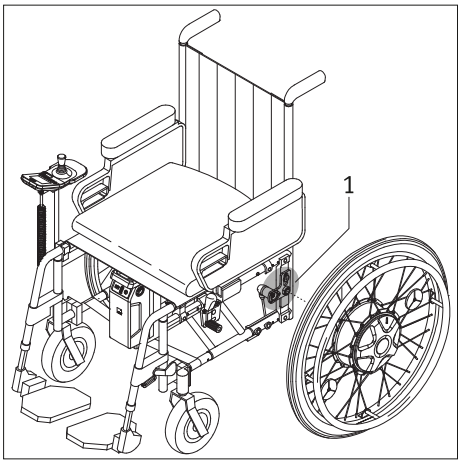
Control unit and its holder

Control unit	20
Joystick	21
On/off button close range lighting	22
On/off button menu function	23
On/off button warning signal	24
Display	25
On/off button entire system	26
Immobiliser	27
Lights (on the underside of the control unit)	28
Rotary switch for preselecting the speed	29
Plug on the control unit (to interface)	30
Immobiliser key	31
Guide rail	32
Sliding part	33
Locking lever	34
Holder on the wheelchair	35

Charger

Charger	40
Mains plug	41
Charging plug	42
LED display	43

The diagrams contained in this operating manual may deviate from the product supplied to you.



2. Starting up

On delivery, your e-fix is ready for use with all standard operating components and any optional accessories you may have ordered.

There are brackets [1] on both sides of the wheelchair with wheel retainers from which the two wheels can be removed and re-inserted for transport purposes (see chapter 2). Usually, both wheels will however remain on the wheelchair at all times.

The e-fix control unit should have already been set up by your specialist dealer to your local language. If this is not the case, you will be prompted to set the local language when you first start up the device (see chapter 5.4).

On delivery of your e-fix, your specialist dealer will show you how to operate the system and any accessories you have ordered. You will also be given this operating manual which, in addition to the technical information, also contains important driving instructions.

The brackets [1] must be attached to the wheelchair by Alber or its authorised specialist dealers.

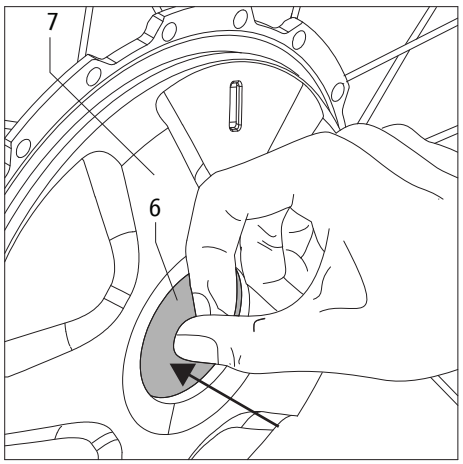
Regularly check the brackets [1] to ensure that they are firmly secured to the wheelchair.
In addition, regularly check whether the wheel retainers [2] and the torque plugs [3] are still firmly screwed onto the brackets [1].
If a screw connection has become loose, contact your authorised specialist dealer to have it retightened.

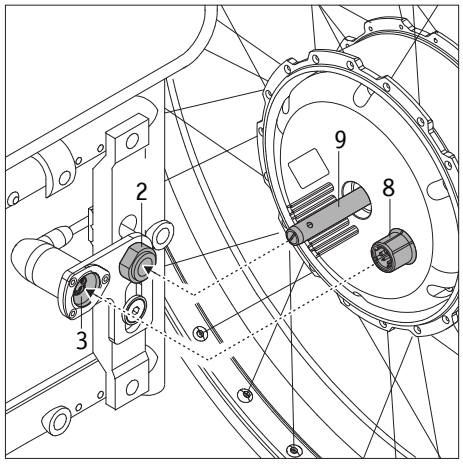
The brakes of your wheelchair must be adjusted to the two e-fix wheels. It is not permitted to travel without brakes or with brakes that have not been adjusted to the e-fix eco wheels.

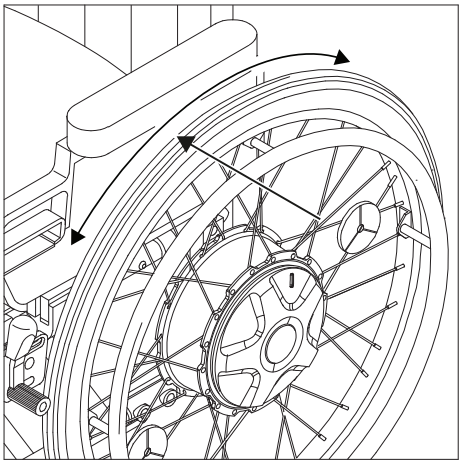
With some wheelchair models it may be possible that their attached parking brakes cannot be adjusted to e-fix wheels, especially with 14" variant. In such cases, it is therefore not possible to lock the wheels.
It should be noted that the electromagnetic brakes built into the e-fix wheels are only effective when the wheels have been engaged (see chapter 2.6.3). Only in this operating mode the wheelchair is held and secured against rolling away.
Therefore, if the parking brakes are not present or not functional, the wheels may only be disengaged (see chapter 2.6.2) in an absolute emergency situation, for example if the wheelchair comes to rest on the tracks of a railroad crossing.
If the wheels are disengaged on a system on which the parking brakes are not present or are inoperative an assistant person should be consulted, who is able to secure the wheelchair against unintentional rolling away.

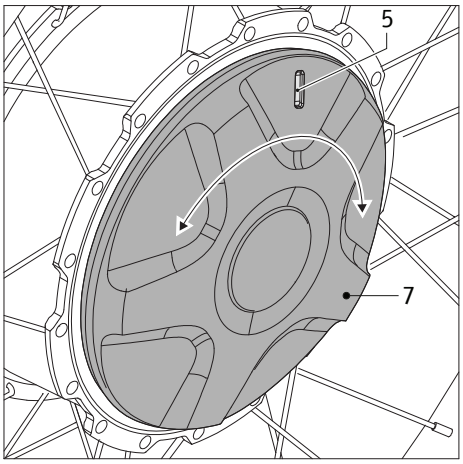
The e-fix is quickly brought to a standstill in the event of a system failure or other serious errors in the system, as this is the safe state in accordance with the standard. The wheelchair user must be able, both physically and in terms of his reaction time, to counteract the braking acceleration forces that occur in this regard. If the wheelchair user is not able to do this, straps must be worn for trips with the e-fix.

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









2.1 Installing the wheels

As described at the beginning, the two e-fix wheels [4] should remain on the wheelchair at all times. However, if they have been removed, you must proceed as follows when you re-attach them (with the help of an attendant if necessary):

- If you have not already done so, switch off the system at the control unit (see chapter 5.2.2).
- Ensure that the wheel is engaged (see also the bottom left picture and the adjacent explanations).
- Press the release mechanism [6] in the centre of the wheel hub (**the coupling ring [7] must not, under any circumstances, be turned at the same time**) and, at the same time, push
  - the stub axle [9] of the e-fix wheel into the wheel retainer [2] and
  - the wheel plug [8] of the e-fix wheel into the wheel plug socket [3].

The coupling ring [7] must not, under any circumstances, be turned while pressing the release mechanism [6] as this can cause damage to the wheel. It is then no longer possible to remove the wheel.

The e-fix wheel must be engaged in order to attach it to the wheelchair.

- Check whether the e-fix wheel can be pulled out of the wheel retainer [2] without pressing the release mechanism [6]. If so, the e-fix wheel is not sitting correctly in the wheel retainer [2] and needs to be inserted again as described above.
- Attach the second e-fix wheel on the other side of the wheelchair.

- Check the colour displayed in the viewing panel [5] of the e-fix wheel. The colours green or red indicate the respective set operating mode. The following indications mean:
  - green: The wheel is engaged; motorised operation is active.
  - red: The wheel is disengaged; motorised operation is not possible. The wheel must be moved manually.
- For more details regarding the operating modes, see subsequent chapters.
- To change the operating mode you need to rotate the coupling ring [7] by about 40 degrees around its axis until it stops.

In these few steps, you have attached the e-fix wheels to your wheelchair. To start motorised travel you need to select the "green" operating mode on the e-fix wheel and then switch on the system using the control unit (see chapter 5.2.1).

The system needs to be switched off before attaching the e-fix wheels to the wheelchair.

It must not be possible to remove the e-fix wheels from the wheel retainer [2] without pressing the release mechanism [6]. Travel is only permitted with e-fix wheels that are correctly engaged in the wheel retainer [2].

Before every trip, check that your wheelchair parking brakes are working correctly. These need to be correctly adjusted to the e-fix wheels and be able to prevent the wheelchair inadvertently rolling away at any time.

2.2 Switching on the system

If the two e-fix wheels, as described in chapter 2.1, have been correctly attached to your wheelchair and are engaged, you can now switch on the system using the control unit [20] (see chapter 5.2.1) and start using your wheelchair.

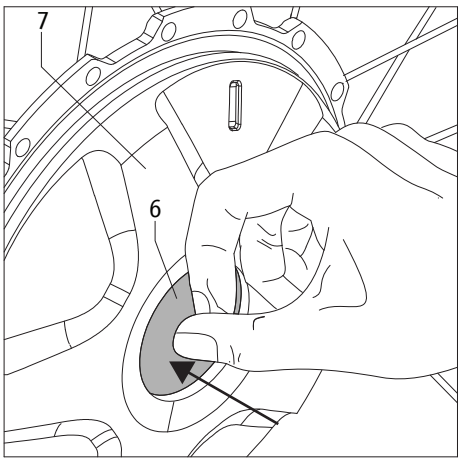
If you are not yet familiar with the e-fix and its travel characteristics you should start by reducing the maximum speed to a minimum using the rotary switch [29] (see chapter 5.2.6).

When travelling with the e-fix you must observe the safety instructions and hazard information in chapter 3.

When starting up the system for the first time, the language selection menu (see chapter 5.4) will appear when you switch on the control unit. You can set your desired language in this menu.

2.3 Switching off the system

Once you have completed your trip and will not be using your wheelchair for a long period of time, you should always shut down the e-fix. Firstly, this saves energy and secondly, the e-fix is not inadvertently deployed by accidentally touching the joystick. Read more about this in chapter 5.2.2



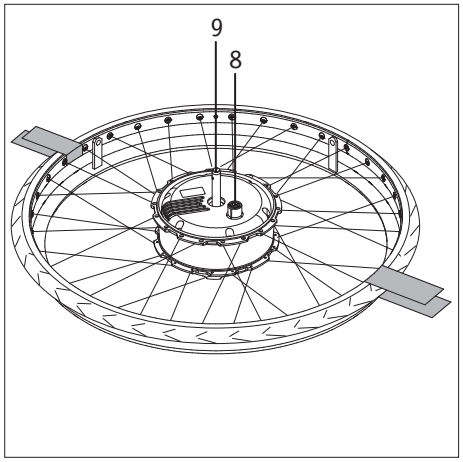
2.4 Removing the wheels

Usually, both e-fix wheels will remain on your wheelchair at all times. If, for example, they are removed for transport purposes, this must be done as follows (with the help of an attendant if necessary):

- If you have not already done so, switch off the control unit (see chapter 5.2.2).
- Ensure that the wheel is engaged (see chapter 2.1).
- **If using Alber anti-tippers:**
  lift up your wheelchair as described in Appendix A of this operating manual and push down the anti-tippers with your foot.
- If the wheelchair is on the anti-tippers:
  press the release mechanism [6] in the centre of the wheel hub (**the coupling ring [7] must not, under any circumstances, be turned at the same time**) and pull the e-fix wheel carefully from the wheelchair.
- Once both wheels have been removed you can return the anti-tippers to their original position, as described in Appendix A of this operating manual.
- **Without Alber anti-tippers:**
  lift your wheelchair by its push handles.
- Press the release mechanism [6] in the centre of the wheel hub (**the coupling ring [7] must not, under any circumstances, be turned at the same time**) and pull the e-fix wheel carefully from the wheelchair.
- Proceed in accordance with the instructions provided by the manufacturer of your anti-tippers.

The coupling ring [7] must not, under any circumstances, be turned while pressing the release mechanism [6] as this can cause damage to the wheel. It is then no longer possible to remove the wheel.

The e-fix wheel must be engaged in order to remove it from the wheelchair.



2.5 Transporting and storing the wheels as vehicle luggage

- The wheels should generally remain on the wheelchair and only be removed if absolutely necessary.
- Before removing the e-fix wheels, the control unit must be switched off.
- When setting the e-fix wheels down or aside, take care of the stub axle [9] and the torque plug [8] on the rear of the wheel. Neither part should be damaged.
- The wheels should be stored or transported on their front or be upright.
- When transporting the wheelchair, follow the instructions in the operating manual for the wheelchair. You might need to secure the wheelchair or certain components of it.
- During transport, the e-fix wheels must always be secured to prevent them flying around in an uncontrolled manner to ensure that they do not pose a risk to passengers in the event of a braking manoeuvre.
- Please check whether there are specific regulations regarding the securing of wheelchairs and wheels for transport in your jurisdiction; if so, always adhere to these regulations.
- Alber GmbH and its representatives accept no liability for any damage resulting from failure to comply with these instructions.
- If you wish to transport your wheelchair in its entirety without dismantling the wheels, the wheelchair must be protected in accordance with the guidelines and specifications of the wheelchair manufacturer.

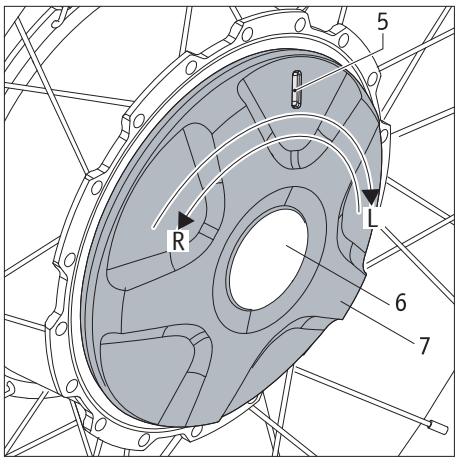
For information about using the wheelchair as a vehicle seat in combination with the e-fix wheels, see chapter 15

2.6 Additional instructions for travel mode

2.6.1 Travelling using the manual wheelchair wheels

Chapter 2 has already explained how the e-fix wheels are attached to your wheelchair and removed from it. You can therefore choose to continue to use the conventional, manually operated wheels of your wheelchair in addition to the electrically operated e-fix wheels.

The diameter of the stub axle of the e-fix wheels is 12.7 mm (1/2"). Manual wheelchair wheels must not be used with other stub axle diameters.



2.6.2 Travelling using the e-fix wheels in push mode

In addition to motorised operation, the e-fix wheels can also be manually operated, for example for push mode. This should be done by an attendant.

