Operating Manual

Electric Wheelchair

ALLROUND 970

STAY MOBILE

ORTOPEDIA

Table of contents

1. Foreword

We thank you for the confidence you have placed in our company by choosing an electric wheelchair from the ALL-ROUND 970 series.

The electric wheelchair can be adapted to your individual needs by way of the equipment variants and the accessories.

The electric wheelchair can be equipped with, for example, an electrically-adjustable backrest and legrests.

Like every other vehicle, the electric wheelchair is a technical aid. It needs explanation, a small amount of maintenance and can be a source of danger when incorrectly used. The correct handling must therefore be learned.

This operating manual in combination with the *'Operating Manual for Control Units'* and the *'Safety Information for Electric Vehicles'* brochure must be read before the first use of the wheelchair, they are intended to help you in the handling of the wheelchair and to prevent accidents.

Children should read this operating manual, the *'Operating Manual for Control Units'* and the *'Safety Information for Electric Vehicles'* brochure together with the parents or a supervising/accompanying person before the first journey with the wheelchair.

☞ Note:
Please note that the illustrated equipment variants can deviate from your model.

2. Legal requirements

Please comply with the legal requirements of the country in which the wheelchair is used.

2.1 Legal requirements for Germany

2.1.1 Electric wheelchairs with a top speed of 6 km/h

A driving licence is not required for electric wheelchairs with a top speed of 6 km/h. Pavements may only be driven on at walking speed. A liability insurance is not mandatory but recommendable. The minimum age for driving this vehicle is 15 years. An exemption certificate for younger persons can be applied for at the relevant administrative authority.

2.1.2 Electric wheelchairs with a top speed of 10 km/h

In contrast to the model with a top speed of 6 km/h, the German traffic regulations (StVZO) require the following for the model with a top speed of 10 km/h:

- ▲ A valid liability insurance.
- ▲ The registration of the vehicle at the local vehicle registration centre.

The type approval report required for the vehicle registration is a part of the documentation supplied with the wheelchair. First contact your insurance company. They will provide you with an insurance plate that must be attached to the rear cover of the vehicle with two screws.
The electric wheelchair can then be taken to the local vehicle registration centre. The vehicle registration centre will check that the type approval report conforms with the vehicle and then stamp it. The handling can vary from place to place. Some registration centres do not insist on seeing the vehicle. A telephone call beforehand can save you an unnecessary journey. The vehicle can then be driven on public highways in accordance with the German Highway Code (StVO). You must have the type approval report with you at all times when driving on public highways.

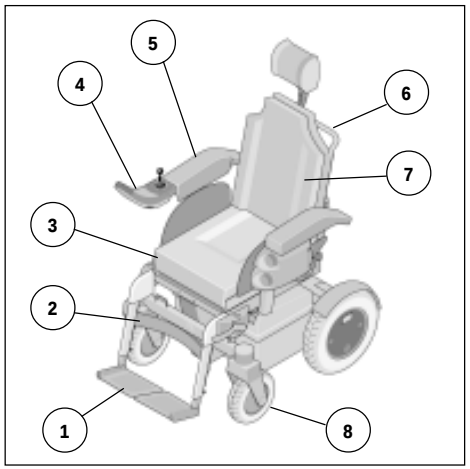
☞ Note:
All modifications of the vehicle invalidate the type approval.

3. Overview

3.1 Model ALLROUND 970

The overview (Fig. 1+2) shows the most important components and control units.

3.1.1 Overview



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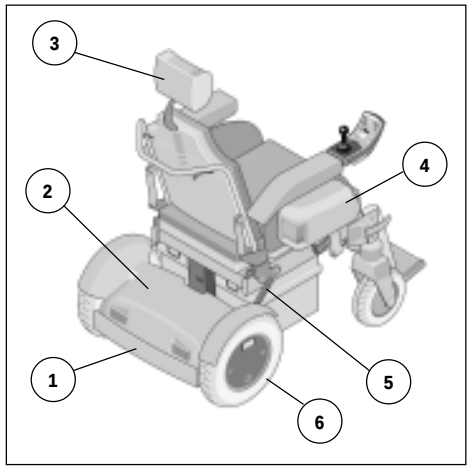
① Foot plate
② Calf strap
③ Seat upholstery
④ Control unit
⑤ Armrest
⑥ Push handle
⑦ Backrest
⑧ Swivel wheel



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① Bumper
② Rear cover
③ Headrest
④ Lighting unit
⑤ Selection lever for drive mode push mode
⑥ Drive wheel

Drive mode

Push mode

4. Handling the wheelchair

4.1 Use

The electric wheelchair, with attached legrests and armrests, serves exclusively for the conveyance of one sitting person. Other pulling or transporting uses do not comply with its intended purpose.

Attention:
! Comply with the contents of the *'Safety Information for Electric Vehicles'* brochure!

The ALLROUND 970 wheelchair is intended for use indoors and outdoors. The model has been assigned the 'Use Class B' as per the EN12184 standard. For outdoor on a firm surface, the wheelchair must be equippped with a lighting system.

