

alber

**KLEIN.
LEICHT.
WENDIG.**

e-fix[®]
Elektrischer Zusatzantrieb

Gebrauchsanweisung e-fix E35

DE

Instructions for Use e-fix E35

EN

Instructions d'utilisation e-fix E35

FR

Manual de instrucciones e-fix E35

ES

Istruzioni per l'uso e-fix E35

IT

Brugsvejledning e-fix E35

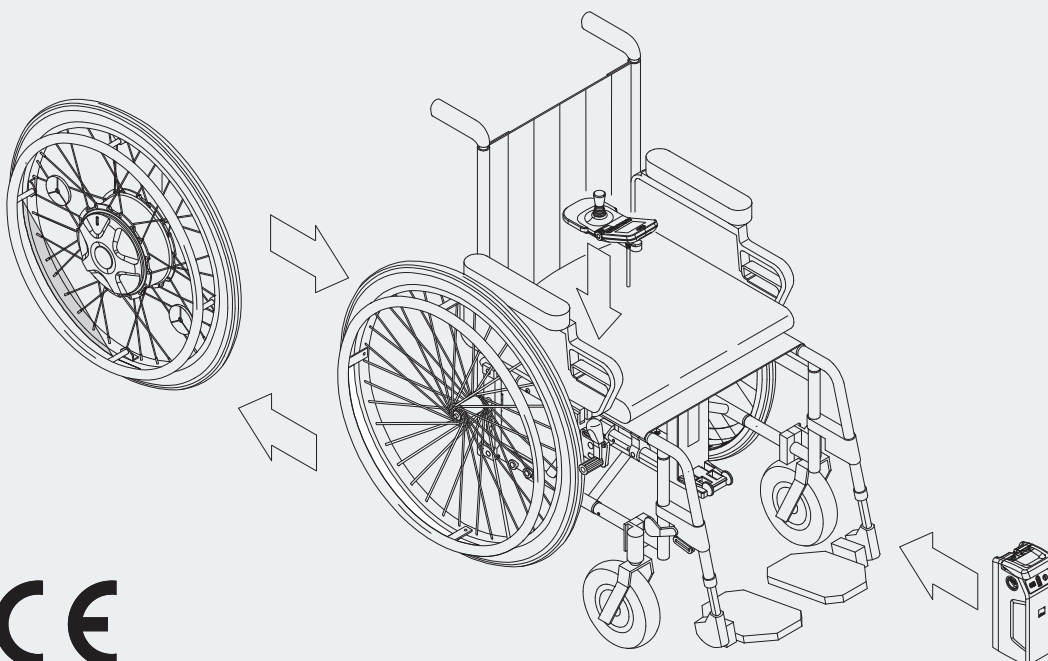
DK

Gebruiksaanwijzing e-fix E35

NL

Instruktionsbok e-fix E35

SE



CE

Service Center (Deutschland)

Montag bis Donnerstag von

8.00 - 18.00 Uhr

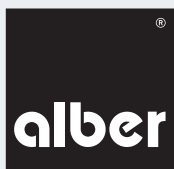
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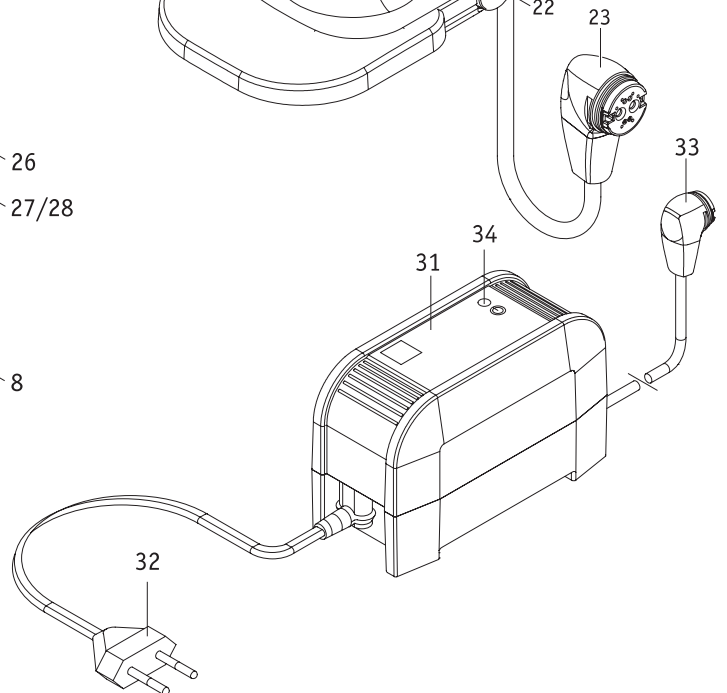
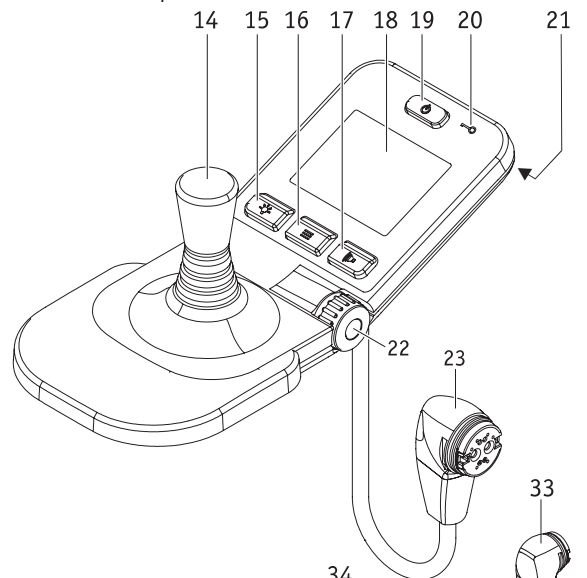
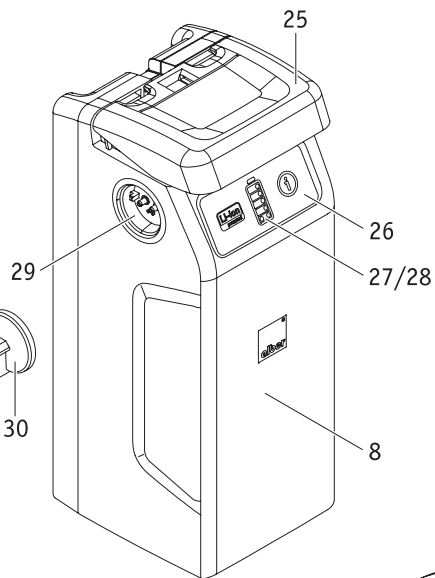
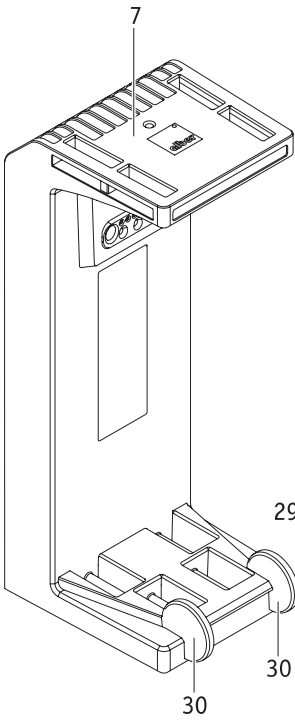
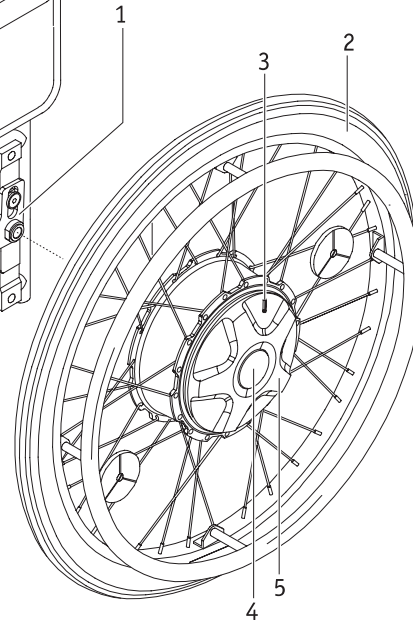
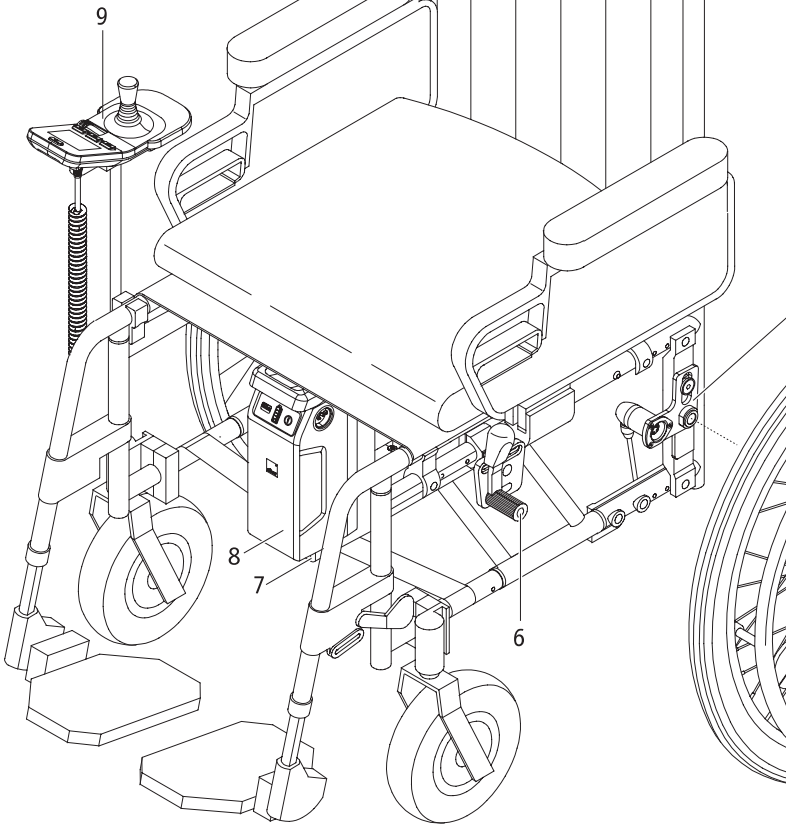
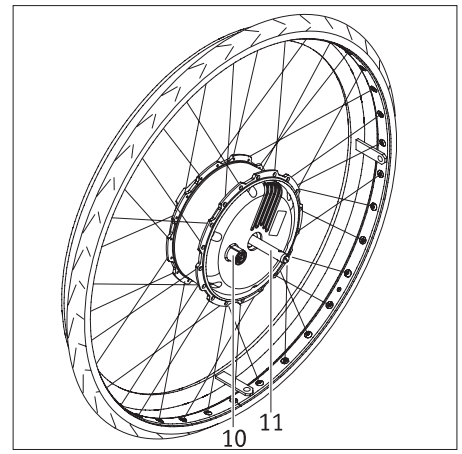
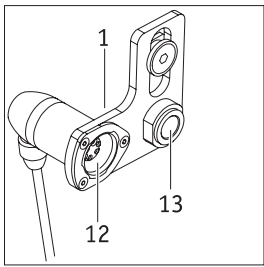
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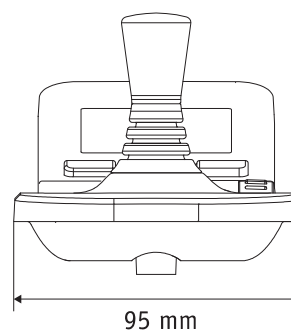
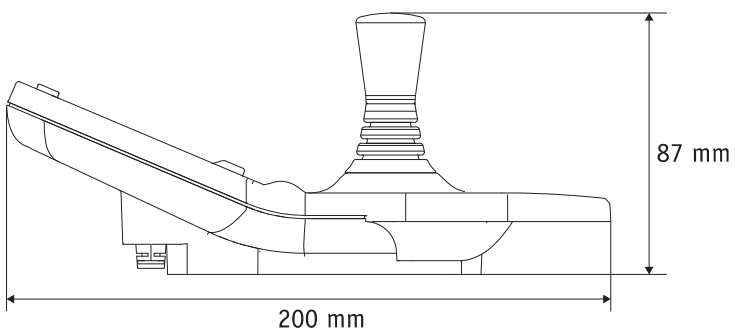
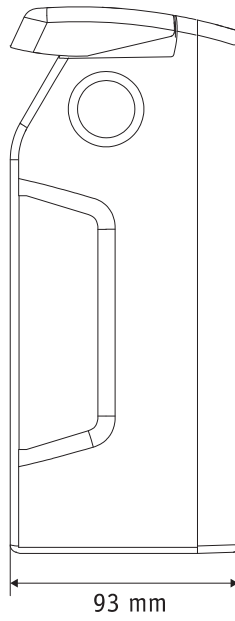
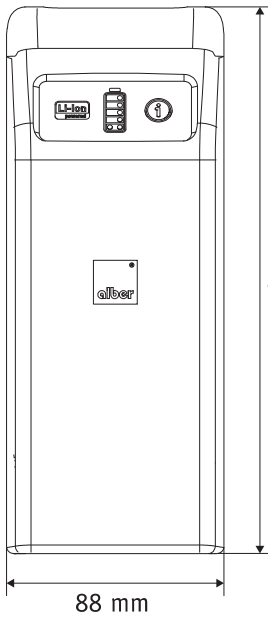
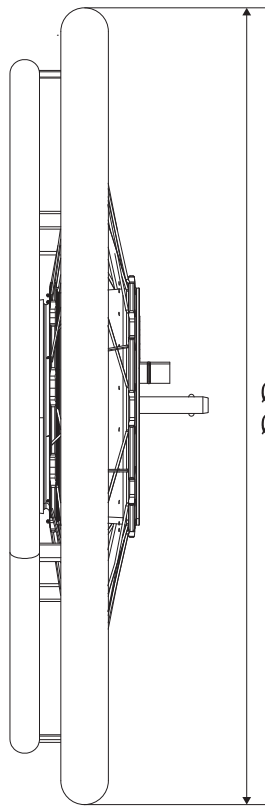
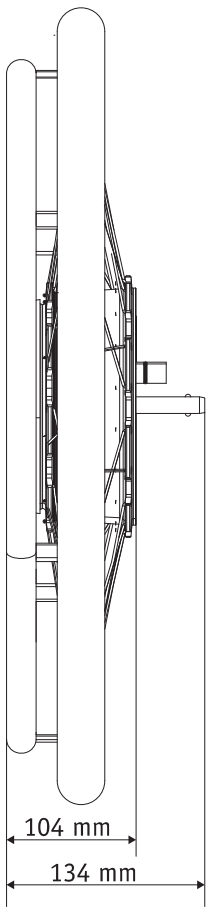
erreichbar unter

Telefon (0800) 9096-250

(gebührenfrei)







USA and CANADA only

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

Powered Wheelchair Electromagnetic Interferences (EMI)

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

⚠ WARNING Radio wave sources may affect powered wheelchair control

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

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

Important Information

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

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

Electromagnetic Interference (EMI) From Radio Wave Sources

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

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

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

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

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41.0001.4.99.10
As of: 2021-02-22

This operating manual provides information about the products

- e-fix E35, up to 120 kg user weight, size of wheels: 22" or 24" puncture proof
- e-fix E36, up to 160 kg user weight, size of wheels: 24" puncture proof

both called "e-fix" in the following.

This operating manual is available for download on our website www.alber.de.
If you require a version that is written in a larger font, contact our Alber Service Center.