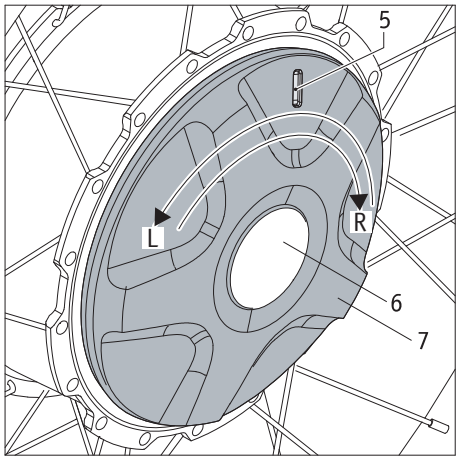
Push mode is activated as follows:

- Switch off the system at the control unit (see chapter 5.2.2).
- Turn the coupling ring [7] on the left-hand wheel towards the rear (L), turn the right-hand wheel towards the front (R) to the stop; **the release mechanism [6] must not, under any circumstances, be pressed in the process.** A red marker is now visible in the viewing panel [5].
- You are now in “push mode" and the wheelchair can be operated manually.
- If you mistakenly try to control the e-fix wheels in manual mode using the control unit, an error message will be shown in the control unit display (see chapter 6).

When at a standstill:
Ensure that you activate the parking brakes that are fitted to your wheelchair and adjusted to the e-fix wheels. This prevents the wheelchair inadvertently rolling away.

In push mode:
Using the e-fix wheels in combination with a towing device, for example, is not permitted. Use the manual wheels of your wheelchair for this purpose.

For reasons of safety, the drive wheels must only be disengaged from motorised mode and set to push mode while stationary and on a flat surface. The drive wheel must be load-free when being disengaged. To do so, switch off the e-fix at the control unit. Actuating the clutch with a load or while travelling can damage the internal mechanics and is therefore not covered by the warranty.
Disengaging on an incline can lead to a dangerous situation as the e-fix either switches directly or subsequently to freewheeling mode and, in the worst case, could therefore start moving in an uncontrolled manner, i.e. it could rotate and/or roll downhill. Disengagement should only be performed on an incline in case of emergency and only if an accompanying person is present and capable of securing the wheelchair manually and by using the wheelchair parking brakes.



2.6.3 Travelling using the e-fix wheels in motorised mode

The wheels of the e-fix must be engaged for motorised operation.

- Turn the coupling ring [7] on the left-hand wheel towards the front (L), turn the right-hand wheel towards the rear (R) to the stop; **the release mechanism [6] must not, under any circumstances, be pressed in the process.** A green mark is now visible in the viewing panel [5].
- Switch on the system (see chapter 5.2.1). The e-fix is now again ready for motorised operation.

When travelling downhill, power is fed back into the battery pack from the drive wheels to increase the range. If you are travelling downhill with a fully charged or almost fully charged battery pack and the battery pack cannot take up any more power, this is indicated by a warning in the control unit display (see table in chapter 6). If power continues to be fed into the battery pack, the electronic system automatically reduces the speed by 50 percent.
If power consumption increases (if, for example you are travelling on level ground or uphill), the e-fix can accelerate to the selected maximum speed.
As soon as the charging process has finished, this behaviour can also occur for a short time when travelling on level ground.

The e-fix cannot be pushed manually in motorised operation.

The e-fix must only be used at temperatures between -25 °C and +50 °C. Therefore, do not expose the e-fix to any heat sources (such as intense sunlight) as this may cause surfaces to reach high temperatures.

When not in use, do not expose the e-fix to strong sunlight for long periods of time. This could cause the motor to heat up and, in extreme cases, prevent it from operating at full power. Plastic parts also age quicker under intense sunlight.

2.6.4 Range

For every e-fix user, the range of the system is one of the areas of greatest interest. In general, it is possible to say that this is roughly 15 km. These are ideal values and relate to flat, paved terrain. Deviations may occur due to topographical conditions, the ambient temperature, the road surface, the tyre pressure of the front wheels, the frame geometry, the weight of the wheelchair, the maximum occupant mass and the size of the wheels (22 or 24 inch).

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

3.1 General instructions

Prior to commencing your trip, check that the parking brakes are fitted to your wheelchair and that they have been adjusted to the e-fix wheels. In doing so, you prevent your wheelchair from rolling away inadvertently in push mode. If there are no parking brakes adjusted to the e-fix wheels fitted to your wheelchair, your wheelchair must not be used. In order to fit parking brakes and adjust them to the e-fix wheels, please contact your authorised specialist dealer.

The e-fix wheels are controlled via the control unit joystick (see chapter 5.2.3). If the system is switched on, each actuation of the joystick is converted into a travel command. This relates to moving both forwards and backwards as well as accelerating and braking. For this reason, switch off the control unit in the event of a prolonged standstill, in order to prevent the wheelchair rolling away inadvertently due to touching the joystick accidentally.

We recommend that you have a brief user training session when you first receive your e-fix. This will allow you to get used to the drive and everything you can do with it.

3.2 Information about user training

- The safety and well-being of the user is the top priority. To ensure this, it is essential to understand the e-fix's travel characteristics. Your specialist dealer or Alber agent will help you in this regard with a complimentary device training session.
- Observe the information, safety instructions and hazard information provided by your wheelchair manufacturer. This also applies to using the e-fix.
- Start your first driving attempts with caution and start your user training on level ground.
- Take your user training in areas without any obstacles.
- Always adapt your speed to external conditions so that you are able to stop your wheelchair or circumvent any obstacles that may suddenly appear, for example.
- Never immediately push the joystick to its maximum position when starting off. This may result in the wheelchair moving uncontrollably (risk of accident).
- Move the joystick gently and without sudden movements. Avoid suddenly moving the joystick to its maximum position, especially in potentially hazardous situations that you wish to avoid. Brake the e-fix carefully in advance until it stops.
- When the joystick is released, your wheelchair will be braked gently. If you need to brake suddenly (immediate stop) then deflect the joystick briefly in the opposite direction to which you are travelling and then release it.
- Only brake the e-fix using the joystick control unit. In this regard, never grip the tyres or the coupling ring [7] "for support".
- Before using the e-fix to navigate uphill or downhill gradients, you should be able to operate the device safely on level ground.
- Always travel on uphill gradients with a fully charged battery pack.
- You should exercise particular caution when travelling on downhill gradients of any kind.
- If travelling down slopes with a fully charged battery pack at a high speed, this can lead to a reduction in speed or the e-fix being forced to shut down due to overvoltage. For this reason, travel down slopes at a slow speed in such cases. This is advisable in any case, so that you are able to stop the wheelchair or avoid any obstacles that may suddenly appear.
- Never travel across steep slopes or similar conditions. Unintentionally shifting the centre of gravity could result in the wheelchair tipping over on its side.
- When navigating inclined kerbs or in similar circumstances, you may need to countersteer a little. Never travel over minor obstacles such as kerbs by moving parallel to them, move at a right angle to the respective obstacle. This means that both wheels travel over the obstacle at the same time rather than being offset. Use a low speed that is appropriate for the obstacle.
- At regular intervals, check that the front wheels are aligned at right angles to the ground and that they have the correct air pressure. Both factors influence the travelling and braking performance and the range of the e-fix.
- Never travel without anti-tippers, and only remove them in order to navigate major obstacles. It is left to the judgement of the user as to whether to call an attendant for help when there is an increased risk that the wheelchair may tip over.
- When travelling on public roads you must observe the provisions of the road traffic regulations. Your wheelchair is equipped with the additional equipment specified in this manual.

Exercise caution when travelling downhill with a fully charged battery pack.
Travelling at high speeds with a fully charged battery pack may lead to a reduction in speed or the system automatically switching off. Therefore, reduce your speed.

As far as possible, always use reverse mode when negotiating obstacles (e.g. kerbs). Please refer to the wheelchair operating manual for the maximum permitted obstacle height.
Attention! When navigating obstacles in reverse, the Alber anti-tippers cannot be guaranteed to be fully functional. For this reason, travel slowly and carefully in reverse until the wheels of your e-fix touch the obstacle. Once you reach this point, negotiate the obstacle carefully. It is up to you to decide whether to enlist the help of another person.

In the event of a problem or error message, immediately contact your specialist dealer.

Observe the following safety instructions and hazard information.

3.3 Safety instructions

- The system must be switched off at the control unit before the e-fix wheels are fitted to the wheelchair or removed from it. Similarly, the system must be switched off before starting work on the wheelchair.
- For safety reasons, you must activate the parking brakes of your wheelchair when you stop, especially on uphill and downhill slopes, in order to prevent the wheelchair from rolling away inadvertently.
- In the (unlikely) event of the battery pack overheating or catching on fire, you must ensure that the battery pack does not come into contact with water or other liquids. The only suitable extinguishing agent recommended by the battery manufacturers is sand.

Before beginning your trip:

- The e-fix may only be attached to push rim wheelchairs that have been approved by Alber GmbH for this device.
- The bracket holding the e-fix in place may only be installed and modified by Alber GmbH or an Alber authorised specialist dealer.
- When using the e-fix, always strictly adhere to the operating manual for the wheelchair.
- Using the wheelchair without a pair of anti-tippers attached is not permitted.
- Attach the original anti-tippers of the wheelchair manufacturer or the optional Alber anti-tippers to your wheelchair.
- Before each trip, check the condition of the e-fix wheels. If the tyres have reached their wear limit (if you can no longer see the tread), the e-fix must no longer be used.
- Prior to each use, check that your wheelchair parking brakes are working correctly. It is forbidden to use the wheelchair without working parking brakes adjusted to the e-fix wheels.
- Check the air pressure of the e-fix wheels at regular intervals. The table in chapter 12 contains information about the correct air pressure. This information can also be found on the outside of the tyres. Please check the air pressure of the front wheels in accordance with the instructions and specifications of the wheelchair manufacturer. Insufficient air pressure can severely affect the handling and range of the wheelchair.
- Both e-fix wheels should always have the same air pressure.
- Both front wheels of the wheelchair should always have the same air pressure.
- Before every trip, check that the e-fix wheels are seated correctly in the wheel retainer [2] of the two brackets [1].
- The e-fix must not be used in combination with a wheelchair towing device or hand bike, or other pulling devices. In such cases, use your manual wheelchair wheels instead of the e-fix wheels.

Always observe the following rules when travelling using the e-fix:

- Before using the e-fix to navigate uphill or downhill gradients, you should be able to operate the device safely on level ground.
- The maximum permissible slope specified by the wheelchair manufacturer must not be exceeded.
- Be very careful when approaching steps and drops.
- If the e-fix is switched on, each touch of the joystick is converted into a travel command. When stopping or waiting in potentially hazardous areas (e.g. while waiting at a traffic light, on uphill and downhill slopes or ramps of any type), do not touch the control unit and secure your wheelchair using its parking brakes.
- Never reach into the wheel when the e-fix is switched on.
- Do not insert or throw objects of any kind into an e-fix wheel, regardless of whether or not it is switched on.
- Never attach objects of any kind to the e-fix wheels. This could cause damage.
- When travelling on pavements, keep a safe distance (preferably the width of a wheelchair) from the kerb.
- Avoid using the wheelchair on soft ground (e.g. loose chipping, sand, mud, snow, ice or deep puddles).
- Never leave the e-fix unattended, even if it is switched off.
- The e-fix may be adversely affected by strong electromagnetic fields.

- Under certain circumstances, the e-fix may interfere with other electrical equipment such as anti-shoplifting barriers in department stores.
- You must not use the e-fix on escalators or moving walkways.
- When moving at maximum speed, do not suddenly change your direction of travel to the left or right, as this could cause the wheelchair to tip sideways.
- Reduce your speed when turning a corner.
- If you intend to stop in your wheelchair on an uphill or downhill gradient, your wheelchair must be parked across this slope and the parking brakes activated.
- After every trip or when your wheelchair is idle, activate the parking brakes to prevent the wheelchair from rolling away inadvertently.
- Never navigate across downhill slopes.
- Never reach into the front wheels of your wheelchair or the spokes of the e-fix wheels when travelling.
- Apply the e-fix brake carefully and adjust your speed accordingly (i.e. not suddenly).
- When travelling in a vehicle, always sit in the vehicle's installed seats with the appropriate restraint systems. Failure to comply with this guideline may result in injury to you and your co-passengers in case of an accident.
- When travelling in vehicles, secure your wheelchair and the e-fix wheels according to the currently applicable statutory requirements and legislation.
- When navigating public roads and pavements in the Federal Republic of Germany, the provisions of the German Road Traffic Regulations and the Road Traffic Licensing Regulation are to be observed at all times. In other countries, the locally applicable national provisions are to be observed at all times.
- The e-fix is only intended for transporting persons with restricted mobility and must not be used for any other purpose, e.g. for transporting goods or as a plaything for children.
- The operation of the e-fix is prohibited in the vicinity of strong magnetic fields, such as those induced by holding solenoids, transformers, tomographs, etc.
- 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. Each powered wheelchair can resist EMI up to certain intensity.
- Avoid using the e-fix in adverse conditions, such as storms, hail and high undergrowth.

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

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

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

After travelling with the e-fix, note the following:
- Switch off the e-fix when not in use to prevent inadvertently triggering travel impulses when the joystick is touched and to prevent the self-discharge of the battery pack.
- Whenever the wheelchair is at a standstill, apply the parking brakes.
- If possible, recharge the battery pack of your e-fix after each trip.

3.4 Obstacles
- As far as possible, always use reverse mode when negotiating obstacles (e.g. kerbs).
  Please refer to the wheelchair operating manual for the maximum permitted obstacle height.
- Attention! When navigating obstacles in reverse, the Alber anti-tippers cannot be guaranteed to be fully functional. For this reason, travel slowly and carefully in reverse until the e-fix wheels touch the obstacle. Once you reach this point, negotiate the obstacle carefully. It is up to you to decide whether to enlist the help of another person.

3.5 Hazardous areas and hazardous situations

- The wheelchair user must decide in each case whether it is safe to navigate the intended route based on factors such as their skill level and their physical strength.
- Before undertaking a trip, check the e-fix wheels for damage and proper inflation. Also, check the charge status of the battery pack and that the warning signal on the control unit is working correctly.
- These safety checks and the personal experience of the wheelchair user are of particular importance in or near the following hazardous areas, the navigation of which is left to the judgement and risk of the e-fix user:
  - Quay walls, berths and marinas, paths and areas near water, bridges and dykes without railings
  - Narrow footpaths, gradients (e.g. ramps and driveways), narrow paths along slopes, mountain paths
  – Narrow and/or steep/inclined paths along main and side roads or near precipices
  - Paths covered with leaves, snow or ice
  - Ramps and lifting equipment on vehicles
  - Paved paths/roads

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

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

Proceed with special caution when driving over ramps or lifting platforms of vehicles. Before lifting or lowering the wheelchair on the ramp or lifting platform, park the e-fix at a safe distance from the kerb and switch it off. The parking brakes on the wheelchair must also be applied. This prevents inadvertent movement or travel commands.

Never use your wheelchair directly at the edge or close to the edge of a ramp or lifting platform, instead leave a sufficient distance.

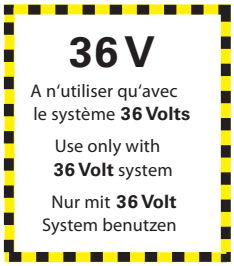
If the ground is wet, tyre grip may be poor, leading to a risk of slipping. Adapt your user behaviour accordingly and never travel with worn tyres.

Please note that when travelling downhill the brake path of the e-fix may be significantly longer than on level ground depending on the speed and gradient. Therefore, adjust your speed accordingly.

When navigating uphill gradients, downhill gradients or steep ramps, the backrest of the wheelchair (if it is adjustable/foldable backwards) must always be in the most upright position to prevent the system from tipping onto the anti-tippers.