Depending on the foot plate height adjustment, the electric wheelchair can cross obstacles with a max. height of 60 mm.
Higher obstacles up to 110 mm high can be crossed with a 'step climber'.

4.2 Tips for accident prevention

4.2.1 Initial driving practice

A low maximum speed must be pre-selected on the control unit for the initial driving practice. Make yourself familiar with the driving behaviour of the electric wheelchair in small steps. The electric wheelchair should not be used outside of the familiar environment or on public highways before you have a safe control of the vehicle.

4.2.2 Driving on public highways

The Highway Code must be complied with when driving on public highways. Check the functioning of the lighting system before the start of each journey. Carry out a short braking and steering test at a very low speed immediately after the start of motion.

4.2.3 Functional check

The functions and safety of the electric wheelchair must be checked before the start of each journey.

Attention:

! Comply with the contents of the *'Safety information for electric vehicles'* brochure!

- The frame, cables and the batteries should be checked for damage after a collision with an obstacle. – Have any visually identified damage repaired immediately by an authorised workshop.

4.2.4 CE requirements

☞ Note:
The technology of this electric wheelchair complies with the requirements of the EEC 93/42 directive on electromagnetic compatibility. However, the possibility of interference from high-frequency radiation from other electrical equipment cannot be excluded.

High-frequency radiation exists in the proximity of, for example, radar and broadcasting stations, all types of radio sets and radio telephones. Stop the electric wheelchair immediately, switch off the control unit and pull out the security plug at the front of the control unit if the electric wheelchair reacts uncontrollably due to interference or causes interference to other electronic devices.
The connection of other electrical devices can also cause malfunctions.

Attention:

! Never drive the electric vehicle in the proximity of electronic medical equipment with a high danger potential and/or life-supporting function or in the proximity of diagnostic equipment.

4.2.5 Safety information

▲ Do not pull out the security plug whilst still in motion. Do not press the ON/OFF key whilst still in motion. Pressing the key will then switch off the electric wheelchair and cause it to stop immediately.

▲ A danger of tipping over always exists when driving with a backrest reclined to the rear or a seat raised at the front: A danger of tipping over always exists when driving with a backrest reclined to the rear or a seat raised at the front. Bring the seat into its lower position and the backrest into the upright position before the start of the journey.

▲ Do not adjust the seat or backrest angle on rising/falling gradients.
– Danger of tipping over!

▲ Lean the upper body forwards when crossing an obstacle.

▲ The attachment/detachment of accessories/components alters the driving behaviour.

▲ Tyres are made of a rubber mixture and can leave permanent or difficult-to-remove marks on some surfaces (e.g. plastic, wooden or parquet flooring, carpets, mats).

▲ An exposure to high temperatures from lamps, the sun or other heat or light sources can damage the upholstery. Protect the upholstery with a cover and/or park the wheelchair in a protected area.

▲ Never expose the electric wheelchair to extreme weather conditions.

4.3 Drive/push mode

The lever (Fig. 3/ ①) for switching the drive motors between the drive mode and push mode is located on the right side of the wheelchair (optional: lever on the left side.

Caution:

! The wheelchair should only be switched into the push mode for manoeuvring when it is standing on a level surface.

Before selecting the push mode in an emergency case and on slopes, a helper should hold the wheelchair in order to stop an unwanted movement of the wheelchair.

– The electric magnetic brakes are switched off in the push mode. A braking of the vehicle is then only possible by switching back into the drive mode.

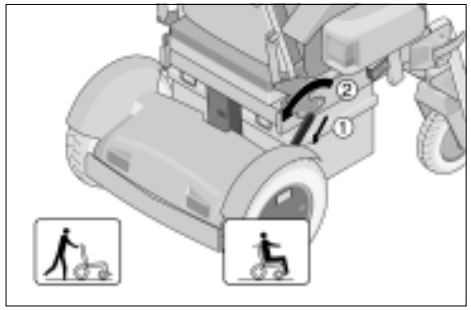
▲ Comply with the contents of the *'Safety information for electric vehicles'* brochure.

4.3.1 Selecting the push mode

Switch off the control box because the pushing will otherwise be made difficult by the electric system.

1. Press down the selection lever to unlock the locking mechanism (Fig. 3/ ①) and then move the selection lever to the rear (Fig. 3/ ②).

Switch off the control box because the pushing will otherwise be made difficult by the electric system.



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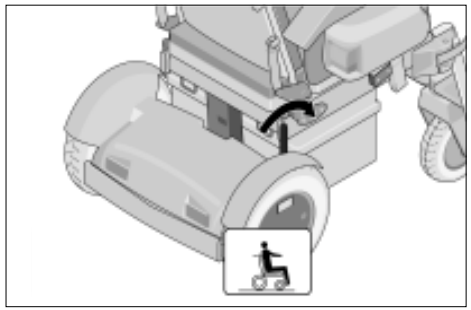

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4.3.2 Selecting the drive mode

1. Push the selection lever to the front (Fig. 4) uuntil it audibly latches.
2. Switch on the control box. The vehicle is now ready for driving again.