1. Introduction

1.1 Indications for use

The e-fix is an add-on drive for wheelchairs. The e-fix E35/E36 turns a manually propelled wheelchair into a powered wheelchair. It is intended for medical purposes to provide a means for a disabled person to take over the propulsion of the wheelchair and increase mobility and flexibility.

1.2 Important safety notes – please observe carefully at all times

The e-fix is an add-on drive for wheelchairs. For safety reasons, it must only be operated by persons who

- have been instructed in its handling,
- can move and coordinate both hands or arms without major restrictions,
- have the physical and mental ability to safely operate the wheelchair with the e-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 Center, telephone 0800 9096 250 (toll-free; only applies within the Federal Republic of Germany).

2

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

We recommend refraining from using the e-fix 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.

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

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



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

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.

The e-fix must only be fitted to and operated by wheelchairs that are listed in Alber's bracket database.

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
- 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 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 his/her tasks and who has been made aware of the possible hazards associated with improper use of the device. In general, this is the user of the wheelchair to which the e-fix is 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 people. Proper use includes complying with the information specified in this manual on carrying out safety checks and observing and adhering to the safety precautions and hazard warnings for driving.

The use of the e-fix for any of the following purposes is 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 modification to the e-fix
- 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.



Before using 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 possible injury risks. 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.

The symbols used on the labels (see chapter 10) 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



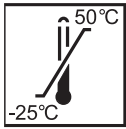
For information on how to dispose of the e-fix and its components, please see chapter 7.4.



Warning against magnetic fields and forces.



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 weight of person that the e-fix E35 can accept as its load capacity: 120 kg / e-fix E36: 160 kg).



Specification of the manufacturing date on the system label (see chapter 10)



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



Hazardous goods labelling (class 9) on the battery pack box
See chapter 4.11 for more information

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 manual).
- In addition to observing the information provided on the e-fix it is also imperative to observe the information provided by the wheelchair manufacturer (e.g. maximum climbing capacity, 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 climbing capability, maximum permissible height of obstacles, max. 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).
- Particularly observe the safety instructions and precautions from chapter 3.



When not in use, do not expose your e-fix to strong sunlight for long periods of time. This could cause the motor to heat up and in an extreme case, not be able to operate at full power. Even plastic parts age quicker under intense sunlight.



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



The risk of accidents and injuries is increased by rides without an installed pair of anti-tippers. Alber GmbH refuses to take over any liability for accidents caused by not using a pair of anti-tippers.



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

1.7 Standard scope of delivery

- Two e-fix wheels
- Control unit including handrest
- Control unit bracket
- Battery pack
- Battery holder for the battery pack incl. motor supply lines
- Battery charger
- This operating manual
- Immobiliser key

The wheelchair must have special brackets to attach the e-fix wheels. If it does not, please contact your specialist dealer or an Alber representative.

1.8 Optional accessories

- | | |
|--|---|
| <ul style="list-style-type: none"> • Intuitive attendant control • Swivel arm for the control unit • Opti-Box • Speed-Stop/Speed limit switch • Various joystick options • Various battery packs | <ul style="list-style-type: none"> • Spoke cover • External charger socket • External On/Off switch • Bumper bar for the control unit |
|--|---|

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 wheel

Bracket on wheelchair	1
e-fix wheel	2
Viewing panel on the e-fix wheel	3
Releasing device	4
Coupling ring	5
Wheelchair parking brake	6
Battery holder	7
Battery pack	8
Control unit	9
Wheel socket	10
Stub axle	11
Torque plug	12
Wheel receiver	13

Battery and battery holder

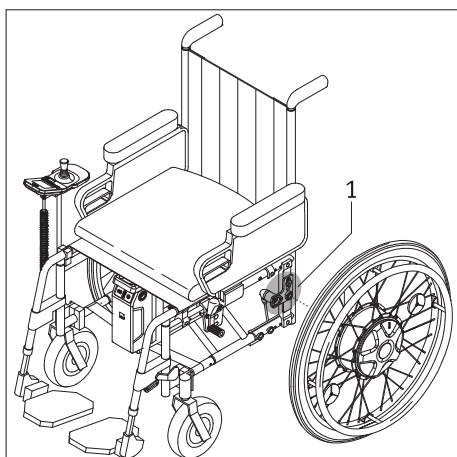
Handle	25
Info button	26
Capacity indication	27
Fault indication	28
Socket for connecting the control unit, the attendant control and the charger	29
Insertion aid on the battery holder	30

Charger

Charger	31
Charger mains plug	32
Charger plug	33
LED display	34

Control unit

Joystick	14
On/off button close range lighting	15
On/off button menu function	16
On/off button warning signal	17
Display	18
On/off button entire system	19
Immobiliser	20
Lighting (beneath the control unit)	21
Rotary switch for preselecting the speed	22
Plug with connection cable	23
Immobiliser key	24



2. Starting up

The e-fix components and any accessories you ordered will be fitted to your wheelchair by Alber or your specialist dealer and delivered so that they are ready for operation. Therefore, both sides of your wheelchair have new brackets [1] with wheel receivers for the two e-fix wheels to be inserted (see chapter 2). Please keep the manual wheelchair wheels you have used until now so that they can be used again if needed.

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 when you first start up the device to set the local language (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 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. If a screw connection has become loose, contact your authorised specialist dealer to have it retightened.



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



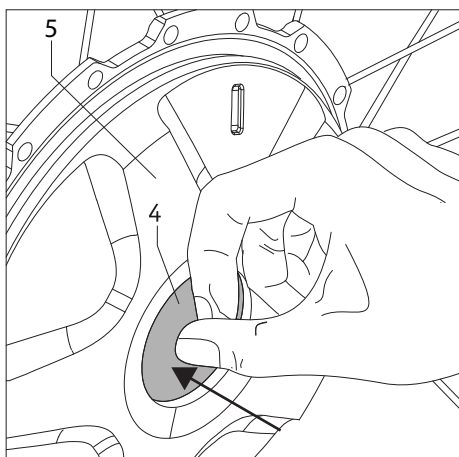
Alber GmbH provides brackets of various design (single-part or multiple-part brackets). The bracket shown in the diagrams of this operating manual may, therefore, deviate from that attached to your wheelchair.



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.



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



2.1 Installing the wheels

From a technical point of view, the stub axles [11] of the e-fix wheels are similar to the stub axles of your usual manual wheelchair wheels. In this respect you can attach the e-fix wheels to your wheelchair in the usual way.

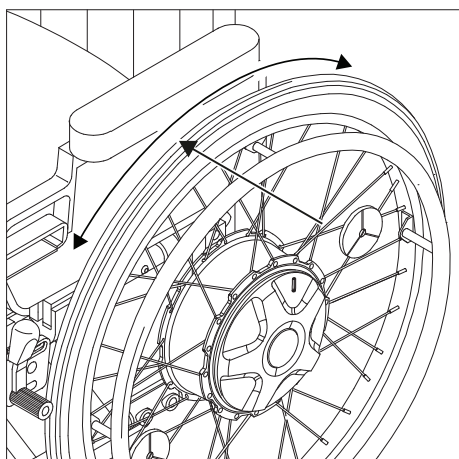
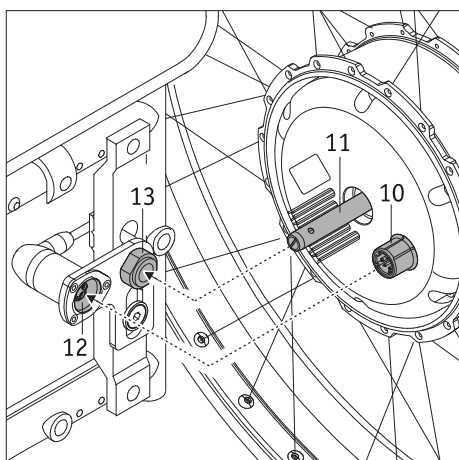
- If you have not already done so, ensure that the system is switched off at the control unit (see chapter 5.2.2).
- Ensure that the wheel is engaged (see also the bottom left picture and the adjacent explanations).
- Press the release catch [4] in the centre of the wheel hub (the coupling ring [5] must not under any circumstances be turned at the same time) and push
 - the stub axle [11] of the e-fix wheel into the wheel mount [13] and then
 - the bushing [10] of the e-fix wheel into the torque plug [12].



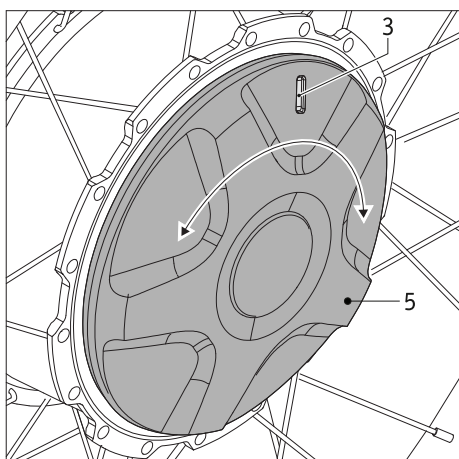
The coupling ring [5] must not under any circumstances be turned whilst pushing the release catch [4] as this can cause damage to the wheel. The wheel can then no longer be removed.



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



- Check whether the e-fix wheel can be pulled out of the wheel receiver [13] without pressing the releasing device [4]. If so, the e-fix wheel is not sitting correctly in the wheel receiver [13] and needs to be inserted again as described previously.
- Attach the second e-fix wheel on the other side of the wheelchair.



- Check the colour displayed in the viewing panel [3] 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 needs to be moved manually.

- For more details regarding the operating modes, see chapter 6.
- To change the operating mode you need to rotate the coupling ring [5] 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.



The e-fix wheels must not be able to be removed from the wheel receiver [13] without pressing the releasing device [4]. Driving is only permitted with e-fix wheels that are correctly engaged in the wheel receiver [13].



Before every trip, check that your wheelchair parking brakes [6] 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 [9] (see chapter 5.2.1) and start using your wheelchair.



If you are not yet familiar with the e-fix and its driving characteristics you should start by reducing the maximum speed to a minimum using the rotary switch [22] (see chapter 5.2.6).



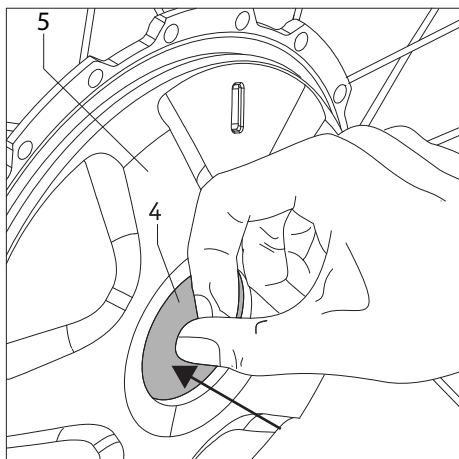
When travelling with the e-fix you must observe the safety instructions and precautions in chapter 3.



When first starting up the system and switching on the control unit, the language selection menu (see chapter 5.4) will appear in which you can set your required language.

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 disconnect 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

Generally, the two e-fix wheels will remain on your wheelchair. If they need to be removed (for example, for transport purposes), please proceed as follows:

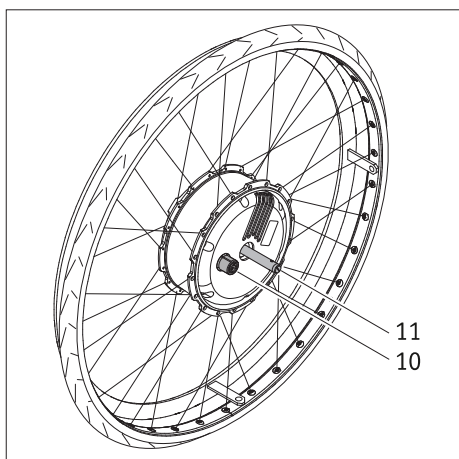
- If you have not already done so, switch off the control unit (see chapter 5.2.2).
- Ensure that the wheel is engaged (see chapter 2.1).
- Lift your wheelchair by its push handles.
- Press the release catch [4] in the centre of the wheel hub (the coupling ring [5] must not under any circumstances be turned at the same time) and pull the e-fix wheel carefully from the wheelchair.
- Proceed in accordance with instructions provided by the manufacturer of your anti-tippers.



The coupling ring [5] must not under any circumstances be turned whilst pushing the release catch [4] as this can cause damage to the wheel. The wheel can then no longer be removed.

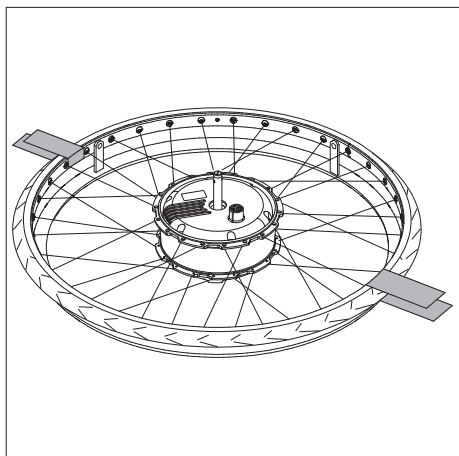


The e-fix wheel must be engaged to remove it from the wheelchair.

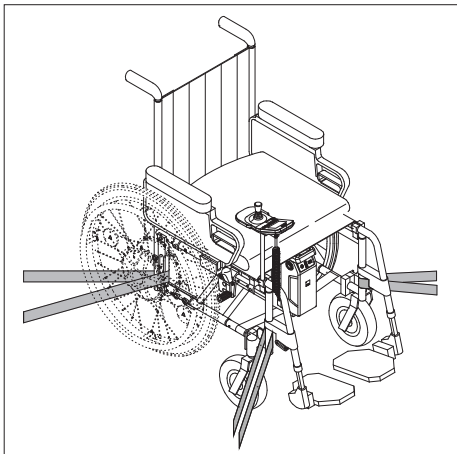


2.5 Transporting and storing the wheels as vehicle luggage

- Before removing the e-fix wheels, the control unit must be switched off.
- When laying the e-fix wheels down or setting them aside, take care of the stub axle [11] and the socket [10] on the rear of the wheel. Neither part should be damaged.
- To transport the wheelchair, follow the instructions of the wheelchair manufacturer. You might need to secure the wheelchair or certain components.
- We recommend always removing the e-fix wheels from the wheelchair and transporting them individually.



- The wheels should be stored or transported on their front side (on the push rims) or standing up.
- During transport, the e-fix wheels must be properly secured so that they do not pose a risk to the driver or passengers in the event of a sudden brake manoeuvre. To secure the wheels we recommend securing them in the vehicle with sufficiently robust straps as shown in the diagram. Please note that this is a non-binding recommendation (we accept no liability).



- Please check whether there are specific regulations regarding the securing of wheelchairs and wheels for transport in your jurisdiction and strictly adhere to these regulations.
- Alber GmbH and its agents shall not be liable for any damage resulting from non-compliance 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 or specifications of the wheelchair manufacturer. The adjacent diagram is just an example.