When navigating paved paths/roads, it is necessary to exercise greater caution, as the castors of the wheelchair could get jammed in the grooves on these surfaces.

In case of fire or smoke, wheelchair occupants are at particular risk of death or serious injury, when they are not able to move away from the source of fire or smoke. Lighted matches, lighter and cigarettes can cause an open flame in the wheelchair surroundings or on clothes. Avoid using or storing the wheelchair near open flames or combustible products and do not smoke while using the wheelchair.

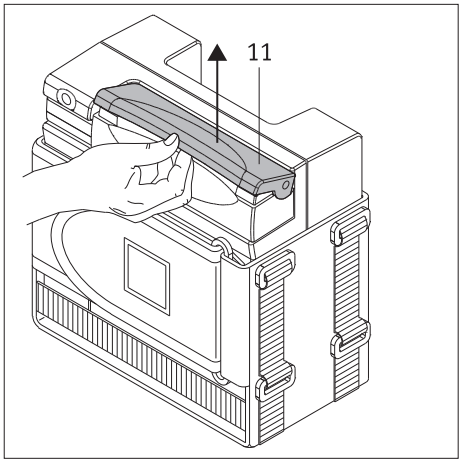


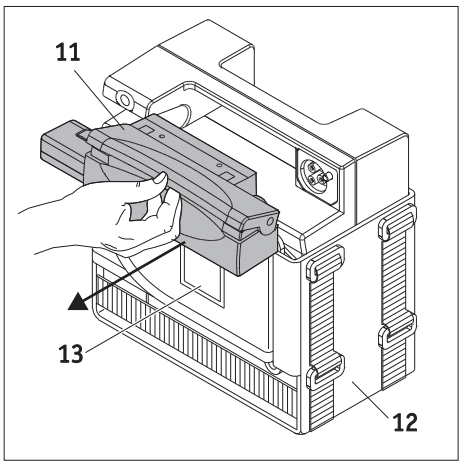
36 V

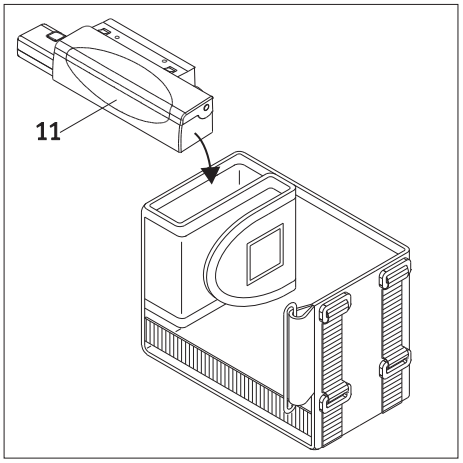
4. Battery pack

Before starting up the e-fix and before charging the battery pack, read and observe the general information and instructions and the safety instructions and precautions in chapters 4.7 to 4.11. Failure to comply with the safety precautions and instructions may damage the product or result in electric shock, fire and/or serious injuries.
Alber GmbH cannot be held liable for damage caused by non-compliance with the general information and safety instructions.

Use only the 36 volt battery pack with the 36 volt systems e-fix E34z or e-fix eco E34.



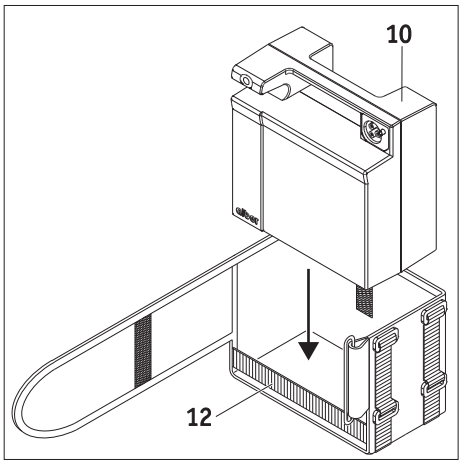


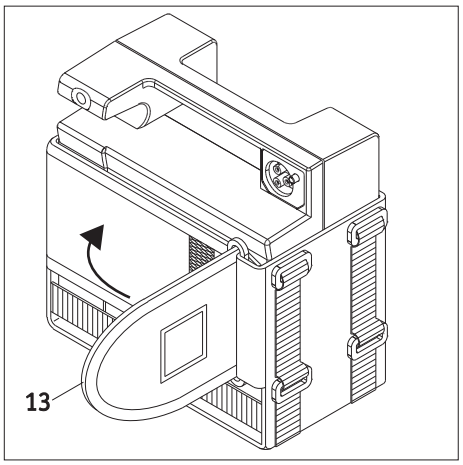


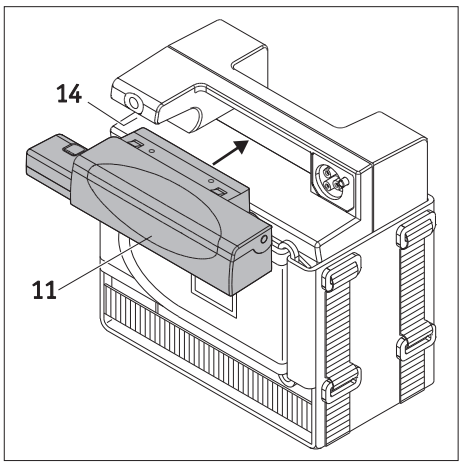
4.1 Removing the battery pack

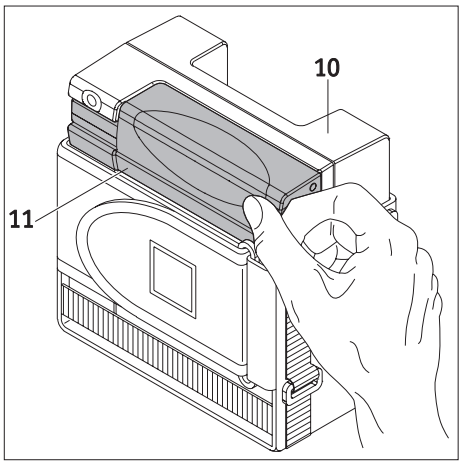
In general, the battery pack [10] remains on your wheelchair at all times. If it does need to be removed (e.g. for transport purposes), please proceed as follows:

- Switch off the system at the control unit (see chapter 5.2.2)
- Remove the interface [11] from the battery pack as shown in the adjacent diagrams.
- Open the Velcro fastener [13] on the battery pack bag [12] fully and remove the battery pack.
- Put the battery pack [10] in a safe place.
- Fold the Velcro fastener [13] as shown in the adjacent drawing and put the interface [11] in it.







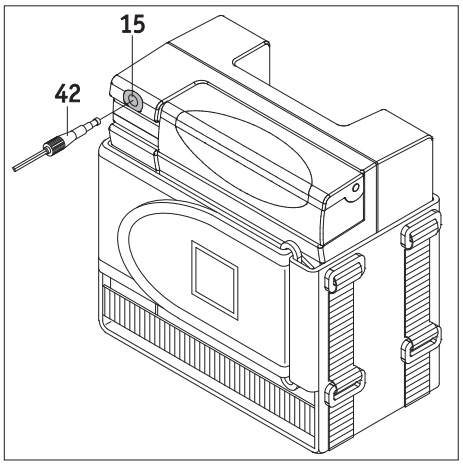


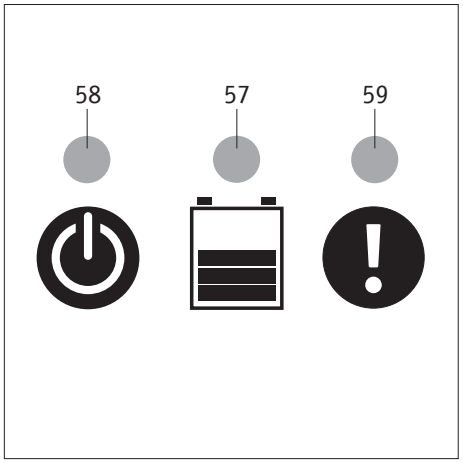
4.2 Installing the battery pack

If the battery pack has been removed from the wheelchair, you have to insert it back into the battery pack bag [12] on the wheelchair before starting up the e-fix.

- Put the battery pack [10] in the battery pack bag [12] as shown in the diagram (socket of the interface facing forwards).
- Seal the battery pack bag [12] with the Velcro fastener [13]. Ensure that the Velcro strap is as close as possible to the housing of the battery pack [10].
- Insert the interface [11] into the battery pack as shown in the drawing. In doing so, ensure that the cables are inside the opening [14].
- Press the interface [11] firmly against the housing of the battery pack [10]. The locking mechanism of the interface must lock into place in the battery pack in the process!

Do not smoke when removing or attaching the battery pack! Burning cigarettes could accidentally fall into the battery pack and possibly set it on fire. Also do not smoke while using the wheelchair.





4.3 Charging the battery pack

The battery pack for your e-fix should be recharged after any extensive use of your e-fix. The battery pack can remain on the wheelchair for charging, or be removed.

- Switch off the system at the control unit (see chapter 5.2.2).
- Secure the wheelchair against inadvertently rolling away using the parking brakes.
- Insert the charger plug [42] into the charger socket [15].
- Connect the charger to a socket.
- Charging commences. This is what indicators on the charger mean:
  - LED lights up red [59]: The battery is deep-discharged or connected with reversed polarity. Contact your competent service partner.
- - LED lights up yellow [58]: The charger is ready for use.
  - LED flashes green [57]: Charging is in progress.
  - LED lights up green [57]: Charging is complete.
- If charging is complete, you must first disconnect the charger from the mains socket. Then unplug the charger plug [42] from the charger socket [15].

To charge the battery pack, you must only use the charger BC3615LA (output voltage 36VDC). A different charger must not be used under any circumstances.

The control unit cannot be switched off during charging.

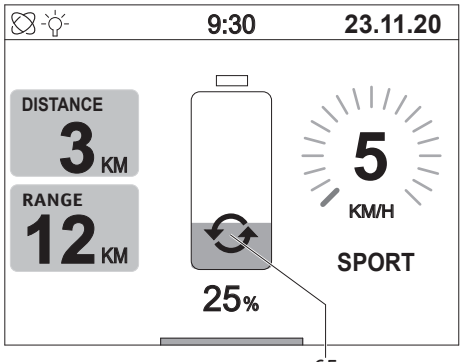
If the battery pack is on the wheelchair for charging, switch off the system before starting the charging process and secure the wheelchair using its parking brakes to prevent it inadvertently rolling away.

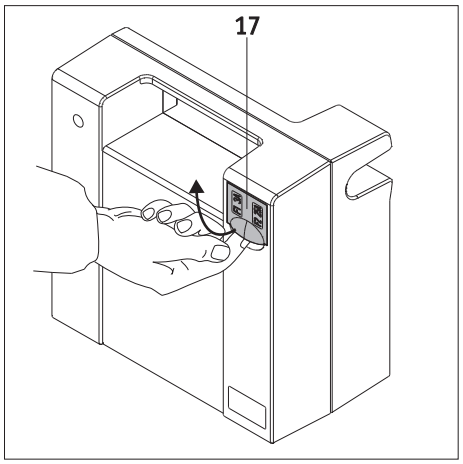
If the e-fix is not used for a longer period of time (more than one day), the battery pack should be disconnected from the charger. Disconnect the charger from the mains socket first before disconnecting it from the battery pack. The battery pack should be fully charged at the start of your trip.

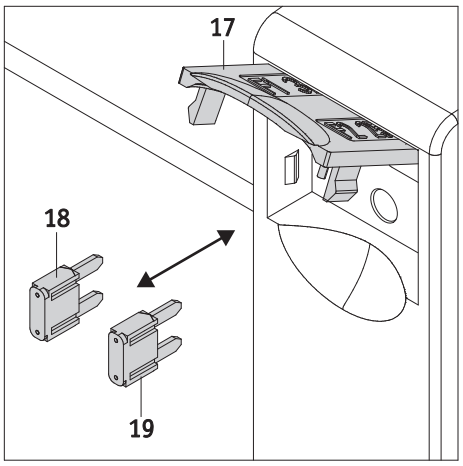
Always charge the battery fully. Only interrupt the charging process in an emergency.

4.4 Capacity display

The battery pack [10] required for operating the e-fix and the interface [11] attached to it is fitted underneath the wheelchair seat as standard. The battery pack capacity available is shown on the control unit display (see diagram in chapter 5.3.2).







4.5 Energy recovery (recuperation)

Energy is always recovered when braking and especially when travelling downhill. If this takes more than two seconds, the control unit display shows the illustrated graphic symbol at position [65].

In extreme cases, for example when travelling downhill with a fully charged battery, increased energy recovery may occur which will be shown as error code B10, B11 or B12 in the control unit display (see also table in chapter 6). In such cases, reduce your speed and, if possible, avoid travelling downhill.

4.6 Changing the fuse in the battery pack

Overloading of individual e-fix components can, in some cases, necessitate a change of fuses on the battery pack. To this end, the battery pack needs to be removed from the wheelchair.

- For safety reasons, remove the interface from the battery pack (see chapter 4.1).
- Remove the battery pack from the battery pack bag (see chapter 4.1).
- Open the cover on the back of the battery pack [17].
- Replace the faulty fuse (3 A [18] or 25 A [19]).
- Close the cover [17].
- Reinsert the battery pack back in the battery pack bag.
- Re-insert the interface [11] in the battery pack (see chapter 4.2).

The fuses are located on the back of the battery pack. You do not need any tools. In the event that one of the fuses is faulty, please use only the supplied replacement fuses or original replacement fuses with the appropriate rating.

Fuses are highly sensitive to electrical disturbances. Multiple fuse changes can indicate a fault with an e-fix component. In such cases, please get in touch with your specialist dealer.
Never use a fuse with a different rating than the one specified and never bypass the faulty fuse. This can destroy the device and, in some cases, result in the e-fix catching fire.

4.7 General information on charging the battery pack

- The batteries for your e-fix are maintenance-free and rechargeable. Their service life depends heavily on the number of charging/discharging cycles. You can prolong the service life of your batteries by means of appropriate care (recharging). The electronics installed in the e-fix permanently monitor the charge status of the battery pack and prevent deep discharge if used properly.
- Avoid completely discharging the battery pack. Recharge the battery pack of the e-fix after each partial discharge, i.e. after every use of the device.
- If the battery is stored for a prolonged period of time (without being charged), this will reduce its capacity. After a few charging/discharging cycles, the batteries will regain their full capacity.
- If the battery pack is handled incorrectly, there is a risk of liquid electrolyte spilling out. This can cause skin injuries and damage to clothing. In the event of contact between the electrolyte and eyes or skin, immediately rinse the affected area with clean water and consult a doctor.
- Do not burn the battery pack or expose it to naked flames. This can cause the battery pack to explode.
- Do not charge the battery pack in the presence or vicinity of flammable liquids or gases.
- Explosive gases can be generated while charging. Keep the wheelchair and charger away from sources of ignition, such as flames and sparks.

- Do not short-circuit the contacts of the battery pack. Short circuits result in extremely high currents, which can cause damage to the battery pack and/or the device.
- Do not carry out the charging process in rooms where moisture may affect the battery pack.
- Carry out the charging process with the wheelchair in a location that has at least twice the space required by the wheelchair itself and that provides sufficient ventilation, in order to avoid the danger of flammable gas accumulating.
- Never charge the battery pack at temperatures under 0 °C or over 40 °C.
- The battery pack of your e-fix can be charged/discharged in any position. It should be charged after every trip if possible. The automatic charging system prevents the battery pack being overcharged. If the e-fix is not used for a longer period of time (more than one day) the charger should not remain on the e-fix the whole time. Disconnect the charger from the mains socket first before disconnecting it from the battery pack.
- At the end of its service life, return the battery pack to Alber or Alber specialist dealers for proper disposal.

4.8 Safety instructions for the charger and the charging process

- To charge the battery pack, you must only use the charger BC3615LA (output voltage 36VDC). A different charger must not be used under any circumstances.
- Switch off the system before starting the charging process. If the battery pack is being charged directly on the wheelchair, the wheelchair should be secured using its parking brakes to prevent it inadvertently rolling away.
- Only use the charger supplied by Alber to charge the battery pack. The charging process ends automatically when the battery pack is fully charged. As such, overcharging is impossible.
- Never user any charger other than the one supplied by Alber.
- The battery pack should be charged after every trip if possible. The automatic charging system prevents the battery pack being overcharged. If the e-fix is not used for a longer period of time (more than one day) the charger should not remain on the e-fix the whole time. Disconnect the charger from the mains socket first before disconnecting it from the battery pack.
- Do not charge any other batteries with the charger. Only charge the e-fix battery pack.
- Do not expose the charger to moisture of any kind (water, rain water, snow, etc.) during charging.
- Be aware of condensation. If the charger is brought from a cold area into a warm room, condensation may occur on and in the device. In this case, refrain from using the charger until all condensation has dissipated. Please note that this may take several hours.
- Never carry out the charging process in rooms where moisture may affect the charger.
- Never carry the charger by its power cable or the charger cables.
- Never tug at the power cable to disconnect the charger from the mains socket.
- Lay the mains cable and charger cable so that no-one can tread on them or trip over them. Do not expose the two cables to any other harmful influences or stresses.
- Do not operate the charger if the power cable, the charger cable or the plugs attached to the cables are damaged. Damaged parts must be replaced immediately by a specialist dealer that has been authorised by Alber.
- Do not use or disassemble the charger if it has received a hard blow or was dropped or damaged in some other way. Take the damaged charger to a specialist dealer that has been authorised by Alber to perform repairs.
- The charger must not be used by young children.
- The charger is designed to operate only with mains alternating voltage of 100 V to 240 V.
- Never attempt to dismantle or modify the charger.
- Do not cover the charger during the charging process or place any objects on top of the device.
- Never subject the cable or plug to any pressure. Overstretching or bending the cable, pinching cables between a wall and a window frame or placing heavy objects on a cable or a plug may result in electric shock or fire.
- Never connect the two terminals of the charger cable to any metal objects.
- Ensure that the mains plug is firmly inserted in the socket.
- Do not touch the mains plug or the charger cable plug with wet hands.
- Do not use the plug of the charger and/or the mains plug if they are wet or dirty. Before plugging them in, clean the plugs using a dry cloth.
- Once the charging process is complete, first disconnect the charger plug from the socket and then disconnect the charging plug from the socket on the battery pack.
- Ensure that no moisture can get into the sockets [29] on the battery after disconnecting the charger.

The charger BC3615LA (output voltage 36VDC) may only be used to charge the battery packs of the e-fix eco and the Esprit. Under no circumstances may other batteries be charged with the charger, especially the batteries of the Alber e-fix E25. These batteries have a voltage of 24 volts; however, the charger BC3615LA has a voltage of 36 volts.

4.9 Safety instructions for the battery pack

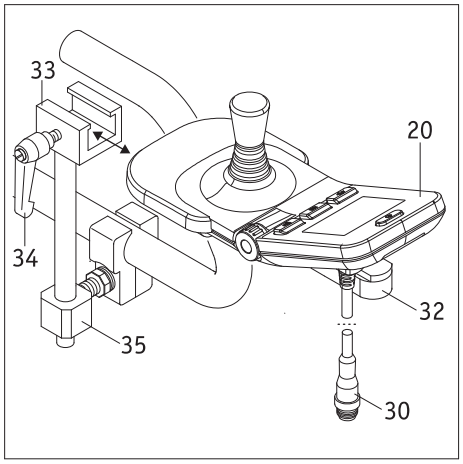
- Before the e-fix is used for the first time, the battery pack should be fully charged.
- The e-fix must only be used at temperatures between -25 °C and + 50 °C.
- Never charge the battery pack at temperatures under 0 °C or over 40 °C.
- The battery pack must not be exposed to heat (e.g. radiators) or fire. External heat exposure can lead to the battery pack exploding.
- Your e-fix consumes energy each time you use it. Therefore, if possible, fully charge the battery pack after every use.
- The battery pack housing must not be opened or taken apart. Improper opening or wilful destruction carries a danger of serious injury. In addition to this, opening the battery will void any warranty claims.
- Never connect the battery pack charger socket [15] to metallic objects, and ensure that the contacts do not come into contact with metallic objects (for example with metal filings).
- If the socket [15] is dirty, clean it with a clean and dry cloth.
- Never immerse the battery pack in water.
- If damaged or defective, the battery pack must be checked. In such cases, contact your specialist dealer to learn about the proper procedure for returns and repairs.
- If the battery pack is defective or damaged, you must not use the e-fix under any circumstances. Contact your specialist dealer about a repair.
- Always ensure that the battery pack is kept clean and dry.

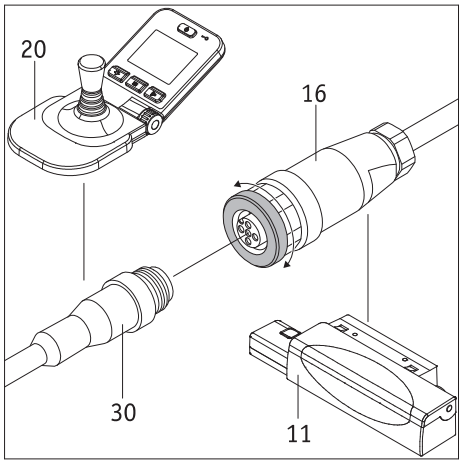
4.10 Storing the battery pack

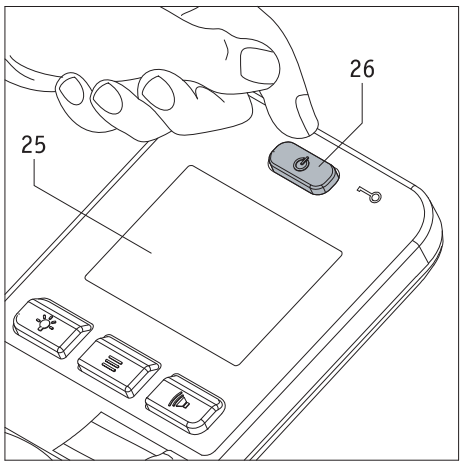
- The service life of a battery pack is partly dependent on its storage location. For this reason, do not leave the battery pack or the e-fix wheels in hot locations for prolonged periods. In particular, use the boot of a car parked in the sun only for transport – never as a storage location.
- Store the battery pack and the e-fix wheels in a cool and dry location where they are safe from damage and unauthorised access.
- To achieve the optimum battery pack service life, it should be stored at a temperature between 10 °C and 23 °C, an air pressure of 500 to 1060 hPa, and a humidity of 10 to 80 percent. The charge status under these conditions should be 100 percent. Under these conditions, the battery pack can be stored for at least 6 months.
- Do not expose the battery pack to moisture of any kind during storage (water, rainwater, snow, etc.).
- Prior to storage, 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 percent.

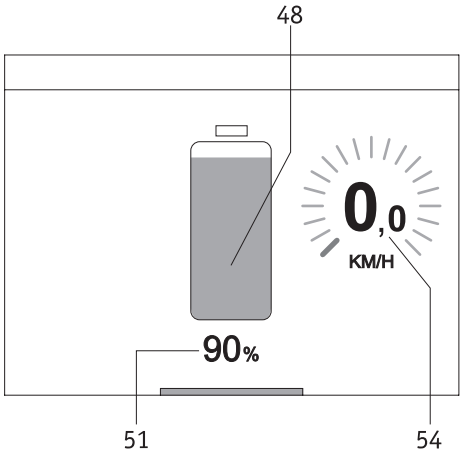
4.11 Information about transporting and shipping the battery pack

- The battery pack of your e-fix is rated as safe as dry cells and is approved for air cargo transport by DOT and IATA.
- As transport regulations may change annually, we strongly recommend that you consult your travel operator, airline or shipping line before you set out on your trip in order to learn about the current applicable regulations.
- Please also note the applicable regulations for transporting batteries in the countries you are visiting.









5. Control unit

Buttons and a joystick on the control unit enable you to activate and deactivate various functions and settings. In this respect, the diagrams of individual display screens shown in the following operating instructions may differ from the actual displays of your control unit.

An audible signal will also sound with various display screens, but only if this function has been activated (see chapter 5.3.7).

5.1 Fitting and removing the control unit for servicing

A holder [35] has been fitted to your wheelchair to secure the control unit.

- Push the guide rail [32] fitted to the underside of the control unit [20] into the sliding part [33].
- Secure the control unit [20] in the sliding part [33] using the locking lever [34].
- Insert the plug [30] of the control unit into the socket [16] of the cable from the interface and screw both parts together.
- The control unit is removed in the reverse sequence.

Before inserting the plug [30] into the socket [16], ensure that both parts are clean and there are no metallic particles on them. If there are any metallic particles, these must be removed with a clean, dry cloth.

5.2 Control unit functions

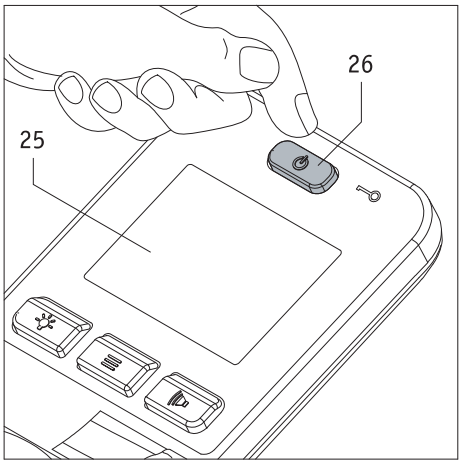
5.2.1 Switching on the system

If the two e-fix wheels have been correctly attached to your wheelchair as described in chapter 2.1, you can now switch on the system using the control unit [20]. **It is imperative that you do not touch the joystick [21] or any other controls of the control unit when switching on the system. If you do, you will get an error message.**

- Press the on/off button [26] briefly. The system is switched on and the e-fix start screen is shown in the display [25] for roughly 3 seconds. The user screen illustrated in the adjacent diagram then appears (see chapter 5.3.1 for the meaning of the symbols). *(The illustrations on the left may vary from the actual display on your control unit, as functions may be activated or deactivated.)*
- If you are not yet familiar with the e-fix and its travel characteristics you should start by reducing the maximum speed to a minimum using the rotary switch [29] (see chapter 5.2.6).
- Using the joystick [21] you can now set the two e-fix wheels in motion. However, make sure you have read the safety instructions and hazard information in chapter 3.
- If the wheels do not move when switched on, the system will automatically switch itself off after 10 minutes. For details, see also chapter 5.5.

If, after switching the system on, you see an entirely different display to the one shown here, there is an error. Chapter 6 contains a list of these with error codes.

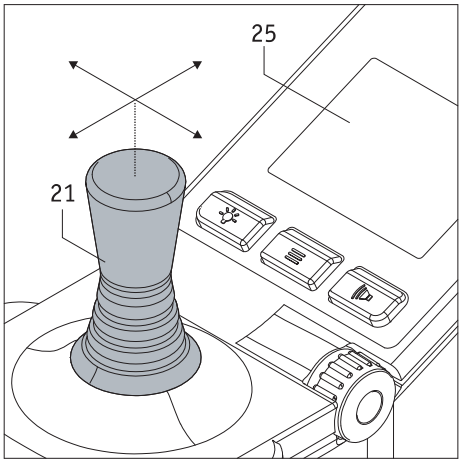
The language selection menu only appears the first time you switch on the control unit (see chapter 5.4). In this menu, you can set the language in which you wish the information in the display to be shown.



5.2.2 Switching off the system

Once you have completed your trip and you will not be using your wheelchair for an extended period of time, you should always switch off the e-fix. Firstly, this saves energy and secondly, the e-fix is not inadvertently deployed by accidentally touching the joystick.

- Press button [26]. The control unit is switched off; the display [25] disappears.
- Apply the parking brakes on your wheelchair to prevent the chair inadvertently rolling away.



5.2.3 Using the joystick to travel

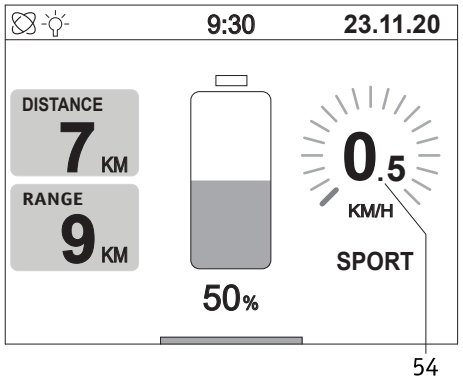
The e-fix is moved using the joystick [21] by means of which the user can determine the speed and the direction of travel.

Even slightly moving the joystick in the desired direction of travel will start travel at low speed. This increases, the further the joystick is deflected. The pre-set maximum speed (see chapter 5.5) is achieved by fully deflecting the joystick. When travelling in reverse, the speed is automatically reduced for safety reasons.

In the display [25], the speed is shown in position [54] as follows:

- the pre-set speed as a green bar chart and briefly as a green number
- current speed when travelling as a white number

When travelling in reverse, 0 km/h is displayed as a white number.

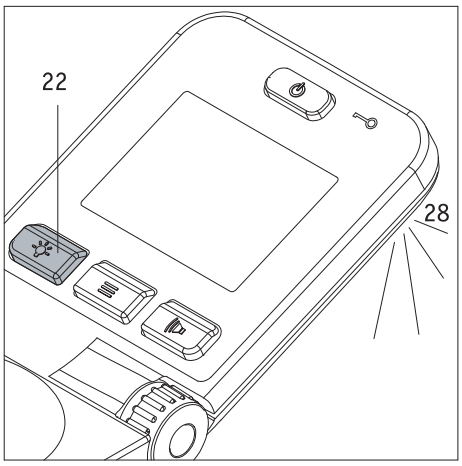


Start your first travelling attempts at a low speed in order to accustom yourself to the travel characteristics of the e-fix.

Adapt the speed to the respective travelling situations. Reduce the maximum speed, particularly in difficult travel conditions and in indoor use to prevent accidents.

Do not use the swivel arm or the control unit for support. Always use the armrest on the wheelchair for support, for assistance with standing up or to adjust your seating position!

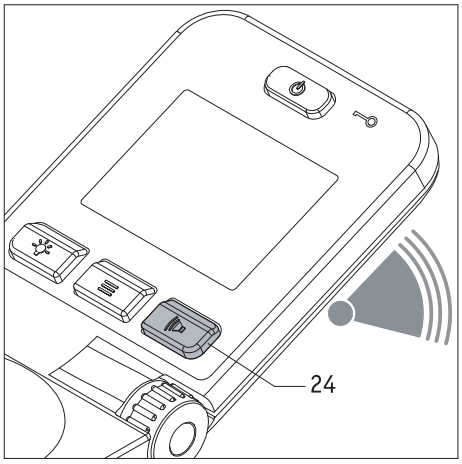
If the horizontal installation position of the holder with control unit is changed/bent by using it for support or by using the control unit itself for support, the holder must be returned to its original horizontal position. This adjustment can only be made by an Alber-authorised specialist dealer.