For information about using the wheelchair as a vehicle seat in combination with the e-fix wheels, see chapter 14

2.6 Additional instructions on driving mode

2.6.1 Travelling using the manual wheelchair wheels

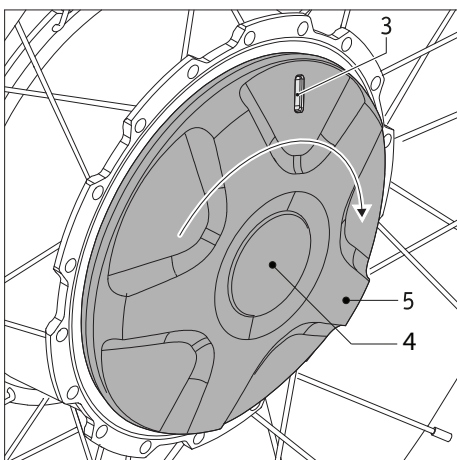
Chapter 2 has already explained how the e-fix wheels are attached to your wheelchair or removed. You can therefore choose to continue to use the conventional, manually operated wheels of your wheelchair in addition to the electrically operated e-fix wheels.



The parking brakes [6] fitted to your wheelchair are adjusted to the e-fix wheels. When using your wheelchair with its manual wheels, you may therefore need to readjust the parking brakes [6].



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



2.6.2 Travelling with the e-fix wheels in pushing mode

In addition to motorised operation, the e-fix wheels can also be manually operated, for example to push the wheelchair. If your wheelchair is equipped with 12 inch wheels, it should be pushed by an attendant.

Pushing mode is activated as follows:

- Switch off the system at the control unit (see chapter 5.2.2).
- Turn the coupling ring [5] clockwise as far as it will go; the release catch [4] must not under any circumstances be pressed in the process. A red marker is now visible in the viewing window [3].
- You are now in "pushing 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 idle:
Ensure you activate the parking brakes [6] that are fitted to your wheelchair and adjusted to the e-fix wheels. This prevents the wheelchair inadvertently rolling away.**

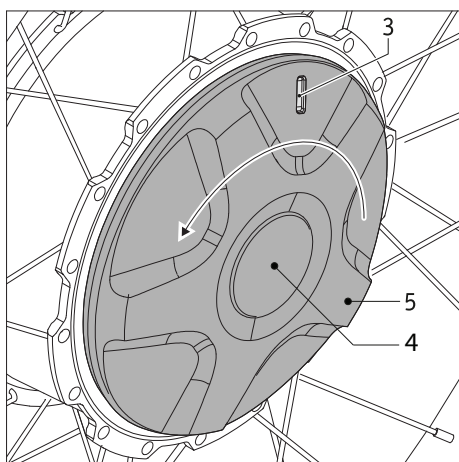


**In pushing mode:
Using the e-fix wheels in combination with a puller, for example, is not permitted. Use the manual wheels of your wheelchair for this purpose.**



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 on the control unit. Actuating the clutch with a load or while travelling can damage the internal mechanics and is thus not covered by the warranty or warranty service.

Disengaging on an incline can lead to a dangerous situation as the e-fix either switches either directly or subsequently to neutral and thus, in the worst case, may start moving in an uncontrolled manner, i.e. may rotate and/or roll downhill. Disengagement must only be performed on an incline in case of emergency and only if an accompanying person is present to secure the wheelchair manually and using the wheelchair parking brake.



2.6.3 Travelling with the e-fix wheels in motorised operation

In motorised operation of the e-fix, its wheels must be engaged.

- Turn the coupling ring [5] anti-clockwise as far as it will go; the release catch [4] must not under any circumstances be pressed in the process. A green marker is now visible in the viewing window [3].
- Switch on the system (see chapter 5.2.1). The e-fix is now ready for motorised operation.



When going 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 60 per cent.

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, you can also accelerate for a short time when driving on level ground.



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



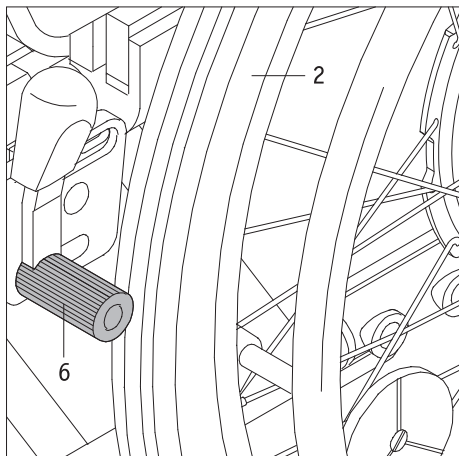
The e-fix must only be used at temperatures between -25°C and $+50^{\circ}\text{C}$. Therefore, do not expose the e-fix to any heat sources (such as intense sunlight) as this may cause surfaces to reach high temperatures.



When not in use, do not expose your e-fix to strong sunlight for long periods of time. This could cause the motor to heat up and in an extreme case, not be able to operate at full power. Even plastic parts age quicker under intense sunlight.

2.6.4 Range

All e-fix users are interested in the range of the system. In general, this is about 16 km with a standard built-in battery pack (6 Ah), about 20 km for a battery pack of 7.5 Ah. These are ideal values and relate to flat, paved terrain. Deviations may occur based on topographical conditions, the ambient temperature, the surface being driven on, the tyre pressure of the front wheels, the frame geometry, the weight of the wheelchair, the user weight, and the type of drive wheels used.



3. Safety instructions and precautions when driving with the e-fix

3.1 General instructions

Before setting off, check that the parking brakes [6] of your wheelchair have been adjusted to the e-fix wheels and therefore inadvertent rolling away is prevented. If this is not the case, please contact your Alber authorised specialist dealer and have the brakes readjusted.

The e-fix wheels are controlled by the control unit joystick (see chapter 5.2.3). When the system is switched on, each actuation of the joystick is converted into a drive command. This relates to moving both forwards and backwards as well as accelerating and braking.

We recommend that you have a short driver training session when you first receive your e-fix. This enables you to become familiar with the drive and all its possibilities.

The e-fix wheels could also be used as manual push rim wheels when switched off (see chapter 2.6.2). Only the additional weight of the wheels needs to be considered when starting off and braking.

3.2 Information on driver training

- The safety and well-being of the driver is top priority. It is therefore imperative to understand the driving 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 of your wheelchair manufacturer. This also applies to driving with the e-fix.
- Start your first driving attempts with caution and start your driving training on level ground.
- Take your driver training in areas without obstacles.
- Always adapt your speed to external conditions to be able, for example, to drive around any obstacles that suddenly appear or to stop your wheelchair.
- 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 not jerkily. Avoid jerking the joystick to its full extent, especially in potentially hazardous situations that you wish to avoid. Brake the e-fix carefully in advance until it stops.
- When releasing the joystick your wheelchair will gently brake. If you need to brake suddenly (immediate stop) then press 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. Never grip the wheel push rims "for support".
- Before using the e-fix to drive up or down a slope, practice operating the device on level ground.
- Always drive up slopes with a fully charged battery pack.
- You should exercise particular caution when driving on slopes of any kind.
- If driving 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. Drive down slopes in these cases at a slow speed. This is advisable in any case to avoid any obstacles that suddenly appear or to stop the wheelchair.
- Never travel across steep hillsides or similar conditions. Unintentionally shifting the centre of gravity could result in the wheelchair tipping over on its side.
- When driving on inclined kerbs or in similar circumstances, you may need to countersteer a little. Never drive over minor obstacles such as kerbs by driving parallel to them, drive at a right angle to the respective obstacle. This means that both wheels drive 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 driving and braking performance and the range of the e-fix.
- Never drive without anti-tippers and only remove these to drive over major obstacles. It is left to the judgement of the driver whether to call an attendant for help when there is an increased risk that the wheelchair may topple over.
- When driving on public roads you must observe the provisions of the road traffic regulations. Your wheelchair is provided with the additional equipment specified in this manual.



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



As far as possible, negotiate obstacles (e.g. kerbs) in reverse. Please refer to the wheelchair operating manual for the maximum permitted obstacle height. Drive slowly and carefully in reverse until the wheels of your e-fix touch the obstacle. Now carefully negotiate the obstacle. 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. Similarly, the system must be switched off before starting work on the wheelchair.
- For safety reasons you need to activate the parking brakes of your wheelchair, especially on uphill and downhill slopes, to avoid the wheelchair inadvertently rolling away.
- 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 that is recommended by the battery manufacturers is sand.

Before using the device:

- The e-fix must 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 instructions of the wheelchair.
- Driving the wheelchair without an attached pair of anti-tippers is not permitted.
- Attach the anti-tippers to your wheelchair.
- Before every journey, check the e-fix wheels. If the tyres have reached their wear limit (you can no longer see the tread), the e-fix must not be used.
- Before every journey, check that your wheelchair parking brakes are working correctly. You must not travel without functioning parking brakes that are adjusted to the e-fix wheels.
- Check the air pressure of the e-fix wheels at regular intervals. For details on the correct air pressure, see the outside of the tyres and the table in chapter 9. Please check the air pressure of the front wheels in accordance with the instructions and specifications of the wheelchair manufacturer. Too low an air pressure can greatly affect the driving behaviour and the range.
- 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 journey, check the correct fitting of the e-fix wheels in the wheel receiver [13] of the two brackets [1].
- The e-fix must not be used in combination with a wheelchair puller or hand bike, or other pulling devices. In these kinds of situations, use your manual wheelchair wheels instead of the e-fix wheels.

When travelling with the e-fix, make sure that:

- Before using the e-fix to drive up or down a slope, you practice operating the device on level ground.
- The maximum permissible slope specified by the wheelchair manufacturer must not be exceeded.
- Approach steps or drops extremely cautiously.
- When the system is switched on, each touch of the joystick is converted into a drive command. When stopping or waiting in potentially dangerous positions (e.g. while waiting at a traffic light, on uphill and downhill slopes or 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 a switched on or off e-fix wheel.
- Never attach objects of any kind to the e-fix wheels. This could cause damage.
- When driving on pavements, keep a safe distance (preferably the width of the 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 travelling, do not suddenly change the direction of travel to left or right at maximum speed as this could cause the wheelchair to tip sideways.
- Reduce your speed when going round a corner.
- If you intend to stop in your wheelchair on an uphill or downhill slope, 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 chair inadvertently rolling away.
- Do not travel across downhill slopes.
- Do not reach into the spokes of the e-fix wheels when travelling, or into the front wheels of your wheelchair.
- Apply your e-fix brake carefully and adapt your speed accordingly (i.e. not suddenly).
- When travelling in a vehicle, only sit in the vehicle's installed seats with associated restraint systems. Not complying with this guideline runs the risk of you and your co-passengers being injured in an accident.
- When travelling by vehicle, secure your wheelchair and the e-fix wheels according to the current applicable statutory requirements and legislation.
- When travelling on public roads and pavements in the Federal Republic of Germany, the provisions of the German Road Traffic Regulations and the Road Traffic Licensing Regulation must be observed. In other countries, the national provisions applicable there must be observed.
- The e-fix is only intended for transporting persons with restricted mobility and must not be misused, for example by children playing with it or by transporting goods.
- Operating the e-fix in the vicinity of strong magnetic fields such as those induced by holding solenoids, transformers, tomographs etc. is prohibited.
- Avoid travelling using the e-fix in adverse conditions, for example in storms, hail and in high undergrowth.



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



The risk of accidents and injuries is increased by rides without an installed pair of anti-tippers. Alber GmbH refuses to take over any liability for accidents caused by not using a pair of anti-tippers.

After using the e-fix, make sure that you:

- Switch off the e-fix when not in use to prevent inadvertently triggering drive pulses when the joystick is touched and to prevent the battery pack from discharging completely.
- Whenever the wheelchair is idle, activate the parking brakes.
- Recharge the battery pack of your e-fix as soon as possible after each trip.

3.4 Obstacles

- As far as possible, only negotiate obstacles (e.g. kerbs) in reverse.
Please refer to the wheelchair operating manual for the maximum permitted obstacle height.
- Drive slowly and carefully in reverse until the e-fix wheels touch the obstacle. Now carefully negotiate the obstacle. It is up to you to decide whether to enlist the help of another person.

3.5 Danger areas and hazardous situations

- The wheelchair driver must decide in each case whether it is safe to use the e-fix for the intended trip based on factors such as driving experience and 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 danger 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, steep slopes (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 platforms of vehicles



When driving around bends, turning the wheelchair or driving uphill or downhill, the centre of gravity of the wheelchair may be shifted so that there is a risk that the wheelchair may tip over to the side. Therefore, proceed with extreme caution and reduce the speed of the add-on drive.



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



Proceed with special caution when driving over ramps or lifting platforms of vehicles. Before lifting or lowering the wheelchair on the ramp or lifting platform, keep the e-fix a safe distance from the kerb and switch it off. Also apply the wheelchair parking brakes. This prevents inadvertent movement or drive commands.



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



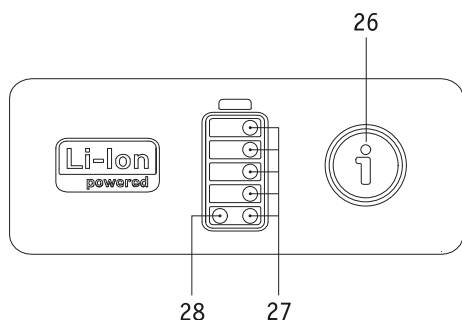
If the ground is wet, tyre grip may be poor so that there is a risk of slipping. Adapt your driving behaviour accordingly and never drive with worn tyres.



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.

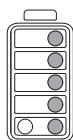
4. Battery pack

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. The lithium-ion battery pack contains chemical substances that may cause hazardous reactions if the safety instructions specified here are disregarded. Alber GmbH cannot be held liable for damage caused by non-compliance with the general information and safety instructions.

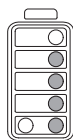


4.1 Displays on the battery pack

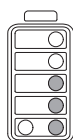
The battery pack that is required for operating the e-fix is fitted as standard underneath the wheelchair seat. The available capacity of the battery pack is displayed by white LEDs [27] that light up as soon as the control unit is switched on. If the control unit is switched off, the capacity can be displayed by quickly pressing the info button [26]. The following indications mean:



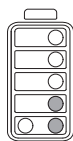
5 LEDs light up – the battery pack is charged to 100%. Avoid high speeds when driving down slopes as the current feedback in the wheels may lead to overvoltage in the battery pack and force the wheels to shut down.



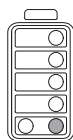
4 LEDs light up – the battery pack is charged to 80%.



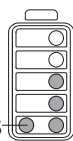
3 LEDs light up – the battery pack is charged to 60%.



2 LEDs light up – the battery pack is charged to 40%. We strongly recommend that you do not cover expansive distances without previously charging the battery pack.

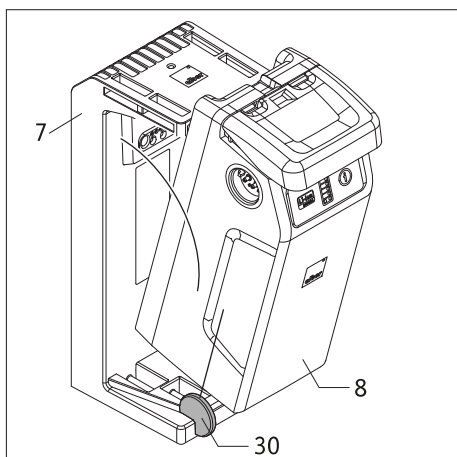


1 LED lights up – the battery is charged to 20%. Charge the battery pack before using the e-fix. If the charge is less than 20 per cent, parts of the user screen in the control unit display are shown in orange, if the charge is less than 10 per cent, these are shown in red.



If the red LED [28] lights up (fault indication), an error has occurred. This will be shown in the control unit display (see also chapter 6).