5.2.4 Spotlight

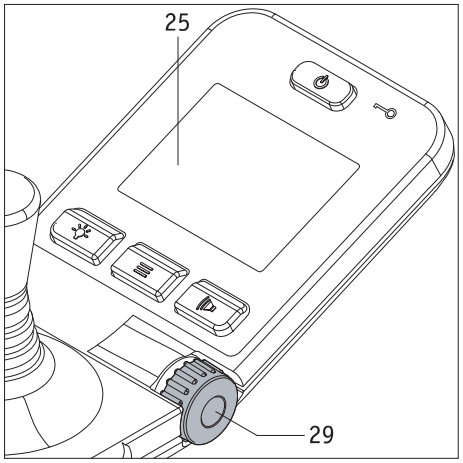
There is a spotlight [28] on the underside of the control unit. This allows objects located relatively close to the control unit to be illuminated. The spotlight is switched on or off by briefly pressing button [22].

The spotlight is used exclusively to provide minimal illumination of the area around the control unit.
When travelling at night on public roads, you must adhere to the national provisions of the respective country and attach lights to your wheelchair if applicable.



5.2.5 Warning signal

Pressing button [24] sounds a warning signal on the control unit.



5.2.6 Limiting the speed

The minimum speed of your e-fix is 0.5 km/h, which can be increased in increments and to a maximum speed of 6 km/h when fully deflecting the joystick [21].

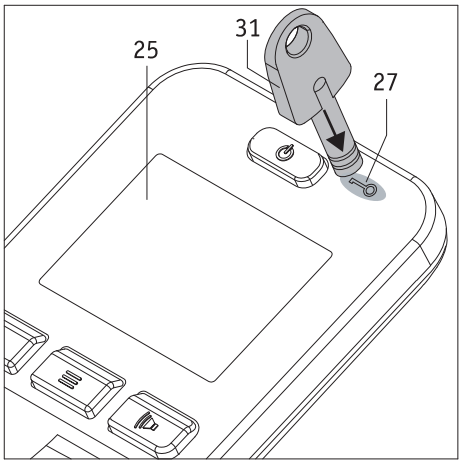
For different travel situations, for example indoors, the maximum speed to be achieved can also be limited on an individual basis. Using the rotary switch [29], select the maximum speed you require. This is shown in the display [25] in position [54] as a white number and a green bar chart.

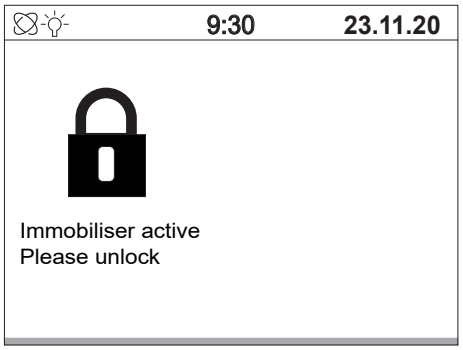
The maximum speed that you specify in this way is achieved as soon as you fully deflect the joystick [21]. When travelling in reverse, the speed is automatically reduced to 50 percent for safety reasons.

The maximum speed can be set when the wheelchair is at a standstill and when you are travelling. The set value is then shown in the display for about 3 seconds before the actual speed you are travelling at is displayed again.

Start your first travelling attempts at a low speed in order to accustom yourself to the travel characteristics of the e-fix.

Adapt the speed to the respective travelling situations. Reduce the maximum speed, particularly in difficult travel conditions and in indoor use to prevent accidents.





5.2.7 Immobiliser

Your e-fix is equipped with an immobiliser to prevent unauthorised use by a third party.

Activating the immobiliser

- Place the key [31] directly on the key symbol [27] on the control unit for roughly 2 seconds. This activates the immobiliser and the message in the adjacent diagram "Immobiliser active" is shown in the display.
- It is no longer possible to operate the e-fix. The "Immobiliser active" message remains visible in the display until the e-fix is directly switched off by you or it switches itself off automatically. However, the immobiliser always remains active!
- When the e-fix is switched on again, the immobiliser – which is still active – is once again shown in the display.

Activating the immobiliser

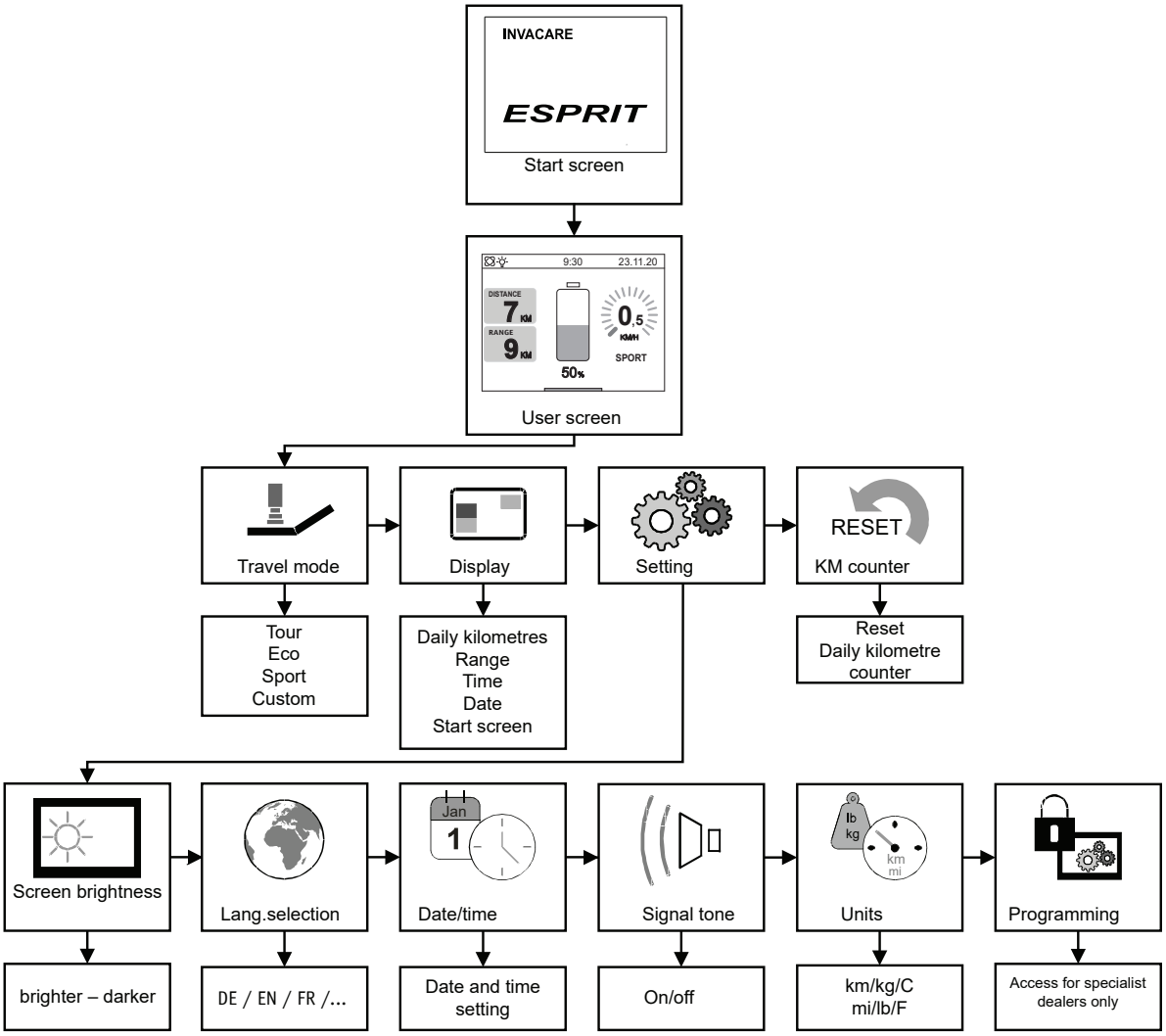
Place the key [31] directly on the key symbol [27] on the control unit for roughly 2 seconds. This deactivates the immobiliser and the display returns to the user screen (see chapter 5.3.2).

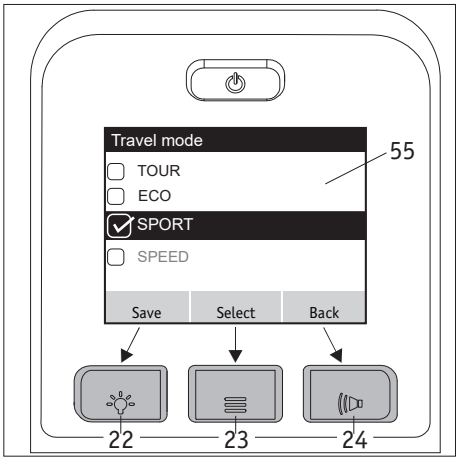
The immobiliser is not an anti-theft device because the drive wheels can be disengaged and the wheelchair can then be pushed away.

5.3 Control unit menus

The parameters of most of the functions stored in the control unit program can be customised by the wheelchair user. Other parameters, including those that significantly influence the driving characteristics of the e-fix, can only be modified by your specialist dealer. Your specialist dealer would be happy to advise you of the available options.

5.3.1 Menu structure (overview) and associated buttons on the control unit



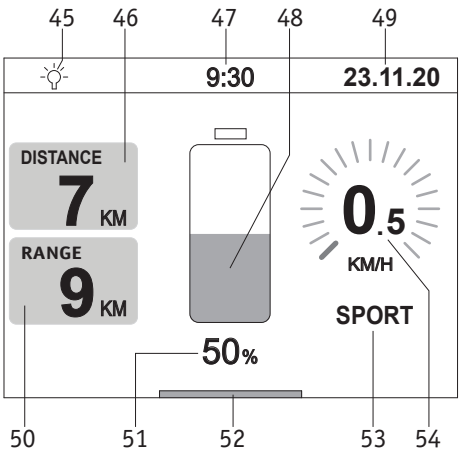


The control unit buttons are assigned to the menus and sub menus as follows:

***Save* display**
Save or set a parameter: Press button [22].

***Select* display**
Jump to a menu or sub menu or activate a parameter:
Press button [23].

***Back* display**
Go back one level (without saving!): Press button [24].



5.3.2 Displays in the user screen

When the control unit is switched on, the Alber start screen (if activated) appears first and, after about 3 seconds, this changes to the user screen illustrated in the adjacent diagram. The diagram shows all the symbols that can be shown on the control unit display.

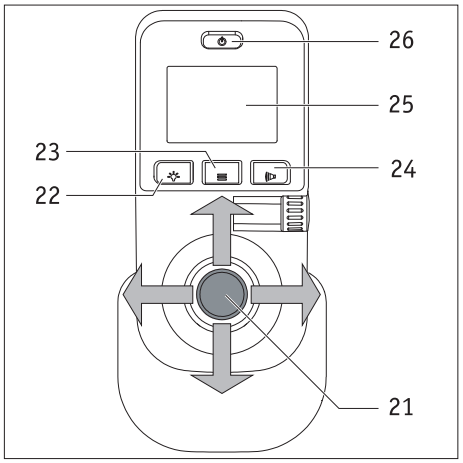
The symbols [48], [51], [52] and [54] are displayed constantly; all other symbols can be set up individually by the user (for details, see the following chapter).

One exception is the symbol [53]. The travel modes TOUR, ECO, SPORT and CUSTOM are stored here (see chapter 5.3.4 for their features). With the exception of the TOUR travel mode, all modes are shown in the display.
The following indications mean:

[45] = The symbol is automatically displayed as soon as the spotlight (see chapter 5.2.4) is switched on using button [15].
[46] = Displays the kilometres travelled since the start or the last RESET.
[47] = Current time (needs to be pre-set – see chapter 5.3.7).
[48] = Visual indication of the capacity of the battery pack.
[49] = Current date (needs to be pre-set – see chapter 5.3.7).
[50] = Distance that can still be travelled under ideal conditions and with the displayed residual capacity of the battery pack.
[51] = Indication of the capacity of the battery pack in percent.
[52] = Bar display "system is ready for use".
[53] = Pre-set travel mode.
[54] = Pre-set maximum speed (displayed as a number and circular bar chart), see chapter 5.2.6.

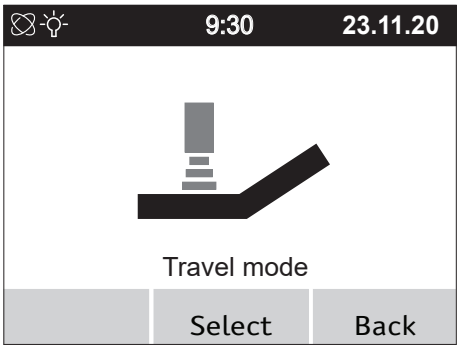
Most of the displays in the user screen are presented in a white colour on a black background. The displays [48], [53] and [54] appear in a green colour.

If the battery pack achieves a residual capacity of 20 percent, the displays [48], [53] and [54] are shown in orange; from 10 percent the residual capacity is shown in red. In both cases, the bar display [52] appears across the full width of the screen and the range is no longer displayed in symbol [50]. These kind of symbols should remind you to recharge the battery pack as soon as possible.



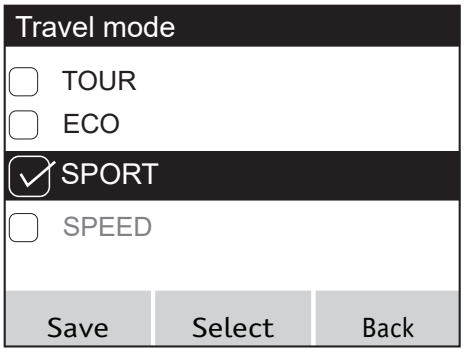
5.3.3 Calling up the menus

- To access the different menus, you need to press the menu function button [23] while the user screen is displayed. If this occurs, the display [25] shows, in turn, the menus *travel mode, display, setting, kilometre counter, reset*.
- Move the joystick [21] to the left or right to access the desired menu.
- Press the menu function [23] button as soon as the menu you require is shown in the centre of the display [25]. This takes you to the sub menu to set the various parameters (see the following chapter).



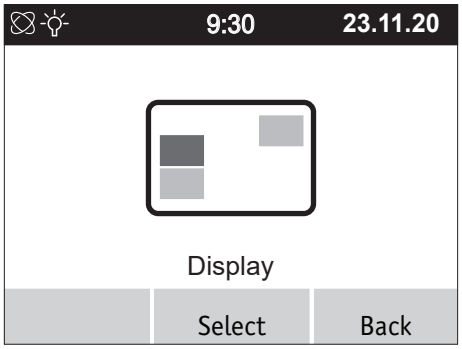
5.3.4 Travel mode menu

- Select the *travel mode* menu and press the menu function button [23] to access the associated sub menu.
- The sub menu shows the *travel mode* screen, which lists the parameters TOUR, ECO, SPORT and (if activated) SPEED.
- Move the joystick [21] forwards or backwards to move the parameters through a black bar on the display.
- The parameter highlighted by the bar is activated by moving the joystick [21] to the left or right, or pressing button [23]. When the parameter is active, a ticked square is displayed to the left of it.
- If the required parameter has been activated, it needs to be saved **now**. Press button [22] on the control unit to do this.
- Select further menus or press button [24] again to return to the user screen.



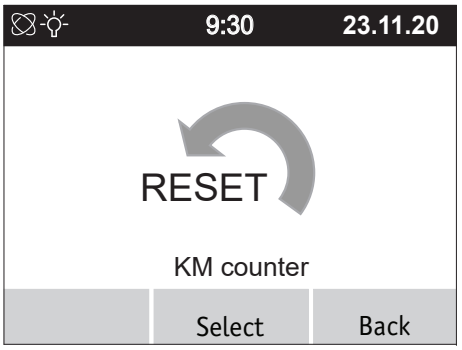
Travel mode features

TOUR: Standard settings (not shown in the user screen in position [53]).
ECO: Reduced acceleration and deceleration values.
SPORT: Dynamic calibration of acceleration and turning performance.



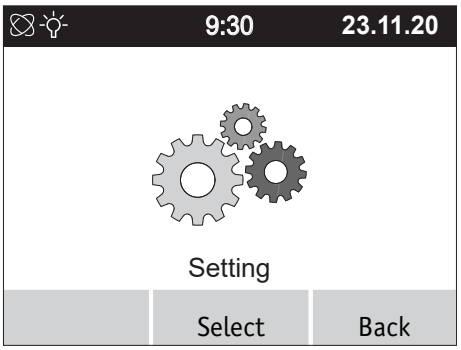
5.3.5 *Display* menu

- Select the *display* menu and press the menu function button [23] to access the associated sub menu.
- The sub menu lists the parameters *daily kilometres, range, time, date* and *start screen*.
- Move the joystick [21] forwards or backwards to move the parameters through a black bar on the display.
- The parameter highlighted by the bar is activated by moving the joystick [21] to the left or right, or pressing button [23]. When the parameter is active, a ticked square is displayed to the left of the parameter.
- All parameters can be activated or deactivated.
- If one or more parameters have been activated, they need to be saved. Press button [22] on the control unit to do this.
- Select further menus or press button [24] again to return to the user screen.



5.3.6 *Reset KM counter* menu

- Select the *Reset KM counter* menu and press the menu function button [23] to access the associated sub menu.
- The sub menu displays the *Reset daily kilometre counter* screen, which indicates the kilometres travelled.
- Press button [22] of the control unit to reset the daily kilometre counter to "zero", or button [24] to return to the *travel mode* menu without resetting the daily kilometre counter.
- Select further menus or press button [24] again to return to the user screen.



5.3.7 *Setting* menu

Select the *Setting* menu and press the menu function button [23]. This takes you to a sub menu with the settings *Screen brightness, Lang.selection, Date/Time, Signal tone, Units* and *Programming*.

Each of these options has an associated sub menu in which you can apply the settings described in the following.

As described in the previous chapters, parameters can be specified and activated or deactivated using the joystick. Similarly, as you already know, you can navigate and save parameters using buttons [22] (save), [23] (jump to a sub menu) and [24] (go back a level without saving).

***Screen brightness* sub menu**

By moving the joystick [21] to the left or right you can reduce or increase the brightness of the screen displays.

***Lang.selection* sub menu**

By moving the joystick [21] to the left or right you can set the language to be used in the display screens.

***Date/time* sub menu**

By moving the joystick [21] to the left or right you can navigate through the individual parameters.

By moving the joystick [21] forwards or backwards you increase or reduce the parameters. You can only edit those parameters that are shown in the display in grey.

***Signal tone* sub menu**

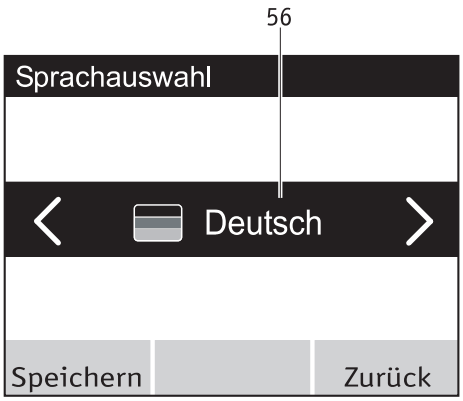
By moving the joystick [21] to the left or right you can switch the control unit signal tones on or off.

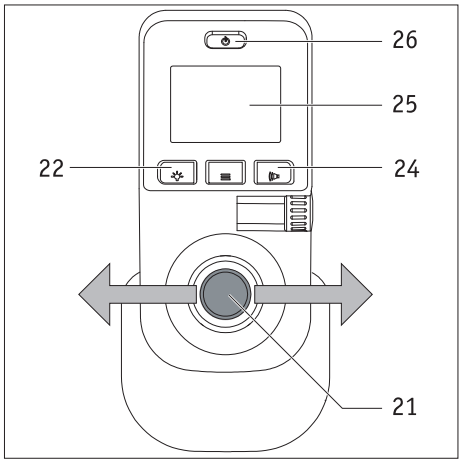
***Units* sub menu**

By moving the joystick [21] to the left or right you can display the individual details in metric or imperial measurements.

***Programming* sub menu**

Your specialist dealer has exclusive access to this sub menu to modify or customise parameters relating to the travel characteristics of the e-fix.





5.4 Setting the local language when starting up the e-fix for the first time

When starting up the e-fix for the first time you need to set the desired language. This step is generally carried out by your specialist dealer before delivering the e-fix. If this is not the case, please proceed as follows:

- Turn on the control unit by pressing the on/off button [26]. The display [25] first shows the e-fix start screen for about 3 seconds and then shows the *language selection* menu illustrated in the adjacent diagram (with "Deutsch" [German] displayed).
- Moving the joystick [21] to the left or right displays the available language variants in the selection field [56] of the display.
- When the language you desire is displayed you need to press button [22] on the control unit. This permanently saves the selected language. You are then returned to the user menu automatically.
- By pressing button [24] you can skip the language selection. However, when you next start up the system the language selection will be displayed again.
- You can change the selected language at any time, see chapter 5.3.7 for more details.

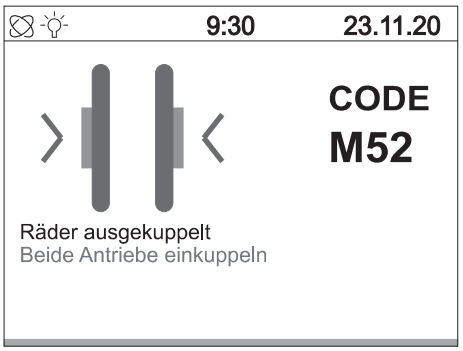
If you did not save any language when you first started up the e-fix, the language selection screen will be displayed again when you next switch on the control unit.

If you have any problems setting the language, please contact your specialist dealer.

5.5 Travel parameters

The control unit software contains various travel parameters which your specialist dealer can adjust to your individual needs and requirements.

If the travel characteristics have been customised to your individual requirements, the travel mode menu (see chapter 5.3.4) and the user screen indicate CUSTOM. In this case you cannot select any other travel modes.



6. Warnings and error messages

In the event of a malfunction, the control unit display will show a visual error indication on the left-hand side and an error code on the right-hand side (code M52 in the accompanying example).
As in some other areas, just switching the control unit off and on again can sometimes resolve the displayed error.
The following table lists the error codes that are generally easy to resolve. If the specified remedy does not resolve the problem and the error code continues to be displayed, please contact your specialist dealer.
If an error appears in the control unit display that is not included in the following table, please also contact your specialist dealer.

Display	Error	Remedy
B10	Energy recovery is not possible because the battery pack has too much power	• Switch the system off and then on again. • If possible, continue travelling uphill.
B11	Energy recovery too high, speed is reduced	• Continue to travel carefully and avoid travelling downhill.
B12	Energy recovery high	• Reduce your speed and avoid travelling downhill.
B13	Discharge current too high	• Switch the system off and then on again. • Continue to travel carefully.
B14	Discharge current too high, speed is reduced	• Continue to travel carefully and avoid travelling uphill.
B15	Discharge current high	• Reduce your speed and avoid travelling uphill.
B16 to B18	Battery pack voltage is too low	• Charge the battery pack.
B19 to B21	Voltage in the battery pack is too high during recovery	• Switch the system off and then on again. • Continue to travel carefully.
C28	Joystick was deflected on start-up	• Do not touch the joystick when switching the system on.
C30	Gradient too big	• Check the horizontal installation position of the control unit.
C31	Error: gyro sensor	• Unable to communicate with the sensor. Switch system on and off; if error persists, contact your specialist dealer.
I04	Attendant control communication error	• Switch the system off and then on again.
I05	Attendant control button was pressed on start-up	• Switch the system off and then on again.
I08, I09	Attendant control collision protection was activated	• Deactivate attendant control. • Switch the system off and then on again.
M10, M11	Check electronics, drive failure	• Switch the system off and then on again. • Swap the two wheels from the left to the right and from the right to the left-hand side.
M12, M13	Drive voltage range error	• Switch the system off and then on again. • Swap the two wheels from the left to the right and from the right to the left-hand side. • If the error changes from M13 to M12: Swap the wheels again.
M14 M15	Drive temperature range error	• Reduce your speed. • Let the drive cool down. • Swap the two wheels from the left to the right and from the right to the left-hand side.

Display	Error	Remedy
M16 to M19	Drive overload error	• The load is too high for the drive. Prevent overloading.
M20 to M51	Check electronics, drive failure	• Switch the system off and then on again. • Swap the two wheels from the left to the right and from the right to the left-hand side.
M52	Right drive disengaged	• Engage the right wheel.
M53	Left drive disengaged	• Engage the left wheel.
M54	Left and right drive disengaged	• Engage both wheels.
M55, M56	High drive temperature	• Reduce your speed. • Let the drive cool down.
S10, S11	Unable to communicate with the wheel	• Switch the system off and then on again. • Swap the two wheels from the left to the right and from the right to the left-hand side. • If the error changes from S10 to S11: Swap the wheels again.
S12	Unable to communicate with the battery pack	• Switch the system off, take the control unit plug out of the battery pack and take the battery pack out of the interface. • Then insert the battery pack back into the interface and connect the control unit.
S13	No system communication	• Check all plug connections.
S15	Communication was interrupted during travel	• Check all plug connections. • Switch the system off and then on again.
S17	External communication error	• Contact your specialist dealer

If an error code appears in the display that is not listed in the table, switch the e-fix off and on again. If an error is not resolved by doing this, please contact your specialist dealer. Depending on the type of error, the affected components may need to be sent to Alber for repair.

7. Storage, care, maintenance and disposal

7.1 Storage

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

- Store the wheelchair according to the wheelchair manufacturer's specifications.
- Protect the components of the e-fix with film in order to keep moisture out.
- Store the wheelchair and all e-fix components in a dry room.
- Ensure that no moisture penetrates into or drips onto the wheelchair or e-fix components.
- Ensure that the wheelchair and e-fix 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 in chapter 4.10
- The wheelchair and the e-fix components must be cleaned prior to recommissioning. In particular, it must be ensured that there are no metallic particles on the plug [30] of the control unit or in the socket [16] of the interface.
- Check whether maintenance is required before recommissioning (see chapter 7.4) and arrange this if necessary.

7.2 Care

Water ingress can permanently damage the drive.
For this reason, do not clean the individual components of the e-fix under running water or with a high-pressure cleaner.

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

- Clean the surface of the wheels with a dry or slightly damp cloth.
- Never use scouring pads, abrasive detergents or aggressive chemicals to clean the components.
- Never clean the components under running water, for example, using a hose or a high-pressure cleaner. This can cause water ingress, causing irreparable damage to the electronics.

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

7.3 Re-use

If your e-fix has been provided to you by your health insurance company and you do not need it any longer, please contact your health insurer, an Alber representative, or your authorised specialist dealer. Your e-fix can then be easily and efficiently reused.
Before the e-fix is re-used, it should undergo maintenance. The brackets used to attach the e-fix wheels to the wheelchair can be easily and quickly removed by your authorised specialist dealer or Alber agent and fitted to another wheelchair.
In addition to the cleaning instructions given in chapter 7.1, before re-using the system the push rims and all externally accessible plastic parts of the e-fix components need to be disinfected. For this purpose, use only the alcohol-based wipe disinfectants approved in your country; for exposure time and concentration, see manufacturer’s recommendations.
Example: Bacillol AF, exposure time 15 minutes.

7.4 Maintenance

In Germany, the maintenance of medical products is regulated by law in the Medical Device Directive (MPBetreibV), Section 7. According to this law, maintenance measures, especially inspections and servicing, are required in order to ensure continuous safe and proper operation of medical products.
Based on our market observations, an interval of two years has proven reasonable for maintenance of our products when used under normal operating conditions. This guideline value of two years may vary depending on the actual use of the product and the behaviour of the user. Checking the degree of use and the user behaviour is the responsibility of the operator. In any case, we strongly recommend that you clarify beforehand to what extent the cost of the maintenance work for our products is covered by your health insurance provider, especially with regard to any existing contracts.

7.5 Disposal

This device, its battery pack and accessories are durable products.
Nevertheless, they may contain substances that are hazardous to the environment if the parts are disposed of in locations (e.g. landfills) that are not intended for the disposal of such materials according to the applicable statutory regulations for the country in question.
The product is labelled in accordance with the WEEE Directive with a “crossed-out rubbish bin” symbol, reminding you that it must be recycled.
Please protect the environment and return the product at the end of its service life to your local recycling centre.
As this product is not covered by the regulations of the WEEE Directive in all European countries, please familiarise yourself with the applicable waste disposal regulations in your country. Alternatively, return the e-fix to your authorised specialist dealer or Alber GmbH for proper and environmentally sound disposal.