28

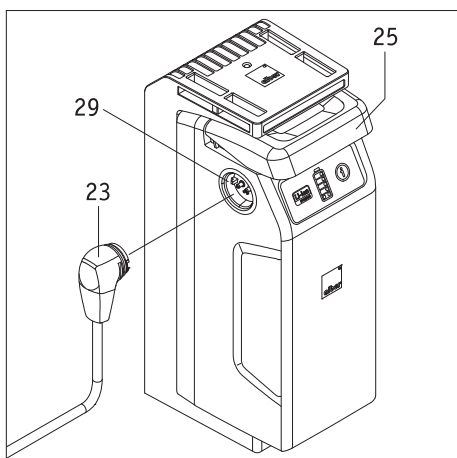


4.2 Inserting the battery pack

Generally, the battery pack will remain on your wheelchair. However, if it is removed (for example for transport purposes), you need to reinsert it in the battery holder [7] on your wheelchair.

- Insert the battery pack [8], as illustrated in the accompanying drawing, at a slant in the insertion aid [30] located on the left and right-hand side of the battery holder [7]. When it is correctly positioned the battery pack cannot slip out of place sideways.
- Turn the battery pack [8] backwards until it clicks into place in the battery holder [7].
- Check the fit of the battery pack [8] in the battery holder [7]. The battery pack fits correctly in the battery holder if it can no longer be removed without pressing the handle [25].
- If the battery pack [8] fits correctly in the battery holder [7], you then need to insert the control unit [23] plug into one of the battery pack sockets [29]. The connection is locked automatically by a magnetic closure.

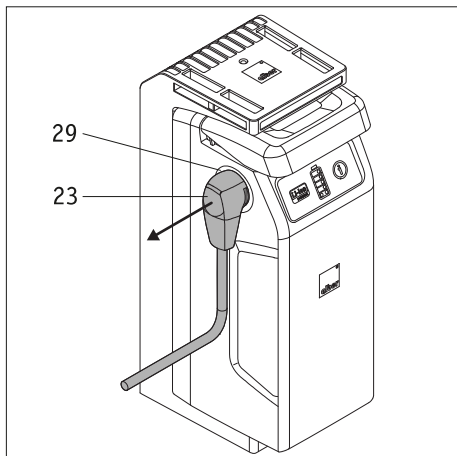
These few steps mean that your e-fix is once again ready for use.



There is a socket [29] on the left and right of the battery pack [8]. Both sockets are the same in terms of their electrics and can be used for inserting plugs of the control unit, charger and accessories.



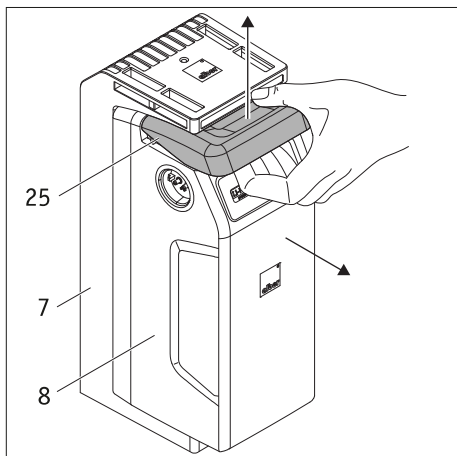
Ensure that the charger plug [33] and the sockets [29] on the battery pack are clean and that there are no metallic particles. If you detect such particles, use a dry and clean cloth to remove them.

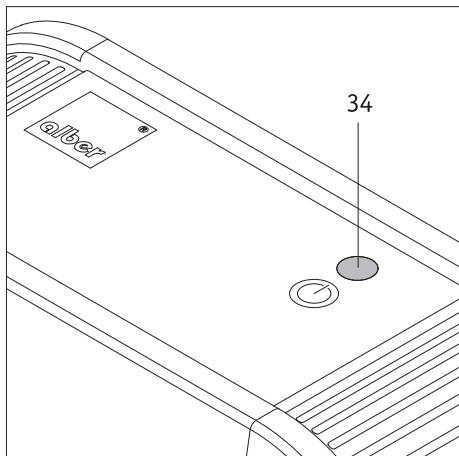


4.3 Removing the battery pack

If the battery pack needs to be removed from the battery holder, proceed as follows:

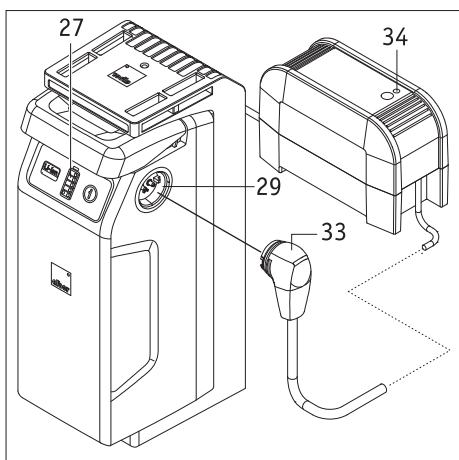
- Switch off the system at the control unit (see chapter 5.2.2).
- Remove all the plugs that are in the battery pack (e.g. the control unit plug [23]).
- Carefully pull the handle [25] of the battery pack upwards until it stops and at the same time, remove the battery pack [8] from the battery holder [7].
- Set the battery pack [8] aside. Please note the information on storage and transportation provided in chapters 4.10 and 4.11.
- The battery holder [7] remains on the wheelchair.





4.4 Displays on the battery charger

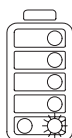
- If the charger is connected by the mains plug [32] to a live socket (100 – 240 VAC), the LED display [34] lights up green.
- If the charger is disconnected from the mains, the LED display [34] goes out.
- The charging progress is shown in the LED displays on the battery pack (see following chapter).



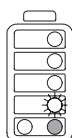
4.5 Charging the battery pack

The battery pack can remain on the wheelchair for charging, or be removed.

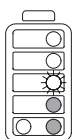
- Switch off the system at the control unit (see chapter 5.2.2).
- Secure the wheelchair against inadvertently rolling away using the parking brakes.
- Insert the plug of the charger [33] into one of the sockets [29] of the battery pack.
- Complete the charging process following the instructions contained in the operating manual that is included with the charger.
- The capacity display [27] on the battery pack enables you to follow the charging progress. The following indications mean:



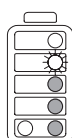
The lowest LED flashes – the battery is charged to less than 20%.



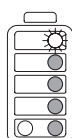
One LED flashes, 1 LED lights up – the battery pack is charged to between 20% and 40%.



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

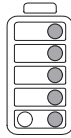


One LED flashes, 3 LEDs light up – the battery pack is charged to between 60% and 80%.

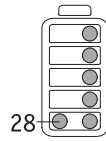


One LED flashes, 4 LEDs light up – the battery pack is charged to between 80% and 100 %.

Continued on the next page



5 LEDs light up – the battery pack is charged to 100%.
Finish the charging process.



Fault indication during charging

If an error occurs during charging, the red LED [28] (fault indication) lights up on the battery pack. Check the following:

- Whether the mains plug [32] of the charger is correctly connected to a live mains socket
- Whether the LED display [34] on the charger lights up green
- Whether the plug of the charger [33] is correctly connected to the battery pack

If charging cannot be continued and the red LED [28] is still illuminated, there is a serious fault. Contact your specialist dealer immediately.



The control unit cannot be switched off during charging.



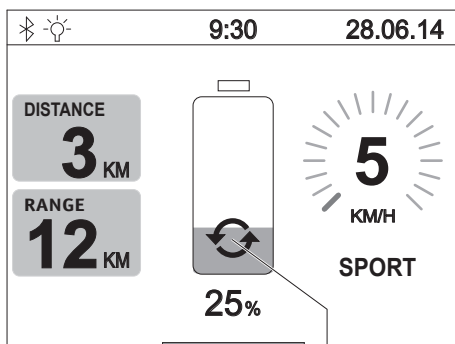
If the battery pack is on the wheelchair for charging, switch off the system before starting the charging process and secure the wheelchair using its parking brakes against inadvertently rolling away.



If the e-fix is not going to be used for an extended period (more than one day), the battery pack should not be left charging. Disconnect the charger from the mains socket first before disconnecting it from the battery pack. Before using the device, always check the charge status of the battery pack. This should be fully charged at the start of your trip.



Charge the battery always completely. Only in urgent cases you are allowed to interrupt the charging.



65

4.6 Energy recovery (recuperation)

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

If the battery pack is already charged to more than 90%, energy is not recovered. Energy recovery automatically switches on again as soon as the battery capacity drops below 90%.

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 panel display (see also table in chapter 6). In these cases, reduce your speed and if possible, avoid travelling downhill.

4.7 General information on charging the battery pack

- Do not charge the battery pack in the presence or vicinity of flammable liquids or gases.
- In the (unlikely) event of the battery pack overheating or catching on fire, you must ensure that the battery does not come into contact with water or other liquids. The only suitable extinguishing agent that is recommended by the battery manufacturers is sand.
- 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 space at least twice its volume, with sufficient ventilation that there is no hazard due to build-up of flammable gas.
- Explosive gases can be generated while charging. Keep away the wheelchair and battery charger from sources of ignition, such as flames and sparks.
- Never charge the battery pack at temperatures below 0°C or above 40°C. If you attempt a charging process outside of this temperature range, the charging process will be automatically aborted.

4.8 Safety instructions for the battery charger and the charging process

- 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 included by Alber to charge the battery pack. The charging process ends automatically when the battery pack is fully charged. This avoids overcharging.
- Do not use any other charger than the one supplied by Alber.
- Do not charge any other batteries with the charger; only charge the e-fix battery pack.
- If the e-fix is not going to be used for an extended period (more than one day), the battery pack should not be left on the e-fix. Disconnect the charger from the mains socket first before disconnecting it from the battery pack.
- Do not expose the charger to moisture of any kind during charging (water, rain water, snow, etc.).
- Be aware of condensation. If the charger is brought from a cold 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.
- Do not 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 charging cable so that no-one can tread on it or trip over it. Do not expose the two cables to any other harmful influences or stresses.
- Do not operate the charger if the power cable, the charging 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 children.
- The charger is designed to operate only with mains alternating voltage of 100 V to 240 V.
- Never attempt to disassemble or modify the charger.
- Do not cover the charger during the charging process or place any objects on top of the device.
- Never subject cable and 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 charging cable to any metal objects.
- Ensure that the plug is firmly inserted in the socket.
- Do not touch the mains plug or the charging 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 inserting them, clean the plugs using a dry cloth.
- Once the charging process is complete, first disconnect the plug of the charger from the socket and then disconnect the charging plug from the socket on the battery pack.
- Ensure that after disconnecting the charger, no moisture can get into the battery socket [29].



Before and after charging, ensure that the charger plug [33] and the sockets [29] on the battery pack are clean and that there are no metallic particles. If you detect such particles, use a dry and clean cloth to remove them.



The charger plug is magnetic. Therefore prevent the plugs coming into contact with medical implants, electronic storage media, bank cards or similar items.

4.9 Safety instructions for the battery pack

- Before using the e-fix 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 below 0°C or above 40°C. If you attempt a charging process outside of this temperature range, the charging process will be automatically aborted.
- The battery pack must not be exposed to heat (e.g. radiators) or fire. External heat exposure can lead to the battery pack exploding.
- 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 that is recommended by the cell manufacturers is sand.
- Your e-fix uses power in all operating modes. 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, opening the battery voids any warranty claim.
- Never connect the battery pack socket [29] to metallic objects, or ensure that the contacts do not come into contact with metallic objects (for example with metal filings).
- If the socket [29] 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. Please contact your specialist dealer to learn about the proper procedure that must be used for returns and repairs (see also chapter 4.11).
- 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. Therefore 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 rather than 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 service life, store the battery pack at a temperature from 18°C to 23°C, an atmospheric pressure from 500 to 1060 hPa and at a humidity of 0 to 80%. The charge status under these conditions should be 50%.
Under this conditions the shelf life of the battery pack is 1 year.
- Do not expose the battery pack to moisture of any kind during storage (water, rainwater, snow, etc.).
- Before storing it, charge the battery pack and check its charge status every month. If necessary, charge the battery pack if the charge status drops to below 50%.

4.11 Safety instructions and precautions on how to transport and ship the battery pack

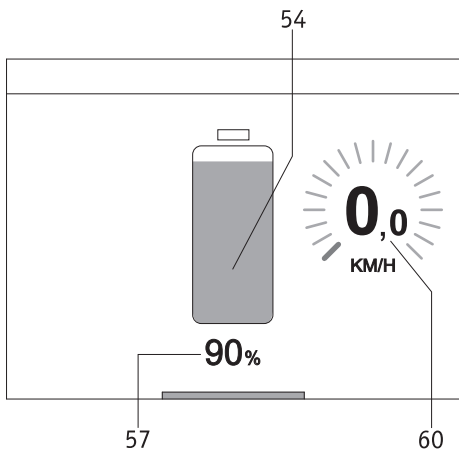
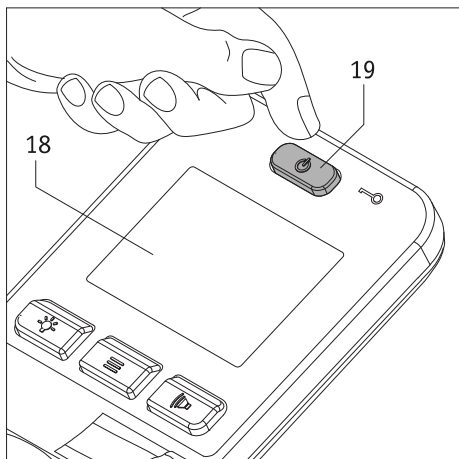
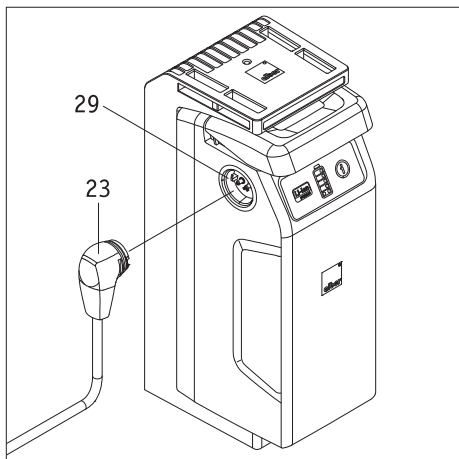
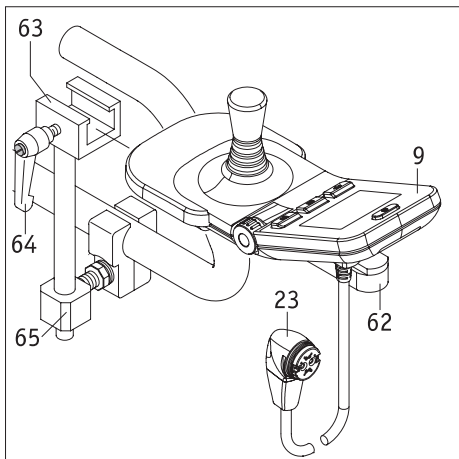
- Lithium-ion cells are used in the e-fix battery pack. Transport and shipping of the battery pack are, therefore, subject to all applicable statutory requirements, which must be strictly observed. For instance, a defective battery pack must never be transported by plane or carried as hand luggage or hold baggage.
- If your battery pack is defective, take it personally to your specialist dealer as shipping lithium-ion batteries by post or other carriers is subject to strict rules and regulations. Once again, we recommend that you contact your specialist dealer.
- 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.



Make sure you keep the packaging container of the battery pack in case you need to transport it.



Discuss the necessary measures with your specialist dealer before sending the battery pack.



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

A holder [65] has been fitted to your wheelchair to secure the control unit.

- Push the guide rail [62] fitted to the underside of the control unit [9] into the sliding part [63].
- Secure the control unit [9] in the sliding part [63] using the locking lever [64].
- Insert the plug [23] of the control unit into the socket [29] of the battery pack. The connection is locked automatically by a magnetic closure.
- The control unit is removed in the reverse sequence.



Before inserting the plug [23] in the socket [29] of the battery pack, ensure that both parts are clean and there are no metallic particles on them. If you detect such particles, use a dry and clean cloth to remove them.



The control unit plug [23] is magnetic. Therefore prevent the plug coming into contact with medical implants, electronic storage media, bank cards or similar items.

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 [9]. **Do not touch the joystick or controls of the control unit when switching the system on. If you do, you will get an error message.**

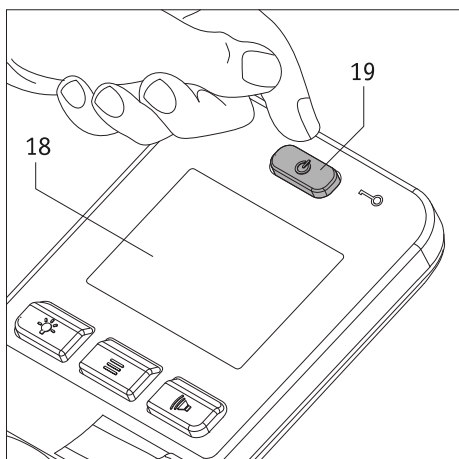
- Press the on/off button [19] briefly. The system is switched on and the Alber e-fix start screen is shown in the display [18] for about 3 seconds. The user screen illustrated in the adjacent diagram then appears (see chapter 5.3.1 for the meaning of the symbols).
(The left-hand illustration may vary from the actual display on your control unit because functions may be activated or deactivated.)
- If you are not yet familiar with the e-fix and its driving characteristics you should start by reducing the maximum speed to a minimum using the rotary switch [22] (see chapter 5.2.6).
- Using the joystick [14] you can now start the two e-fix wheels moving. However, make sure you have read the safety instructions and precautions in chapter 3.
- If the switched on wheels do not move, the system will automatically cut off after 10 minutes. For details, see 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.



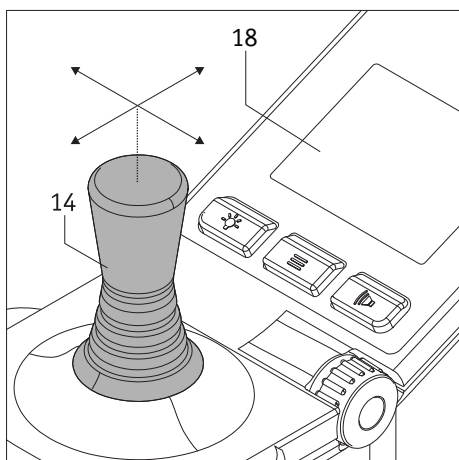
The language selection menu only appears the first time you switch on the control unit (see chapter 5.4). In this menu you can set which language you wish the information in the display to be shown.



5.2.2 Switching off the system

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

- Press button [19]. The control unit is switched off, the display [18] disappears.
- Apply the parking brake of your wheelchair so that it cannot roll away.



5.2.3 Driving with the joystick

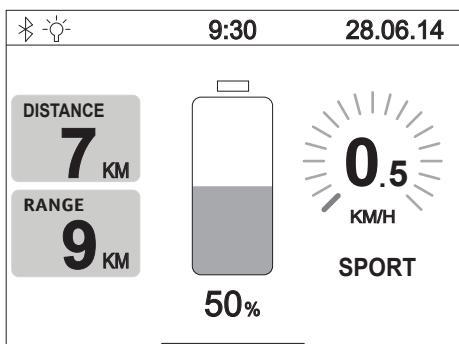
The e-fix is driven using the joystick [14] by means of which the driver can determine the speed and the direction of travel.

Even slightly moving the joystick in the required travel direction starts travel at low speed. This increases, the further the joystick is extended. The pre-set maximum speed (see chapter 5.5) is achieved by fully extending the joystick. When travelling in reverse the speed is automatically reduced to 50 per cent for safety reasons.

In the display [18] the speed is shown in position [60] as follows:

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

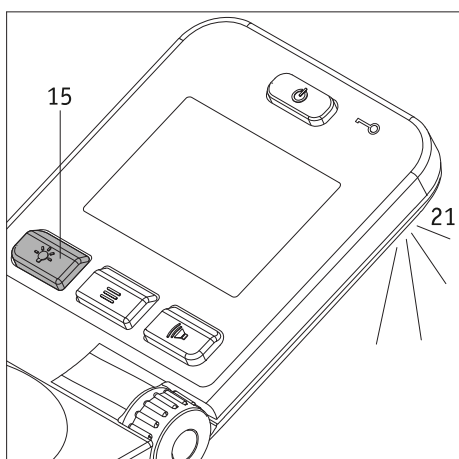
When travelling in reverse 0 km/h is displayed as a white number.



Start your first travelling attempt at a low speed to get used to the driving characteristics of the e-fix.



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

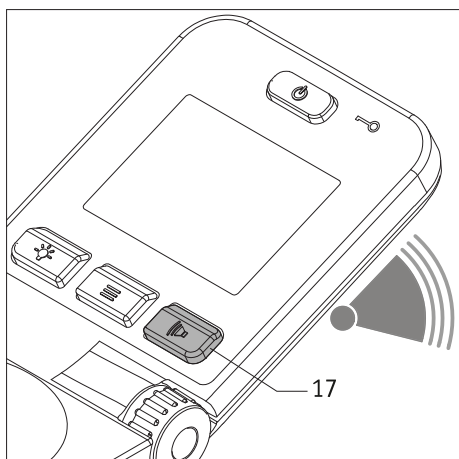


5.2.4 Spotlight

On the underside of the control unit there is a spotlight [21]. This enables items that are located relatively close to the control unit to be illuminated. The spotlight is switched on or off by briefly pressing button [15].

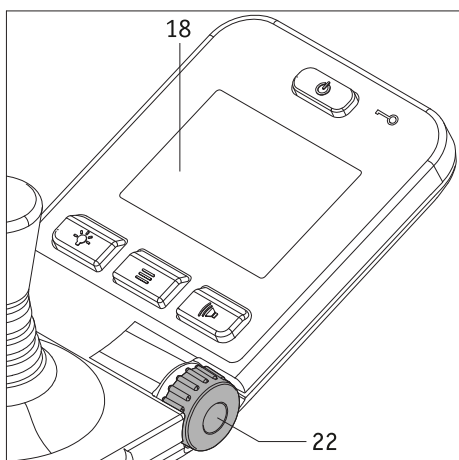


The spotlight is used exclusively to provide minimal illumination of the area around the control unit. When travelling at night in public road traffic you must adhere to the national provisions of the respective country and attach lights to your wheelchair if applicable.



5.2.5 Warning signal

By pressing button [17] a warning signal sounds 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 extending the joystick [14].

Different driving situations, for example indoors, can also limit the maximum speed achieved. Using the rotary switch [22], select the maximum speed you require. This is shown in the display [18] in position [60] as a white number and green bar chart.

The maximum speed that you specify in this way is achieved as soon as you fully extend the joystick [14]. When travelling in reverse the speed is automatically reduced to 50 per cent for safety reasons.

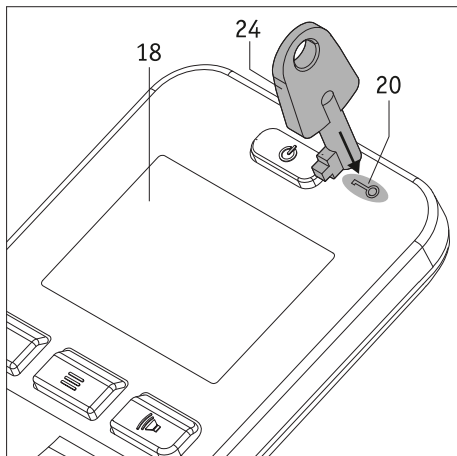
The maximum speed can be set when the wheelchair is idle and when you are travelling. The set value is then shown in the display for about 3 seconds before the actual speed you are travelling at is displayed again.



Start your first travelling attempt at a low speed to get used to the driving characteristics of the e-fix.



Adapt the speed to the respective travelling situations. Reduce the maximum speed, in particular in difficult driving 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 [24] for about 2 seconds directly on the key symbol [20] on the control unit. This activates the immobiliser and the message in the adjacent diagram “Immobiliser active” is shown in the display.
- The e-fix can no longer be operated. The “Immobiliser active” message remains visible in the display until the e-fix is directly switched off by you or by the automatic cut-off. However, the immobiliser remains active!
- When the e-fix is switched on again, the immobiliser – which is still active – is shown once again in the display.

Deactivating the immobiliser

Place the key [24] for about 2 seconds directly on the key symbol [20] on the control unit. This deactivates the immobiliser and the display returns to the user screen (see chapter 5.3.2).

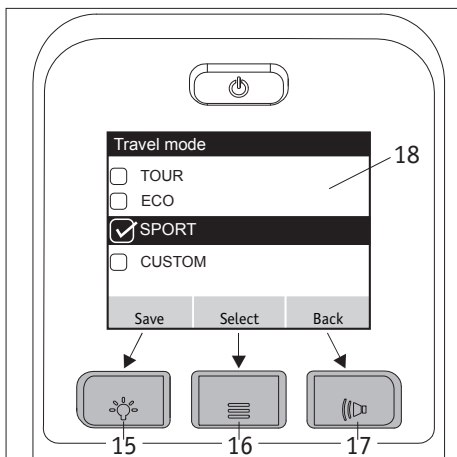
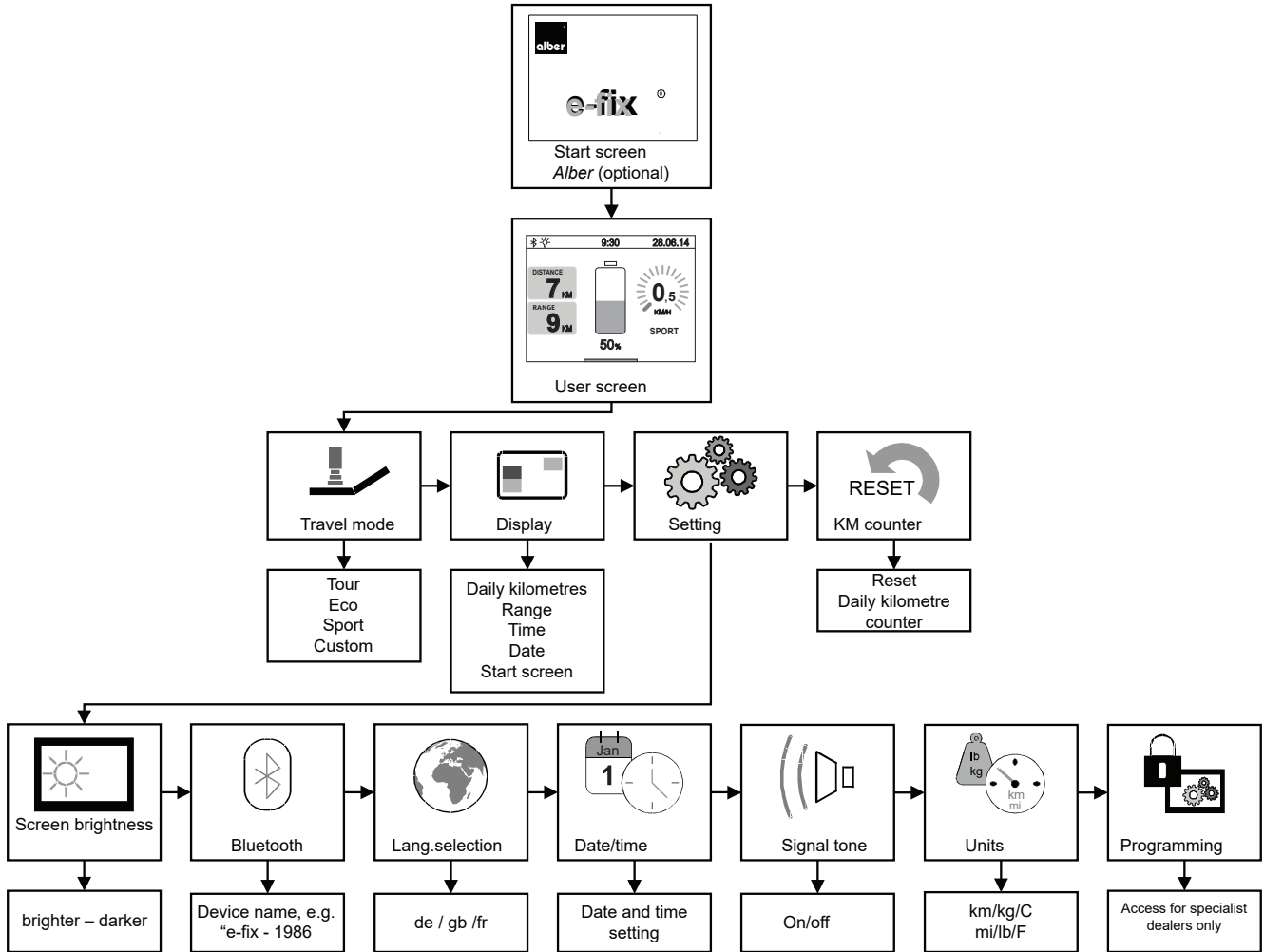


The immobiliser is not an anti-theft device because the drive wheels can be disengaged and the wheelchair can then be pushed away.

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

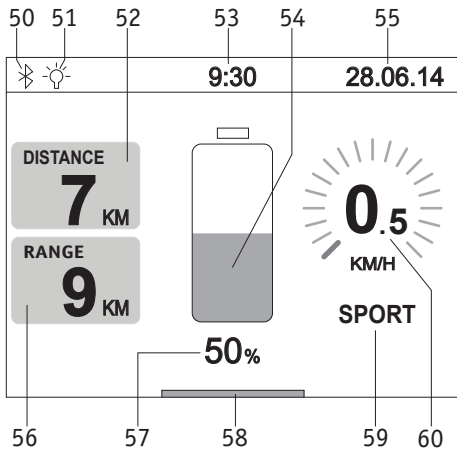
Saving or setting a parameter: Press button [15]

Select display

Jumps to a menu or sub menu or activates a parameter:
Press button [16].

Back display

Goes back one level (without saving): Press button [17].



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 [54], [57], [58] and [60] are displayed constantly, all other symbols can be set up individually by the user (for details see the following chapter).

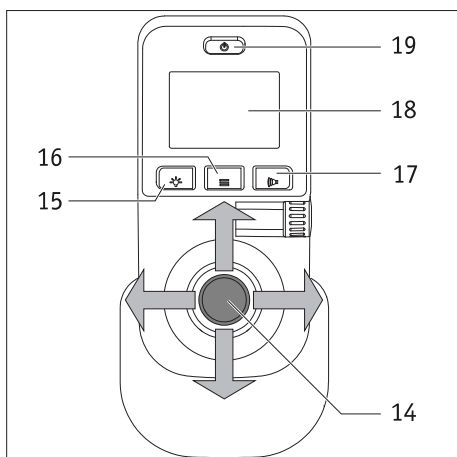
One exception is the symbol [59]. The user modes TOUR, ECO, SPORT and CUSTOM are stored here (see chapter 5.3.4 for their features). With the exception of the TOUR user mode, all modes are shown in the display.