8. Product safety information

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

- Homepage of Alber (manufacturer of the e-fix)
- Homepage of the German Federal Institute for Drugs and Medical Devices [BfArM]

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

9. Product service life

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

10. Warranty and liability

10.1 Warranty for defects

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

10.2 Durability warranty

Alber provides a 24-month durability warranty for your e-fix.
The durability warranty does not include:

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

10.3 Liability

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

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

11. Important legal information for the user of this product

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

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

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

With regard to EU Member States, please notify:

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

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

12. Technical data

Wheel	
Range (*):	up to 15 km according to ISO 7176 - 4
Nominal gradient:	up to 11.3° (20%)
Speed:	0.5 – 6 km/h **Always observe the limit values specified by the wheelchair manufacturer and country-specific road traffic legislation.**
Rated power of motor:	2 x 110 W
Cut-off voltage:	33,3 V
Operating voltage:	36 V
Operating temperature:	-25 °C to +50 °C
Maximum occupant mass:	120 kg
Permissible total weight:	max. 170 kg

Battery pack	
Battery type:	Lead-AGM
Rated operating voltage:	36 V
Capacity:	275 Wh
Charging temperature:	0 °C to 40 °C
Operating temperature:	-25 °C to +50 °C
Storage conditions (temperature):	-40°C bis +65°C
Protection class:	IPx4
Rated capacity C5 of the battery:	7.65 Ah

The service life of the rechargeable batteries has been tested in accordance with IEC 60254-1

System	
Storage conditions (temperature):	-40°C to +65°C (except the battery pack)

Weight of individual parts				
Wheels:	14“ puncture-proof: 7.7 kg	14“ Pneumatic tires: 6.7 kg	22“: 7.7 kg	24“: 7.9 kg
Battery pack:	8.8 kg			
Control unit:	0.6 kg			
Interface:	0.5 kg			
Total weight:	14“ puncture-proof: 25.3 kg	14“ Pneumatic tires: 23.3 kg	22“: 25.3 kg	24“: 25.7 kg

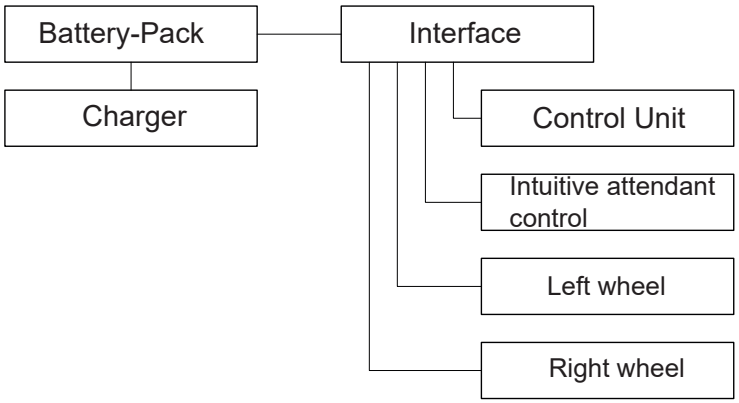
Wheel tyres of e-fix			
Name	Model and type	Size (inches)	Air pressure in bar / kPa / psi
PR1MO Powertrax	3.00 x 8	14”	puncture-proof
PR1MO Powertrax	3.00 x 8	14”	max. 2.4 bar / 240 kPa / 35 psi
Standard tyres	22 x 1.3/8”, 37-489	22”	puncture-proof
Schwalbe Downtown K-Guard	37-540 GR/B HS342 SGrip GRC 50EPI	24”	puncture-proof

(*) The range varies depending on the terrain and the prevailing usage conditions. The specified maximum range is valid for optimum travel conditions (level terrain, a newly recharged battery pack, ambient temperature of 20 °C, smooth travel, etc.). At lower temperatures the range of the e-fix could be lower than the data in the table above.

Charger
For technical information and other information on charging, please refer to the separate operating manual for the charger.

Miscellaneous
All e-fix components are protected against corrosion.

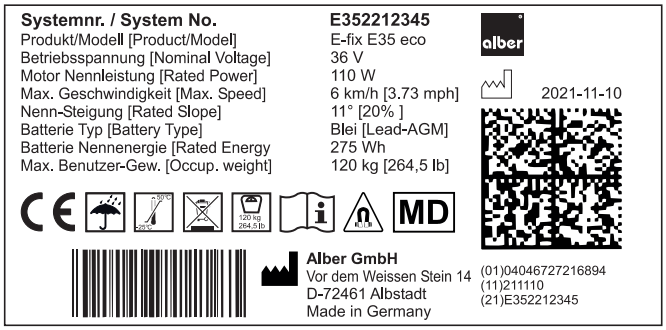
Block diagram



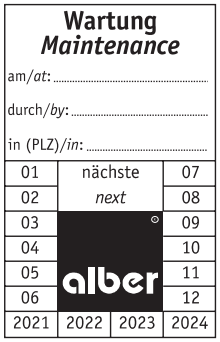
CE The e-fix and the corresponding off-board charger comply with the applicable sections of standard EN 12184 for electric wheelchairs and standard ISO 7176-14 for wheelchairs and comply with the EU Medical Devices Directive (MDR) 2017/745. The e-fix is a class I medical device.

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

13. Labels
There are labels on the e-fix components which include various product details. In the event of a device defect, individual components can be replaced by your specialist dealer as part of the Alber exchange parts pool. For this purpose, your specialist dealer will require certain items of information from the labels.



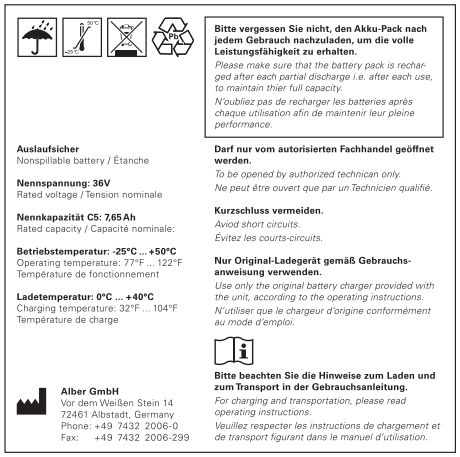
System label on the interface
The system label provides information on the key technical data of the e-fix and makes it possible, if necessary, to trace the system. Please specify the system number when exchanging a device as part of the Alber exchange parts pool. The system label is on the front of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



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

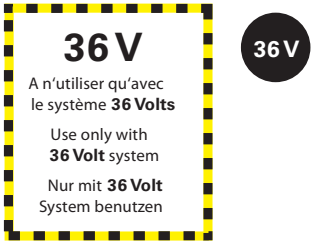
Component label

The label is attached to the e-fix wheels, the control unit, on the reverse of the battery holder, the battery pack and the charger.
Please specify the component number (number in the middle of the label, shown by an arrow in the adjacent diagram) when replacing the component within the Alber exchange pool .



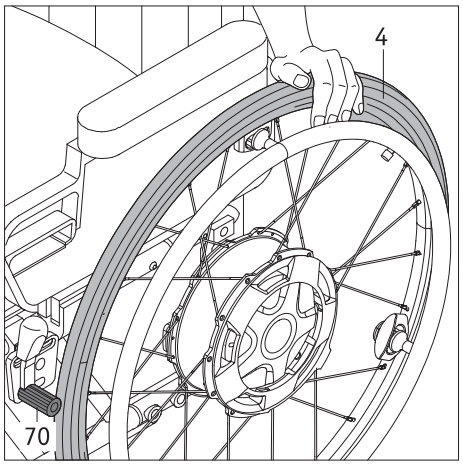
Battery pack labelling

The information shown in the accompanying diagram is engraved on the reverse of the battery pack or attached as a sticker.



Notice on battery pack

The two adjacent stickers are located above the charger socket of the battery pack. The battery may only be charged with charger BC3615LA (output voltage 36VDC).



14. Important information about adjusting your seating position

- Switch on the system (see chapter 5.2.2).
- Before adjusting your seating position in your wheelchair or getting out of the wheelchair, always engage the hand brake [70] so that the wheelchair cannot roll away inadvertently.
- When adjusting your seating position: Observe the relevant instructions in the operating manual for your wheelchair or use the wheel casing [4] for support when adjusting your seating position.

15. Your Contact Person (USA only)

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

Alber USA LLC
1005 International Drive
Oakdale, PA 15071-922
United States
Phone 001-724-6957822
Fax 0017246953710
E-Mail: info@alber-usa.com

15. Using the wheelchair as a vehicle seat

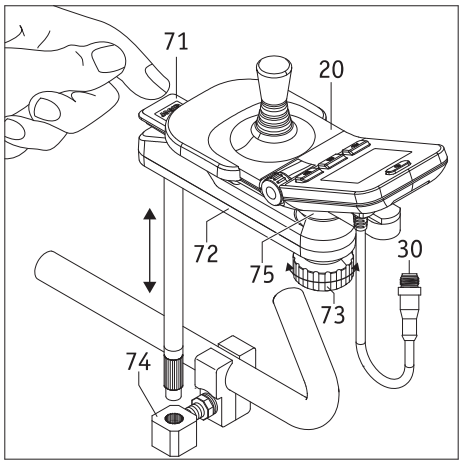
The e-fix is an add-on drive, which can be attached to a large number of different wheelchair models.
The e-fix has been successfully crash tested with a series of different wheelchair types as per ISO 7176-19 for transportation in a vehicle (bus, van, ...). These tests showed that in the event of an accident, the e-fix does not endanger the occupants of the vehicle during such tests.
In these exemplary tests, it was also possible to show that during such tests the e-fix does also not endanger wheelchair users if used in combination with appropriately tested important safety devices such as headrests and a suitable belt system in place.

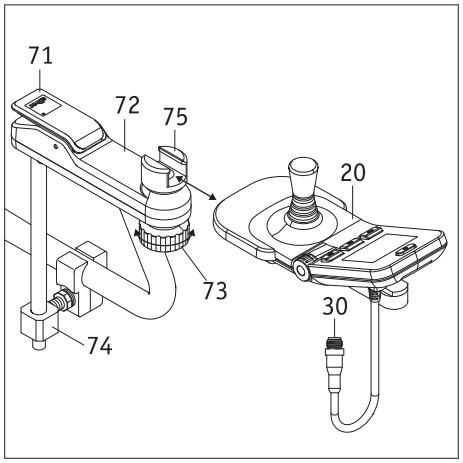
For transportation in a vehicle, the e-fix needs to be combined with a wheelchair that meets the requirements of ISO 7176-19 in order to function as a car seat. A wheelchair that meets the requirements of ISO 7176-19 has appropriately marked hooks, so-called tie-down adapters, which are always to be used in combination with suitable restraint systems for securing the wheelchair. If in doubt, contact should be made with the specialist dealer or the manufacturer of the wheelchair.

Due to the many influencing factors and constraints described above, the decision to sit in a wheelchair with the e-fix attached during the trip is always made following consultation between the wheelchair user and the driver of the vehicle. In the event of any uncertainty, the specialist dealer and/or the manufacturer of the wheelchair should also be consulted.
If such doubts cannot be dispelled, we recommend transferring the wheelchair user to the car seat.

Excessive tensioning/lashing of the system in the vehicle and the forces initiated thereby, particularly during dynamic cornering, which amount to the weight of the person sitting in the wheelchair during the trip, can result in damage to the Alber add-on drive, especially to the stub axle, over a prolonged period of time. This type of damage is not covered by the warranty or guarantee.

If the wheelchair with the e-fix attached is used as a vehicle seat, the battery pack must be removed and be stowed in a safe place.





Appendix A - Swivel arm for control unit

To make it easier to approach the table edge, we recommend fitting the optional swivel arm. This allows the control unit to be swivelled out, away from its original position.

- Press the cap [71] and swivel the control unit [20] completely to the side.
- Swivel the control unit [20] to return it to its initial position; the cap [71] lifts up and automatically locks the swivel mechanism in the process.
- Turning the clamping wheel [73] clockwise releases the control unit clamp inside the sliding part [75]. This allows the control unit to be moved slightly in longitudinal direction within the sliding part [72] if necessary.
- After you have set the optimum position for you, you need to fix the control unit in place by turning the clamping wheel [73] anticlockwise in the sliding part [75].
- If the swivel arm [72] is entirely removed together with the control unit [20], you can take it out of the holder [74]. However, first remove the plug [30] of the control unit from the interface (see chapter 5.1).

Removing the control unit from the swivel arm

- Remove the plug [30] of the control unit from the interface (see chapter 5.1).
- Turn the clamping wheel [73] clockwise and slide the control unit [20] out of the sliding part [75].

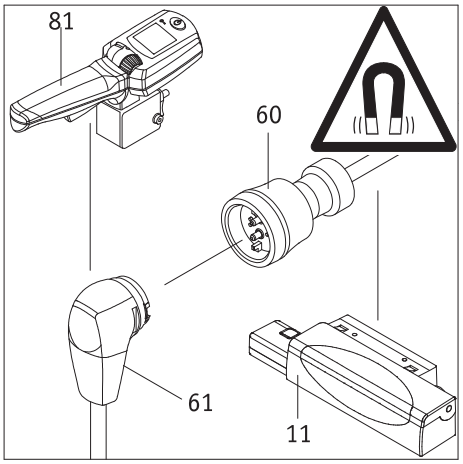
Attaching the control unit to the swivel arm

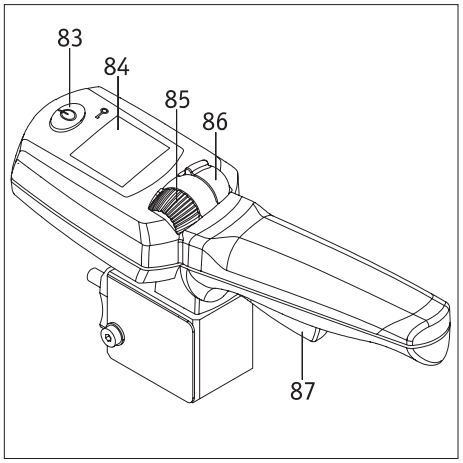
- Slide the control unit [20] into the sliding part [75] and fix it in place by turning the clamping wheel [73] anticlockwise.
- Reconnect the plug [30] of the control unit to the interface (see chapter 5.1)

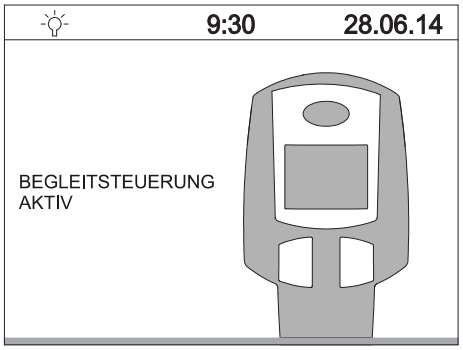
Before inserting the plug [30] into the socket [16] of the interface, ensure that both parts are clean and there are no metallic particles on them. If there are any metallic particles, remove these with a clean, dry cloth.

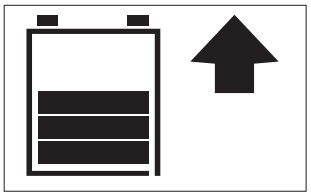
It is necessary to ensure that the control unit is fixed in place securely in the sliding part [75] with the clamping wheel [73]. If a control unit falls to the ground when switched on, this can result in an unintentional system malfunction and potentially in an accident.

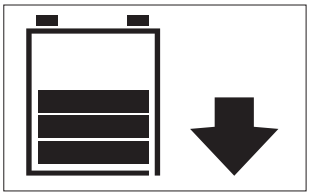
The swivel arm can be fitted to virtually all wheelchair models. Your specialist dealer can provide more detailed information.











Appendix B – Intuitive attendant control

The intuitive attendant control (hereinafter referred to as the attendant control) takes full control of the e-fix and may only be used by someone accompanying the wheelchair user. Under no circumstances may the wheelchair user themselves operate the attendant control. The individual components are installed by Alber or by the authorised specialist dealer.

1. Connecting the attendant control

- Switch off the wheelchair user's control unit (see chapter 5.2.2).
- Connect the magnetic plug [61] of the intuitive attendant control to the socket [60] of the interface [11].
- The attendant control is now connected to the e-fix.

2. Starting up the attendant control

- Switch on the e-fix and wait until the start screen is displayed.
  Do not, under any circumstances, touch the attendant control, the control unit joystick or its individual operating elements during start-up. If you do, you will get an error message.
- Press button [83] on the attendant control. This switches the system on and brings up the following status displays:
  - In the wheelchair user's control unit display:
    text "attendant control active" with the attendant control symbol (see diagram).
  - In the attendant control's display [84]:
    battery symbol (indication of battery capacity), to the right of the currently selected travel direction (arrow symbol) - see diagram to the bottom left.
- The attendant control is now active; the control unit is inactive. The wheelchair can now only be moved by an attendant.