The following symbols mean:

- [50] = Bluetooth module in the control unit. A connection can be established (see chapter 5.3.7).
- [51] = The symbol is automatically displayed as soon as the spotlight (see chapter 5.2.4) is switched on using button [15].
- [52] = Displays the kilometres travelled since the start or the last RESET.
- [53] = Current time (needs to be pre-set – see chapter 5.3.7).
- [54] = Visual indication of the capacity of the battery pack.
- [55] = Current date (needs to be pre-set – see chapter 5.3.7).
- [56] = Distance that can still be travelled under ideal conditions and with the displayed residual capacity of the battery pack.
- [57] = Indication of the capacity of the battery pack in per cent.
- [58] = Bar display “system is ready for use”.
- [59] = Pre-set user mode.
- [60] = Pre-set maximum speed (displays as a number and circular bar chart), see chapter 5.2.6.

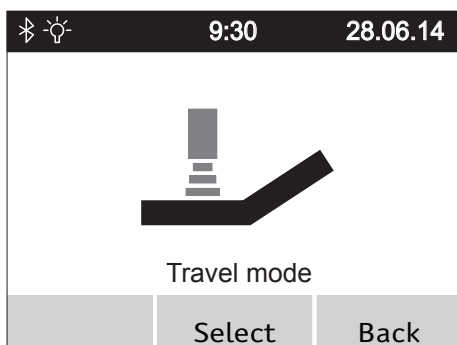
Most of the displays in the user screen are presented in a white colour on a black background. The displays [54], [59] and [60] appear in a green colour.

If the battery pack achieves a residual capacity of 20 per cent, the displays [54], [59] and [60] are shown in orange, from 10 per cent the residual capacity is shown in red. In both cases the bar display [58] appears across the full width of the screen and the range is no longer displayed in symbol [56]. These kind of symbols should remind you to recharge the battery pack as soon as possible.



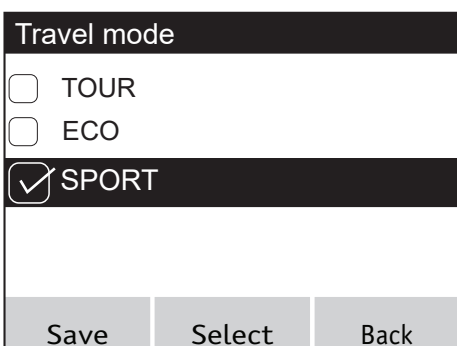
5.3.3 Accessing the menus

- To access the different menus you need to press the menu function button [16] while the user screen is displayed. If this occurs, the display [18] shows, in turn, the menu user mode, display, setting, kilometre counter, reset.
- Move the joystick [14] to the left or right to access the required menu.
- Press the menu function [16] button as soon as the menu you require is shown in the centre of the display [18]. This takes you to the sub menu to set the various parameters (see the following chapter).



5.3.4 User mode menu

- Select the user mode menu and press the menu function button [16] to access the associated sub menu.
- The sub menu shows the user mode screen, which lists the parameters TOUR, ECO, SPORT and (if activated) CUSTOM.
- Move the joystick [14] forwards or backwards to move the parameters through a black bar on the display.
- The parameter highlighted by the black bar is activated by moving the joystick [14] to the left or right, or pressing button [16]. When the parameter is active, a ticked square is displayed to the left.
- If the required parameter has been activated, it needs to be saved now. Press button [15] on the control unit to save it.
- Select further menus or press button [17] again to return to the user screen.



User mode features

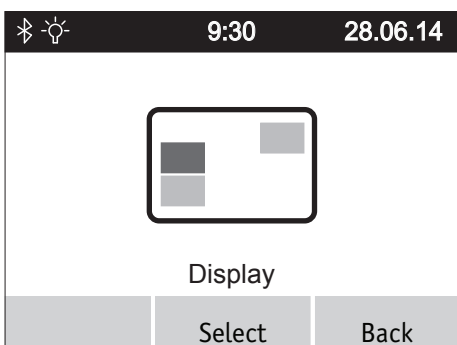
TOUR: Standard settings (not shown in the user screen in position [59]).

ECO: reduced acceleration and deceleration values.

SPORT: dynamic tuning of acceleration and turning performance.

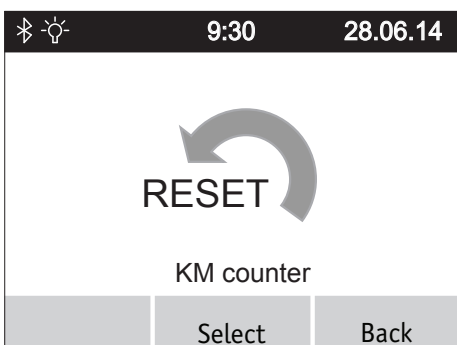
CUSTOM: only active if the user features parameters have been customised in the service menu by your specialist dealer. If CUSTOM is active, the other user modes are deactivated.

Please contact your specialist dealer if you would like to change the features.



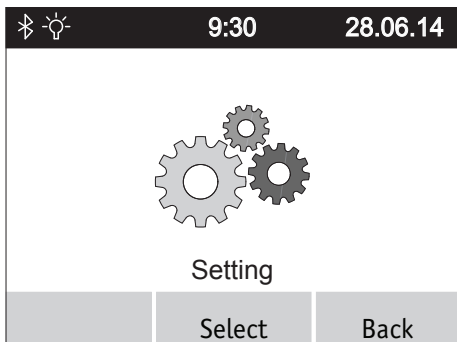
5.3.5 Display menu

- Select the *display* menu and press the menu function button [16] to access the associated sub menu.
- The sub menu lists the parameters daily kilometres, range, time, date and start screen.
- Move the joystick [14] forwards or backwards to move the parameters through a black bar on the display.
- The parameter highlighted by the black bar is activated by moving the joystick [14] to the left or right, or pressing button [16]. 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 [15] on the control unit to do this.
- Select further menus or press button [17] again to return to the user screen.



5.3.6 Reset daily kilometres menu

- Select the *reset daily kilometres* menu and press the menu function button [16] to access the associated sub menu.
- The sub menu displays the reset daily kilometres screen, which indicates the kilometres travelled.
- Press button [15] of the control unit to reset the daily kilometre counter to “zero”, or button [17] to return to the user mode menu without resetting the daily kilometre counter.
- Select further menus or press button [17] again to return to the user screen.



5.3.7 Setting menu

Select the setting menu and press the menu function button [16]. This takes you to a sub menu with the settings *Screen brightness*, *Bluetooth*, *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 already 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 [15] (save), [16] (jump to a sub menu) and [17] (go back a level without saving).

Screen brightness sub menu

By moving the joystick [14] to the left or right you can reduce or increase the brightness of the screen displays.

Bluetooth sub menu

View the device name and MAC address (Bluetooth chip).

Example: e-fix - 1986

Lang.selection sub menu

By moving the joystick [14] 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 [14] to the left or right you can navigate through the individual parameters.

By moving the joystick [14] 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

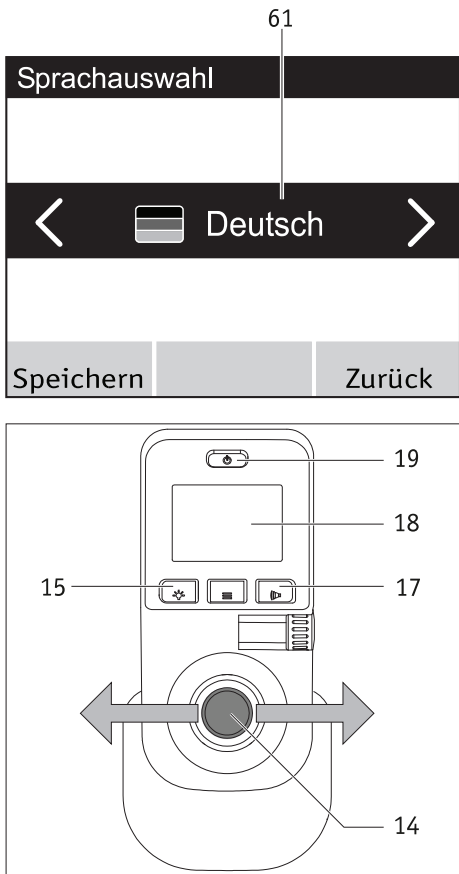
By moving the joystick [14] to the left or right you can switch the control unit signal tones on or off.

Units sub menu

By moving the joystick [14] 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 user features 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 required language. This step is generally carried out by your specialist dealer before delivering the e-fix. If this is not the case, proceed as follows:

- Turn on the control unit by pressing the on/off button [19]. The display [18] first shows the Alber 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 [14] to the left or right displays the available language variants in the selection field [61] of the display.
- When the language you require is displayed you need to press button [15] on the control unit. This permanently saves the selected language. You are then taken automatically back to the user menu.
- By pressing button [17] 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.

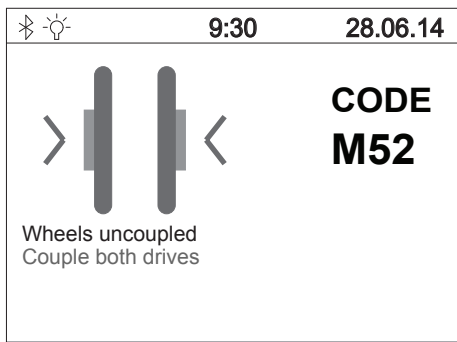
i If you did not save any language when you first started up the e-fix, the language selection screen will be displayed again when you next switch on the control unit.

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

5.5 User parameters

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

If the user features have been customised to your individual requirements, the user mode menu (see chapter 5.3.4) and the user screen indicate CUSTOM. In this case you cannot select any other user 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 panel display that is not included in the following table, please also contact your specialist dealer.

Display	Fault	Remedy
B10	Energy recovery is not possible because the battery pack has too much power	<ul style="list-style-type: none"> • Switch the system off and then on again. • If possible continue driving uphill.
B11	Energy recovery too high, speed is reduced	<ul style="list-style-type: none"> • Continue to drive carefully and avoid driving downhill.
B12	Energy recovery high	<ul style="list-style-type: none"> • Reduce your speed and avoid driving downhill.
B13	Discharge current too high	<ul style="list-style-type: none"> • Switch the system off and then on again. • Continue to drive carefully.
B14	Discharge current too high, speed is reduced	<ul style="list-style-type: none"> • Continue to drive carefully and avoid driving uphill.
B15	Discharge current high	<ul style="list-style-type: none"> • Reduce your speed and avoid driving uphill.
B16 to B18	Battery pack voltage is too low	<ul style="list-style-type: none"> • Charge the battery pack.
B19 to B21	Voltage in the battery pack is too high during recovery	<ul style="list-style-type: none"> • Switch the system off and then on again. • Continue to drive carefully.
B22	Battery temp. too low. Speed is reduced	<ul style="list-style-type: none"> • Continue to drive carefully and avoid driving downhill.
B23	Battery temperature low	<ul style="list-style-type: none"> • Reduce your speed and avoid driving downhill.
B24	Battery temp. too low	<ul style="list-style-type: none"> • Switch the system off and then on again. • Continue to drive carefully.
B25	Battery temperature too low, speed is reduced	<ul style="list-style-type: none"> • Continue to drive carefully and avoid driving uphill or downhill.
B26	Battery temperature low	<ul style="list-style-type: none"> • Reduce your speed and avoid driving uphill or downhill.
B27	Energy recovery is not possible because the battery temperature is too high	<ul style="list-style-type: none"> • Switch the system off and then on again. • Continue to drive carefully.
B28	Battery temp. too high. Speed is reduced.	<ul style="list-style-type: none"> • Continue to drive carefully and avoid driving uphill or downhill.
B29	Battery temperature high	<ul style="list-style-type: none"> • Reduce your speed and avoid driving uphill or downhill.
B30	Battery temp. too high	<ul style="list-style-type: none"> • Switch the system off and then on again. • Continue to drive carefully.
B31	Battery temp. too high. Speed is reduced	<ul style="list-style-type: none"> • Continue to drive carefully and avoid driving uphill or downhill.
B32	Battery temperature high	<ul style="list-style-type: none"> • Reduce your speed and avoid driving uphill or downhill.
B33 to B39	Check electronics, battery pack failure	<ul style="list-style-type: none"> • Switch the system off and then on again. • The battery pack may be defective.

Display	Fault	Remedy
C28	Joystick was extended on start-up	<ul style="list-style-type: none"> Do not touch the joystick when switching the system on.
I04	Attendant control communication fault	<ul style="list-style-type: none"> Switch the system off and then on again.
I05	Attendant control button was pressed on start-up	<ul style="list-style-type: none"> Switch the system off and then on again.
I08, I09	Attendant control collision protection was activated	<ul style="list-style-type: none"> Deactivate attendant control. Switch the system off and then on again.
M10, M11	Check electronics, drive failure	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Reduce your speed. Let the drives cool down. Swap the two wheels from the left to the right and from the right to the left-hand side.
M16 to M19	Drive overload error	<ul style="list-style-type: none"> The load is too high for the drives. Prevent overloading.
M20 to M51	Check electronics, drive failure	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Engage the right wheel.
M53	Left drive disengaged	<ul style="list-style-type: none"> Engage the left wheel.
M54	Left and right drive disengaged	<ul style="list-style-type: none"> Engage both wheels
M55, M56	High drive temperature	<ul style="list-style-type: none"> Reduce your speed. Let the drives cool down.
O10 to O16	Error Opti-Box	<ul style="list-style-type: none"> Contact your special dealer
S10, S11	Cannot communicate with the wheel	<ul style="list-style-type: none"> 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	Cannot communicate with the battery pack	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Check all plug connections.
S15	Communication was interrupted during travel	<ul style="list-style-type: none"> Check all plug connections Switch the system off and then on again.
S16	Error communication Opti-Box	<ul style="list-style-type: none"> Contact your special dealer
S17	Error communication external	<ul style="list-style-type: none"> Contact your special dealer
	<p>Only for control units with Bluetooth (Art. No. 1591936): The Bluetooth icon appears in red on the e-fix display and is not displayed in grey even after several restarts.</p>	<ul style="list-style-type: none"> Contact your special 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, disposal

7.1 Storage

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

- Store the wheelchair according to the wheelchair manufacturer’s specifications.
- Protect the e-fix components 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 charger plug [33], the control unit plug [23], or in the battery pack sockets [29].
- Check whether a safety inspection (see chapter 7.4) is required before recommissioning and arrange for said inspection if necessary.

7.2 Care



Water ingress can destroy the drive.

For this reason do not clean the individual components of the e-fix under running water or with a high-pressure cleaner.

Ensure that no liquid or moisture reaches the wheel hub. Cleaning the e-fix is therefore a task that must be carried out with special care. Please observe the following instructions in particular:

- 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 shall not be liable for 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, Alber agent or authorised specialist dealer. Your e-fix can then be given to somebody else.

Before the e-fix is re-used, its safety must be checked. The brackets with which the e-fix wheels are attached to the wheelchair can be easily and quickly removed by your authorised specialist dealer or Alber agent and fitted to another.

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. To do this, use a detergent suitable for wet disinfection and adhere to the use instructions.

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.

They might, however, contain substances that are hazardous to the environment, if the parts are disposed of in locations (e.g. landfills) that are not destined for the disposal of such materials according to the applicable statutory regulations.

The product is labelled in accordance with European Directive (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 inform yourself of 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 safe disposal.

8. Warranty, guarantee and liability

8.1 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.

8.2 Guarantee of durability

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

The durability guarantee 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.