3. Travel mode with the attendant control

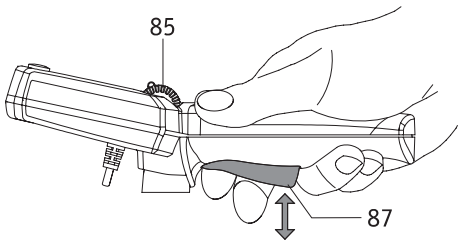
- Specify the direction of travel you desire by pressing switch [86] forwards (forwards travel) or backwards (reverse travel). The selected travel direction is shown in the display by an arrow symbol.
- Use the adjustment wheel [85] to select the maximum final speed you require.
  When setting your speed, this will briefly be displayed as a percentage below the battery symbol.
- Pull the travel lever [87] in order to begin your trip.

The maximum final speed to be reached can be stored in the e-fix software. Contact your specialist dealer in this regard.

4. Turning off the attendant control

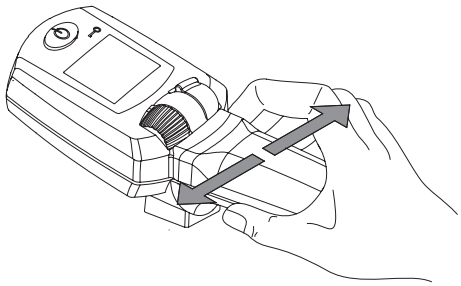
Press button [83] of the attendant control to switch it off.
If the control unit is still switched on when you do this, it will immediately take control of the e-fix. To fully shut down the e-fix, you need to switch it off using the control unit (see chapter 5.2.2).

If the e-fix is switched off using the control unit when the attendant control is still active, the attendant control is automatically activated when you next start up the system.



5. Information on travel mode

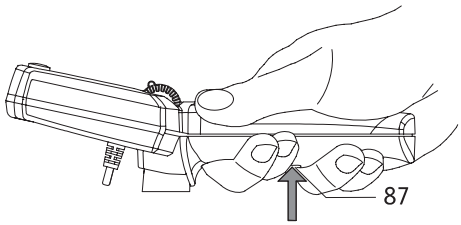
The travel lever [87] is similar to a car's accelerator.
The e-fix is stationary in the initial position. Travel mode starts when the travel lever [87] is pulled. The speed increases, the further the travel lever is pulled. The maximum achievable speed is pre-selected via the adjustment wheel [85] and is maximum 6 km/h forwards, while reverse travel is maximum 4.2 km/h.
If these speeds are too high for you, your specialist dealer can reprogramme the maximum speed in the e-fix software.



The electronics in the handle register the movements made by the user's hand. A slight deflection of the lever to the left or the right is converted into a travel command for the e-fix wheels so that you can navigate bends without a great deal of effort.

Tilting or lifting the wheelchair using the attendant control or the additional handle (optional accessory) is not permitted.
Please observe the information provided by the wheelchair manufacturer on tilting or lifting the wheelchair.

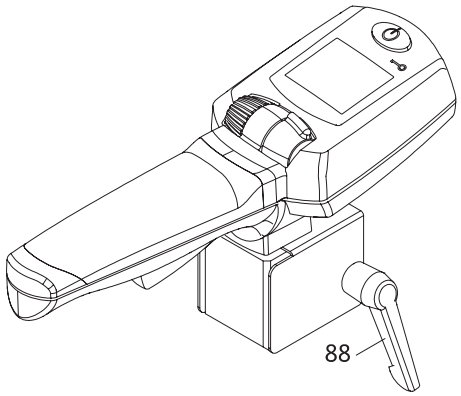
6. Information on the panic function



If you need to stop the e-fix immediately in hazardous situations, firmly pull the travel lever [87] beyond the normal perceptible stop. This triggers an immediate forced shutdown of the e-fix and sounds an acoustic warning signal.
After releasing the travel lever [87], you can continue travelling with the e-fix immediately.

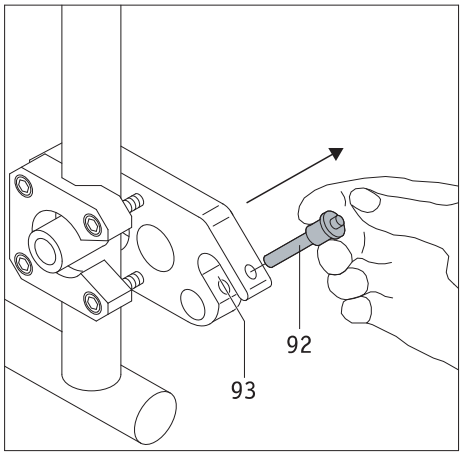
7. Removing the attendant control from the wheelchair

- Use the e-fix's control unit to switch it off (see chapter 5.2.2).
- Remove the magnetic plug [61] of the attendant control from the socket [60] of the cable of the interface [11].
- Release the fixing lever [88] (turn it several times!) and remove the attendant control from the holder on the wheelchair.



Warning
Applying light pressure to the right or left of the handle of the intuitive attendant control is sufficient to result in the wheelchair moving to the right or left respectively. Equally, it is sufficient to lightly touch the travel lever to activate it. For this reason, always switch off the attendant control, if it is not in use. This ensures that the wheelchair does not begin to move inadvertently.
Never hang any objects (such as handbags, shopping bags, etc.) on the attendant control, irrespective of whether the wheelchair is in travel mode or at a standstill. Such objects might activate the travel lever or trigger the sensors and thus set the wheelchair in motion inadvertently.

Before inserting the magnetic plug [61] into the socket [60] of the interface, ensure that both parts are clean and there are no metallic particles on them. If there are any metallic particles, remove these with a clean, dry cloth.



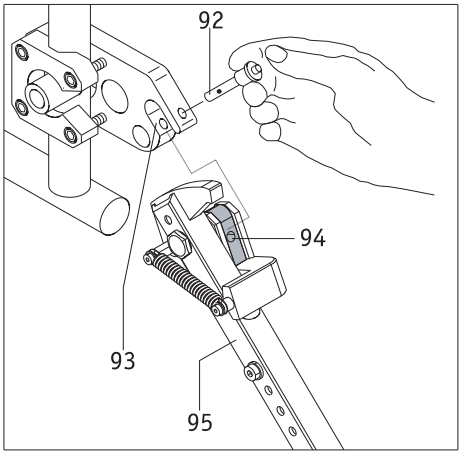
Appendix D - Anti-tippers

Since your wheelchair may already be equipped with anti-tippers, Alber anti-tippers are only offered as optional accessories. The use of original wheelchair anti-tippers is subject to the instructions and safety information provided by the manufacturer that apply to their use.

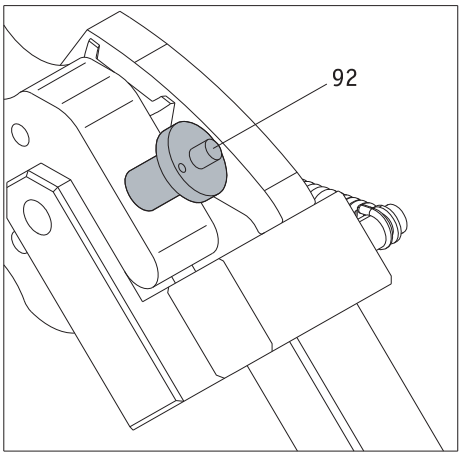
When using Alber anti-tippers, two further brackets are fitted to your wheelchair in which the anti-tippers are inserted. The following instructions and safety precautions apply.

Fitting and removing the Alber anti-tippers

- Switch off the two e-fix wheels before fitting the anti-tippers.
- Remove the quickpin [92] from the bracket mounting fork [93] by pressing on the pin in with your thumb and pulling it out using your index and middle finger.

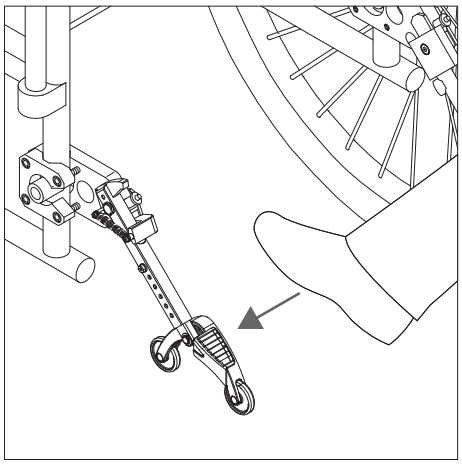


- Push the clamping piece for the anti-tipper [94] into the bracket mounting fork [93].
- Lock the bracket mounting fork [93] in place using the quickpin [92]. To do this, press the pin in with your thumb and then push it **fully** into the bracket as far as it will go.



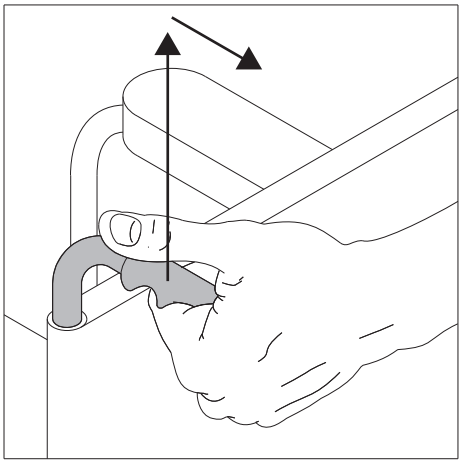
- Check that the quickpin [92] holds fast in the bracket mounting fork [93]. It must not be able to be removed without pressing the releasing device.
- Fit the second anti-tipper.

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

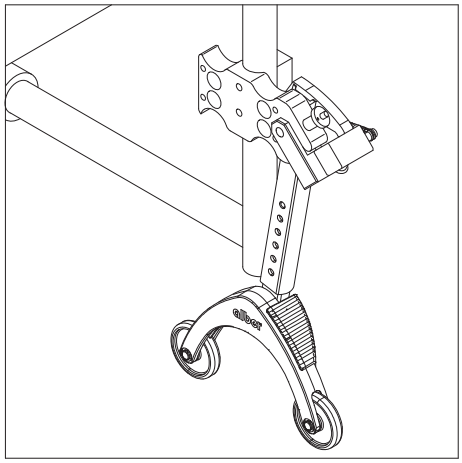


Using the Alber anti-tippers

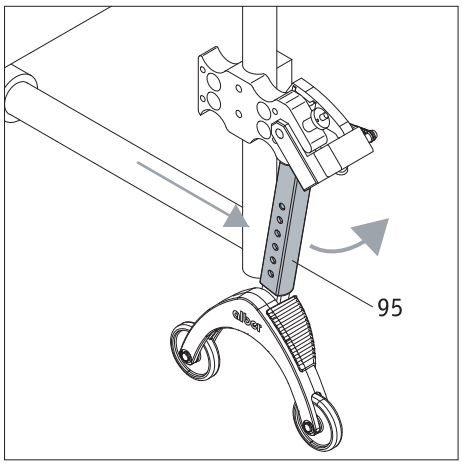
- Press your foot on an anti-tipper as shown in the diagram.



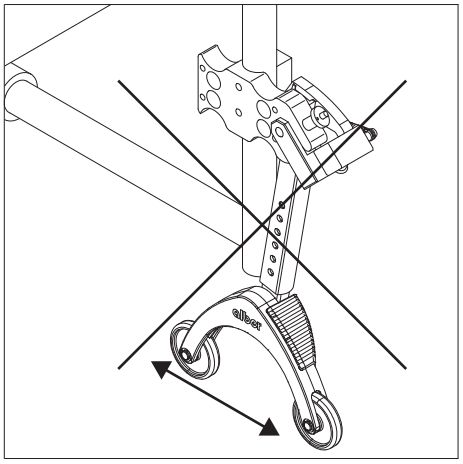
- While doing so, pull the wheelchair upwards and to the rear a little by its handles until the wheelchair has been raised and the anti-tippers click into a fixed position.



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



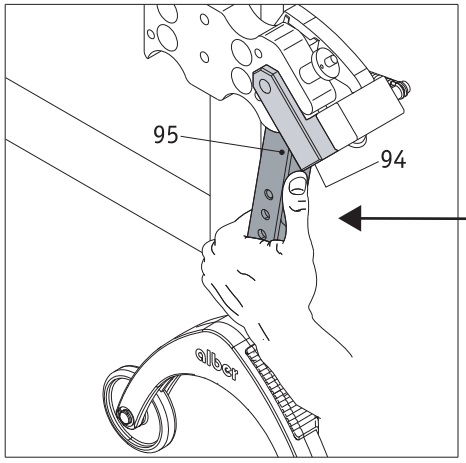
- Once the wheels are fitted, you can return the anti-tippers to their starting position. To do this, push the wheelchair forwards and push back the holding rod [95] using your foot at the same time.

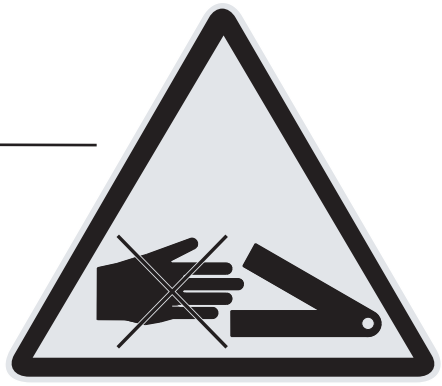


Important operating and safety instructions

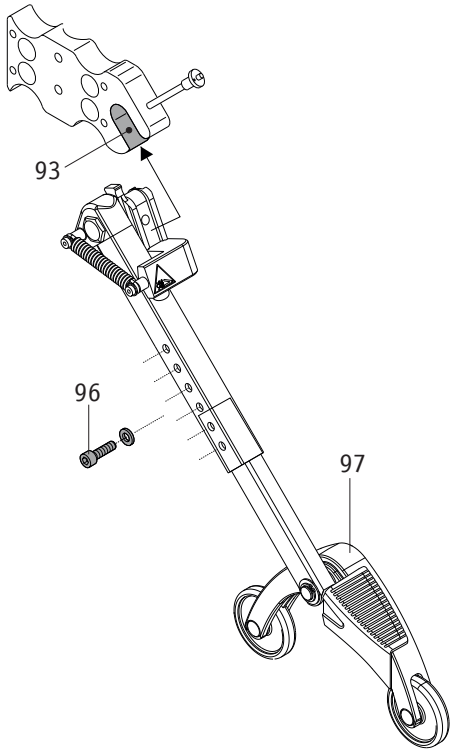
Jacking up the wheelchair is not permitted when the wheelchair user is still seated.

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





Caution must be exercised when moving or collapsing the anti-tippers, particularly during manual adjustment or activation. As a result of the high spring force required, there is a risk of crushing between the holding rod [95] and the clamping piece [94].



<u>Important information</u>

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

The locking screw for the plug-in part ([96] in the diagram opposite) must be tightened to 5 Nm. Arrange for your specialist dealer to carry out this assembly work.

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

Regularly check that the anti-tippers are still seated securely in the mounting fork [93] of the bracket. Check that the support angle [97] can still move freely. If screw connections have loosened or have even come loose or if the support angle is no longer able to move freely, contact your authorised specialist dealer to rectify the situation.

Ihre Alber-Vertretung / Your Alber representative

Alber GmbH
Vor dem Weißen Stein 14
72461 Albstadt-Tailfingen
Telefon +49 (0)7432 2006-0
Telefax +49 (0)7432 2006-299
info@alber.de
www.alber.de