8.3 Liability

Alber GmbH as the e-fix manufacturer shall not be liable for the safety of the product, if:

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

9. Technical data

	e-fix E35	e-fix E36
Wheel		
Range (*)	up to 16 km according to ISO 7176 - 4	up to 20 km according to ISO 7176 - 4
Nominal gradient:	120 kg: up to 11,3° (20%)	120 kg: up to 11,3° (20%) 160 kg: up to 8,5° (15%)
Speed	0.5 – 6 km/h	0.5 – 6 km/h
Always observe the limit values specified by the wheelchair manufacturer and country-specific road traffic legislation.		
Motor power rating	2 x 110 W	2 x 150 W
Operating voltage	36 V	36 V
Operating temperature	-25°C to +50°C	-25°C to +50°C
Weight of person	max. 120 kg	max. 160 kg
Max. overall weight	max. 170 kg	max. 210 kg
Battery pack		
Battery type	Lithium-ion cells, leakproof and maintenance free	
Rated operating capacity	36 V	36 V
Charging temperature	0°C to 40°C	0°C to 40°C
Protection class	IPx4	IPx4
Rated capacity C ₅ of the battery	6,0 Ah (standard) / 7,5 Ah (optional)	7,5 Ah (standard) / 6,0 Ah (optional)
Weight of components		
Wheel	7.9 kg	7.8 kg
Battery pack	2.1 kg	2.1 kg
Control unit	0.6 kg	0.6 kg
Battery holder	0.8 kg	0.8 kg
Total weight	19.3 kg	19.1 kg

Wheel tyres of e-fix E35

Name	Model and type	Size (inches)	Air pressure in bar and kPa
Schwalbe Downtown	HS 342, Active Line, black/grey, wired	22 x 1 3/8 or 24 x 1 3/8	puncture proof

Wheel tyres of e-fix E36

Name	Model and type	Size (inches)	Air pressure in bar and kPa
Schwalbe Marathon Plus	HS 440, Evolution Line, black/grey, wired	24 x 1 3/8	min. 6.0 / max. 10.0 bar min. 600 / max. 1000 kPa

(*) The range depends on the terrain and the prevailing driving 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.

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

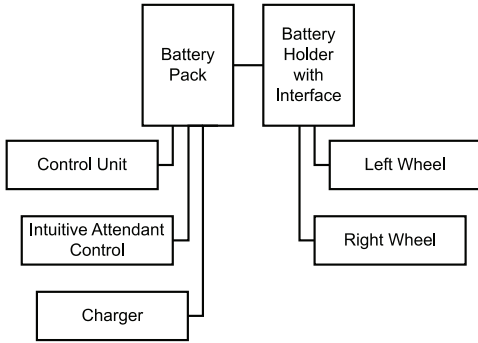
Battery charger

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

Miscellaneous

All e-fix components are protected against corrosion

Block diagram




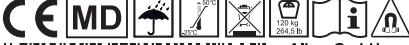



CE The e-fix and the corresponding off-board charger comply with the applicable sections of standard EN 12184 for electric wheelchairs and standard ISO 7176-14 for wheelchairs and comply with the EU Medical Devices Directive (MDR) 2017/745. The e-fix is a Class I medical device.

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

10. Labels






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

Systemnr. / System No. Produkt / Modell [Product / Model] Betriebsspannung [Nominal Voltage] Motor Nennleistung [Rated Power] Max. Geschwindigkeit [Max. Speed] Nenn-Steigung [Rated Slope] Batterie-Typ [Battery Type]	E35200311 e-fix E35 36 V 2 x 110 W 6 km/h [3,73 mph] 11,3° [20%] Lithium-Ionen	  2020-02-07  (01)04046727166397 (11)200207 (21)E35200311
  Alber GmbH Vor dem Weissen Stein 14 D-72461 Albstadt Made in Germany		

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.

Label e-fix E35

Systemnr. / System No. Produkt / Modell [Product / Model] Betriebsspannung [Nominal Voltage] Motor Nennleistung [Rated Power] Max. Geschwindigkeit [Max. Speed] Nenn-Steigung [Rated Slope] Batterie-Typ [Battery Type]	E36200099 e-fix E36 36 V 2 x 150 W 6 km/h [3,73 mph] 8,5° [15%] Lithium-Ionen	  2020-02-07  (01)04046727166403 (11)200207 (21)E36200099
  Alber GmbH Vor dem Weissen Stein 14 D-72461 Albstadt Made in Germany		

Label e-fix E36

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

“Maintenance” label

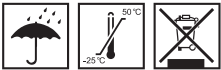
This label indicates the time of the next maintenance due. It is located on the back of the e-fix wheel.



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



Bitte vergessen Sie nicht, die Akku-Packs nach jedem Gebrauch nachzuladen, um deren volle Leistungsfähigkeit zu erhalten.

Please make sure that the battery packs are recharged after each partial discharge i.e. after each use, to maintain their full capacity.

Typ: Lithium-Ionen Akku-Pack 10INMCR19/66-3
Type: Lithium-Ion battery-pack 10INMCR19/66-3

Auslaufsicher / Nonspillable battery

Nennspannung: 36 V

Rated voltage: 36 V

Nennkapazität: 6,0 Ah

Rated capacity: 6,0 Ah

Nennenergie: 216 Wh

Rated energy: 216 Wh

Betriebstemperatur: -25°C ... +50 °C

Operating temperature: -13°F ... 122°F

Ladetemperatur: 0°C ... +40 °C

Charging temperature: 32°F ... 104°F

Kurzschluss vermeiden / Avoid short circuit

Nur Original-Ladegerät gemäß Gebrauchsanweisung verwenden. / Use only the original battery charger provided with the unit, according to the operating instructions.



Beachten Sie die Hinweise zum Laden und zum Transport in der Gebrauchsanweisung.
For charging and transportation, read operating instructions.



Alber GmbH
Vor dem Weißen Stein 21
72461 Albstadt, Germany
Phone: +49 7432 2006-0
Fax: +49 7432 2006-299

Battery pack labelling

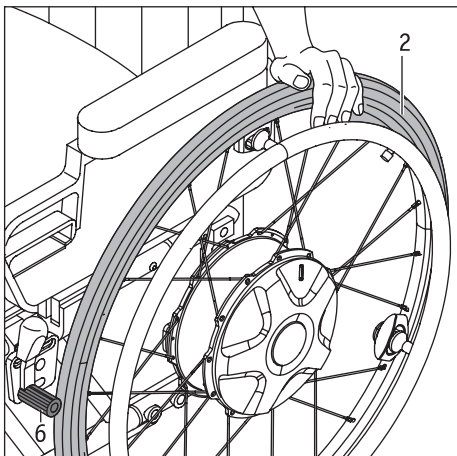
The information shown in the accompanying diagram is engraved on the reverse of the battery pack or attached as a sticker.

11. Product safety information

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

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

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



12. Important information about changing seats

- Switch off the system (see chapter 5.2.2)
- Tighten the handbrake [6] before changing seats into or out of the wheelchair, so that the wheelchair cannot roll away unintentionally.
- When you are changing seats: Prop up yourself as described in the user manual of your wheelchair, or on the tyre [2] of the e-fix wheel.

13. Important information about air transport

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

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



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

14. 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.

15. 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/>

16. Your Contact Person (USA only)

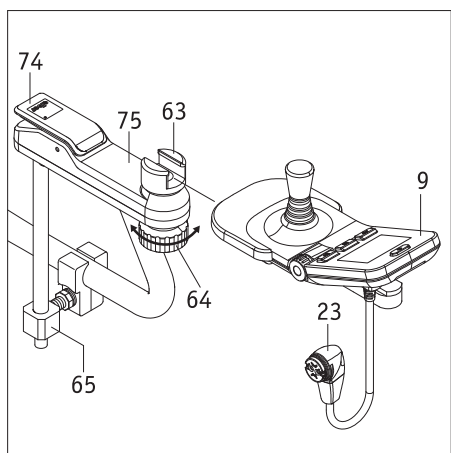
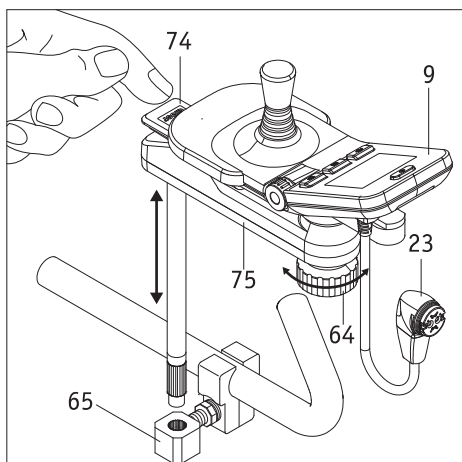
If you have problems with the efix components (including the battery-pack and the charger) please contact your local dealer or

Alber USA LLC

1005 International Drive

Oakdale, PA 15071

Phone: (888) 426-8581



Optional accessories

A - Swivel arm for the control unit

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

- Press the cap [74] and swivel the control unit [9] completely to the side.
- Swivel the control unit [9] to return it to its initial position; the cap [74] lifts up and automatically locks the pivoting mechanism.
- Turning the clamping wheel [64] clockwise releases the control unit clamp inside the sliding part [63]. This allows the control unit to be moved slightly in longitudinal direction within the sliding part [63] 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 [64] anticlockwise in the sliding part [63].
- If the swivel arm [75] is entirely removed together with the control unit [9], you can take it out of the holder [65]. However, first remove the plug [23] of the control unit from the battery (see chapter 4.2).

Removing the control unit from the swivel arm

- Take the plug [23] of the control unit out of the battery (see chapter 4.2).
- Turn the clamping wheel [64] clockwise and slide the control unit [9] out of the sliding part [63].

Attaching the control unit to the swivel arm

- Slide the control unit [9] into the sliding part [63] and fix it in place by turning the clamping wheel [64] anticlockwise.
- Reconnect the plug [23] of the control unit to the battery (see chapter 5.1).



Before inserting the plug [23] into the socket [29] of the battery pack, ensure that both parts are clean and there are no metallic particles on them. If you detect such particles, use a dry and clean cloth to remove them.



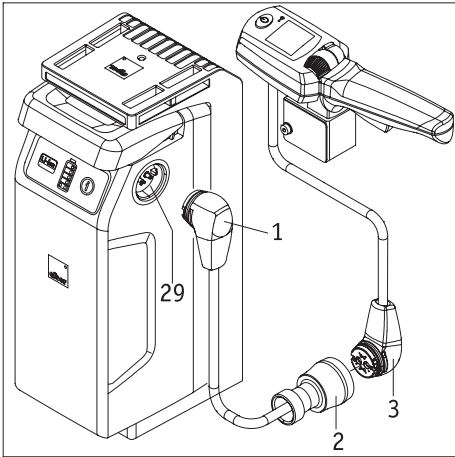
The control unit plug [23] is magnetic. Therefore prevent the plug coming into contact with medical implants, electronic storage media, bank cards or similar items.



It is necessary to ensure that the control unit is fixed in place securely in the sliding part [63] with the clamping wheel [64]. 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.

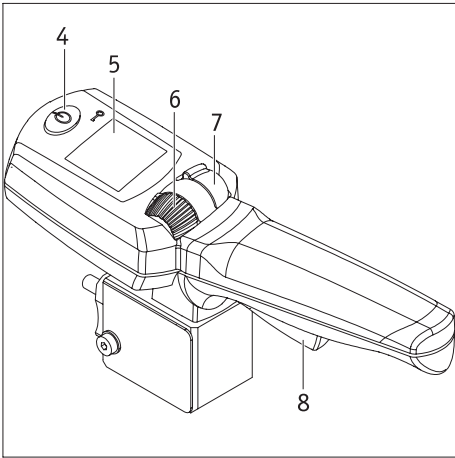


B - Intuitive attendant control

The intuitive attendant control (hereinafter called 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 attendant control. The individual components are installed by Alber or by the authorised specialist dealer.

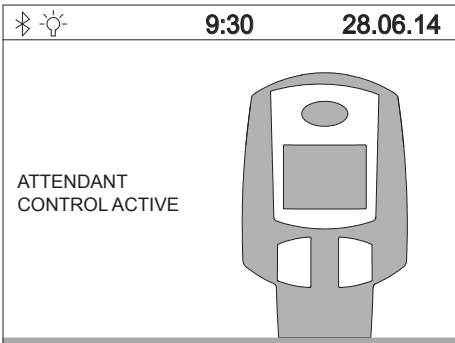
1. Connecting the attendant control

- Switch off the wheelchair user’s control unit (see chapter 5.2.2).
- Connect the plug [3] of the intuitive attendant control to the adapter cable socket [2].
- If this is not already inserted: Insert the plug [1] of the battery charger into one of the sockets [29] on the battery pack.
- The attendant control is now connected to the e-fix.



2. Starting up attendant control

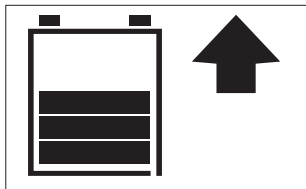
- Switch on the e-fix and wait until the start screen is displayed. Under no circumstances touch the attendant control, the control unit joystick or the individual operating elements during start-up. If you do, you will get an error message.
- Press button [4] on the attendant control. This switches 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’s control unit display [5]: Battery symbol (indication of battery capacity), to the right of this the currently selected travel direction (arrow symbol) – see diagrams to the bottom left.
- The attendant control is now active, the control unit inactive. The wheelchair can now only be moved by an attendant.



3. Driving mode with attendant control

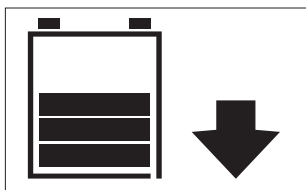
- Specify the direction of travel you require by pressing switch [7] forwards (forwards travel) or backwards (reverse travel). The selected travel direction is shown in the display by an arrow symbol.
- Using the adjustment wheel [6], select the maximum final speed you require. When setting your speed, this will be displayed as a percentage below the battery symbol.
- Pull the driving lever [8] to start moving.

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

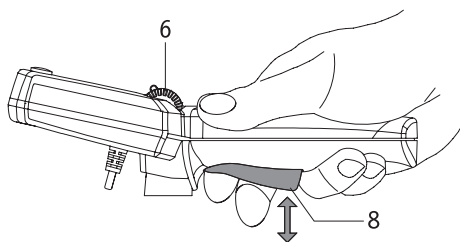


4. Turning off the attendant control

Press button [4] 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).



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

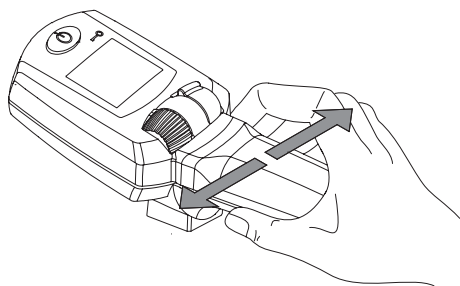


5. Information on driving mode

The driving lever [8] is similar to a car's accelerator.

In the initial position the e-fix is stationary. Driving mode starts when the driving lever [8] is pulled. The speed increases, the further the driving lever is pulled. The maximum achievable speed is pre-selected by the adjustment wheel [5] and is maximum 6 km/h forwards, reverse travel is a maximum of 4.2 km/h.

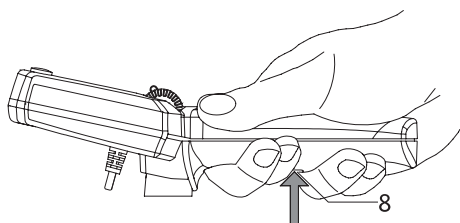
If these speeds are too high for you, your authorised specialist dealer can reprogramme the maximum speed in the e-fix software.



The electronics in the handle register the movements made by the operators hand. A slight movement of the lever to the left or the right is converted into a drive command for the e-fix wheels so that you can drive around bends without a great deal of effort.

Tilting or lifting the wheelchair using attendant control or the additional handle (optional accessory) is not permitted.

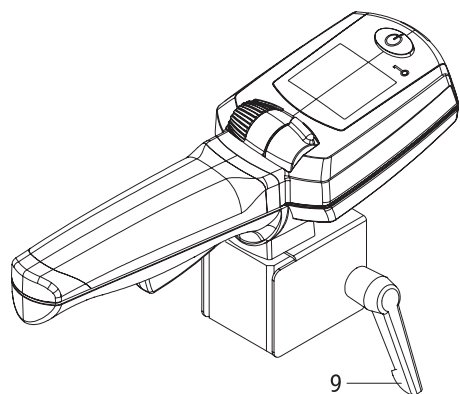
Please observe the information provided by the wheelchair manufacturer on tilting or lifting the wheelchair.



6. Information on the panic function

If you need to stop the e-fix immediately in dangerous situations then firmly pull the driving lever [8] beyond the normal detectable limit. This triggers an immediate enforced shut-down of the e-fix and sounds an acoustic warning signal.

After releasing the driving lever [8], you can immediately continue driving with the e-fix.



7. Removing the attendant control from the wheelchair

- Switch off the e-fix via the control unit (see chapter 5.2.2).
- Remove the attendant control plug [3] from the adapter cable socket [2].
- Release the fixing lever [9] (turn it several times) and remove the attendant control from the holder on the wheelchair.



Warning

Slight pressure applied to the right or left of the handle of the intuitive attendant control results in the wheelchair moving to the right or left respectively. Equally, it is sufficient to lightly touch the drive lever to activate it. Therefore always switch off attendant control, if it is not in use. This ensures that the wheelchair does not begin to move inadvertently.

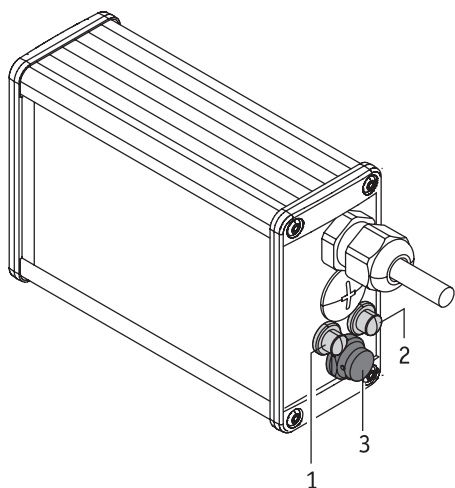
Never hang any objects such as handbags, shopping bags, etc. on the attendant control, whether the wheelchair is in driving mode or not. Such objects might activate the control lever or trigger the sensors so that the wheelchair is inadvertently set into motion.



Before inserting the plug [3] into the socket [2], ensure that both parts are clean and there are no metallic particles on them. If you detect such particles, use a dry and clean cloth to remove them.



The attendant control plug [3] is magnetic. Therefore prevent the plug coming into contact with medical implants, electronic storage media, bank cards or similar items.



C - Opti-Box

[1] Connection for the speed stop limit switch

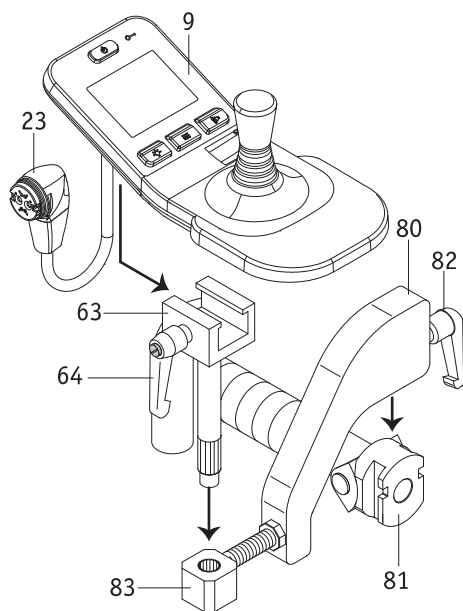
A speed stop limit switch provides the option of regulating the speed depending on the switch position. Wheelchairs with stand-up and lift function can, for example, reduce the speed of these two positions, or block travel. When you first insert the speed stop limit switch the speed is reduced to 50% of the maximum speed. When the switch is closed, the e-fix continues to travel at maximum speed. The reduced speed can be modified by your specialist dealer.

[2] Connection for an external on/off switch

Option of switching the e-fix on or off using an external button.

[3] Plug for connecting external control systems

This enables the e-fix to communicate with external control systems.



D - Attendant control unit

The e-fix can be operated by the wheelchair user themselves and by an attendant. This just requires the control unit to be installed in a holder attached to the wheelchair handle. This is not included in the standard scope of delivery but can be fitted subsequently by your specialist dealer at any time.

If an attendant should control the e-fix, proceed as follows:

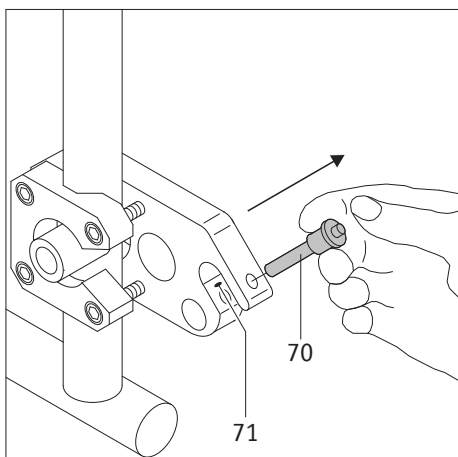
- Switch off the e-fix.
- Remove the control unit (see chapter 5.1).
- Push the holder bracket [80] into the attachment [81] fitted to the wheelchair handle.
- Secure the holder bracket [80] with the locking lever [82] in the attachment [81].
- Push the sliding part [63] into the holder [83].
- Slide the control unit [9] into the sliding part [63] and secure it using the locking lever [64].
- Connect the control unit [9] to the battery (see chapter 5.1).
- If the control unit needs to be used directly by the wheelchair user, dismantle it by following the above steps in reverse order.



Before inserting the plug [23] into the socket [29] of the battery pack, ensure that both parts are clean and there are no metallic particles on them. If you detect such particles, use a dry and clean cloth to remove them.



The control unit plug [23] is magnetic. Therefore prevent the plug coming into contact with medical implants, electronic storage media, bank cards or similar items.



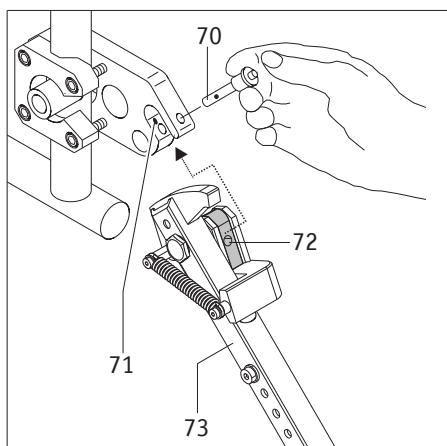
E - Anti-tippers

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

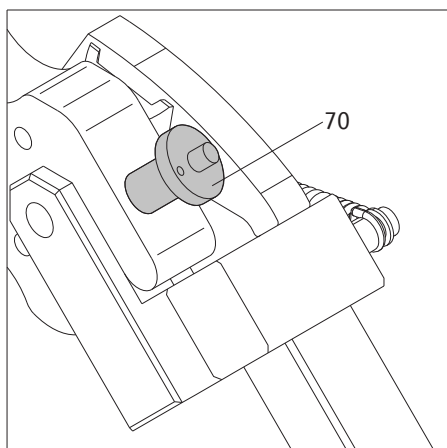
When using Alber anti-tippers, two further brackets are fitted to your wheelchair in which the anti-tippers are inserted. The following instructions and safety precautions apply.

Fitting and removing Alber anti-tippers

- Switch off the e-fix wheels before fitting the anti-tippers.
- Remove the quickpin [70] from the bracket mounting fork [71], by pressing on the pin with your thumb whilst pulling it out using your index and middle finger.

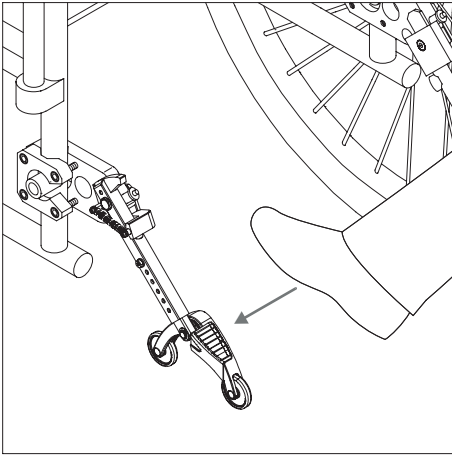


- Push the clamping piece for the anti-tipper [72] into the bracket mounting fork [16].
- Lock the bracket mounting fork [71] using the quickpin [70]. To do this, press the pin with your thumb and then push it fully into the bracket as far as it will go.



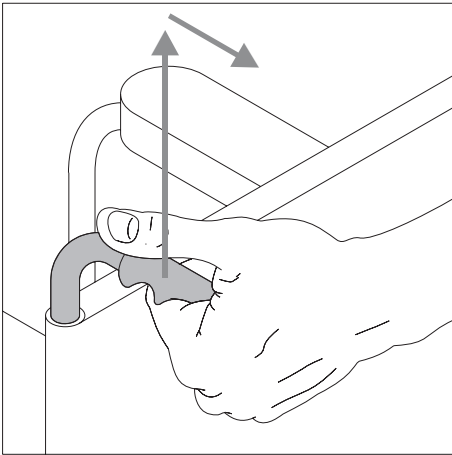
- Check the quickpin [70] holds fast in the bracket mounting fork [71]. It must not be able to be removed without pressing the releasing device.
- Fit the second anti-tipper.

The anti-tippers are removed in the reverse sequence.

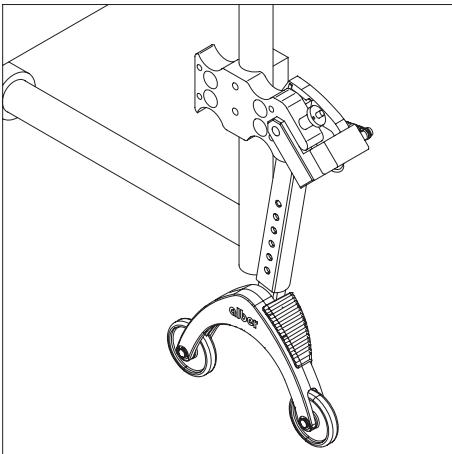


Using the Alber anti-tippers

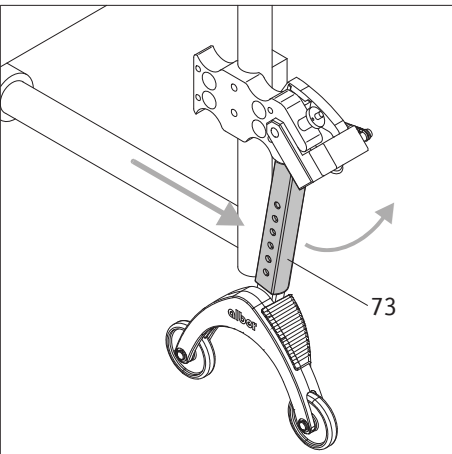
- As shown in the diagram, press your foot on an anti-tipper.



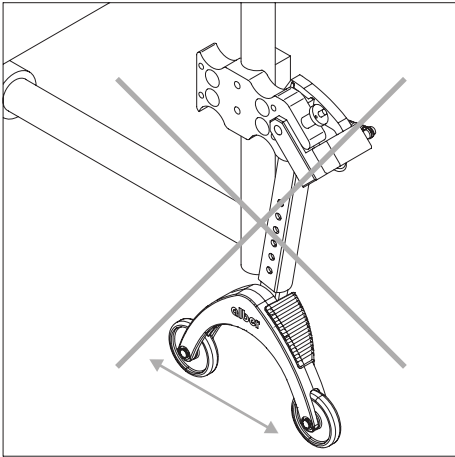
- Whilst doing so, pull the wheelchair by its handles a little upwards and to the rear until the wheelchair has been raised and the anti-tippers click into a fixed position.



- Now, you can fit or remove a wheel. If you are fitting or removing e-fix wheels, these need to be switched off.
- 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 at the same time push back the holding rod [73] using your foot.



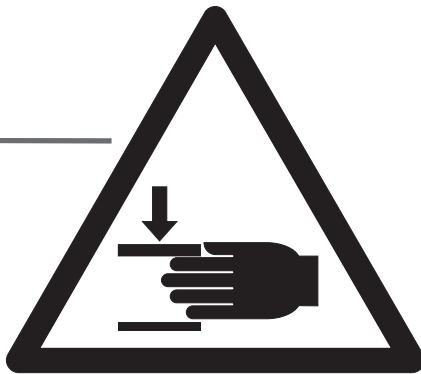
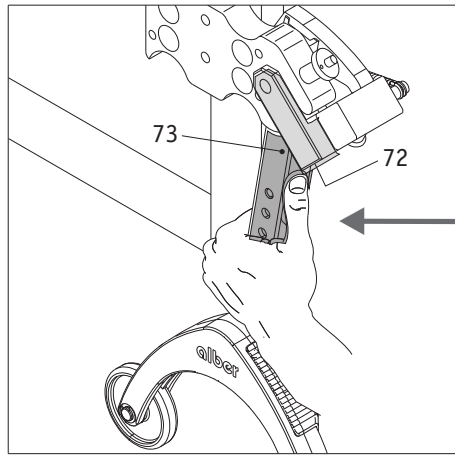
Important operating and safety instructions



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 when manually adjusting or activating. As a result of the necessarily high spring force there is a crushing hazard between the holding rod [73] and the clamping piece [72].

Wichtige Hinweise



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



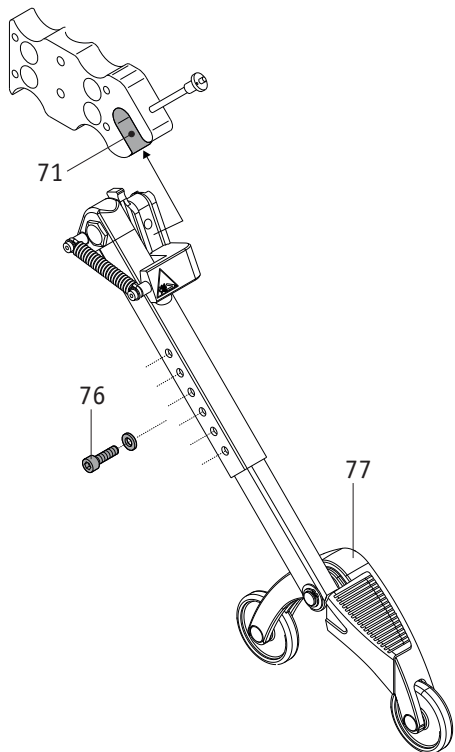
The locking screw for the plug-in part (see [76] in the diagram opposite) must be tightened to 5 Nm. Arrange for your specialist dealer to carry out this assembly work.



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



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



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