4.4 Preparing for driving

Attention:

! The functions and safety of the electric wheelchair must be checked before the start of each journey.

– Charge the batteries via the control unit before the first journey (Fig. 5).

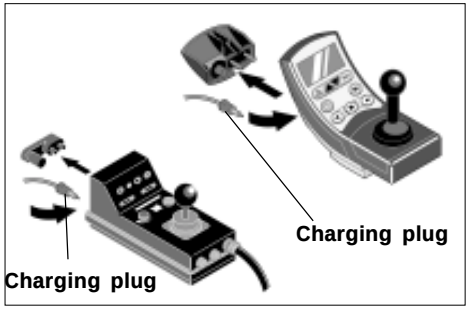
1. Switch the drive motors to the drive mode. Do this by pushing the selection lever to the front (Fig. 6/ ②) until it audibly latches.

2. Plug the security plug (Fig. 7) into the control unit (at the front).

Attention:

! Do not insert any object other than the security plug into the battery charging socket.
– Danger of short-circuit!

– Always pull out the security plug after you have switched off the wheelchair with the ON/OFF key. This disables the wheelchair and prevents an unauthorised use.



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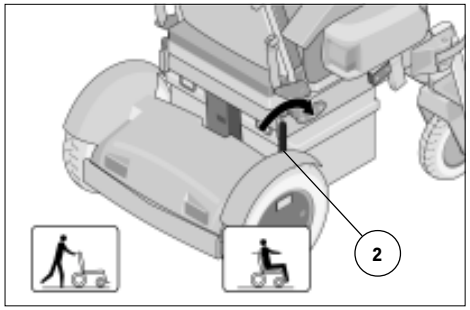

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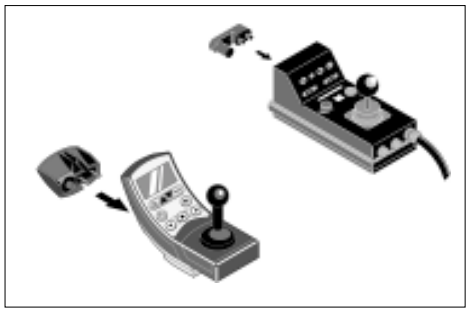

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4.4.1 Charging the battery

The batteries should be charged immediately after the use of the electric wheelchair in order to have the full driving range available at any time.

Every battery has a normal 'self-discharge'. The batteries should be recharged once a month when the electric wheelchair is not used for a long period of time. This keeps the electric wheelchair ready for use.

Batteries should only be charged with a battery charger that is suitable for the type and rating of the batteries. The guarantee is only preserved to its full extent when the battery chargers supplied and recommended by ORTOPEDIA are used. Your authorised dealer will be pleased to help you choose the correct battery charger.

Charge the batteries:
- before long tours
- before a long journey.
- whenever the use permits.
- immediately if the charge capacity indicator is lit or blinks (see the *'Operating Manual for Control Units'*).

▲ Comply with the contents of the 'Safety information for electric vehicles' brochure.

▲ Observe the contents of the operating manual for the battery charger.

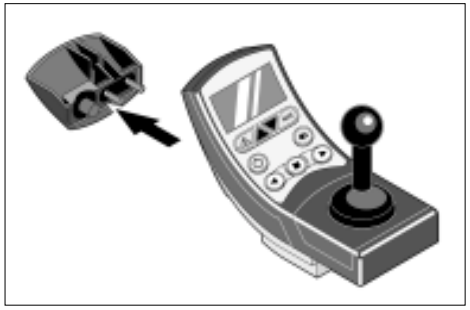
4.4.2 Charging procedure

The charging process for gel batteries takes longer than that for batteries with liquid electrolyte due to physical reasons. If the battery display indicates that the battery is fully charged, this corresponds to 95% of nominal capacity.

1. Switch off the control unit. The selection lever should be in the drive mode position.
2. Pull out the security plug (Fig. 8).
3. Plug the battery charger plug into the battery charging socket on the control unit (Fig. 9).
4. Switch on the battery charger, respectively, plug the mains plug of the battery charger into a convenient mains socket. The battery is now charging.

The charging process only runs with intact main and battery fuses!
Charge preferably during the night. A full charging of the batteries takes approximately 10 hours.

5. At the end of the charging, switch off the battery charger, respectively disconnect the charger from the mains, and pull the charging plug out of the control unit.



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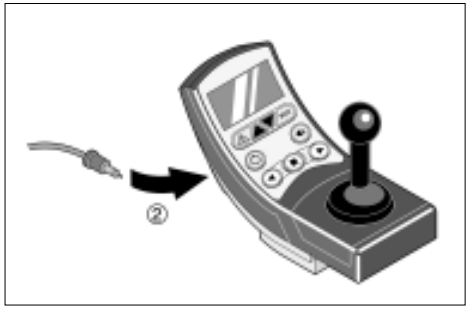

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4.5 Driving behaviour

You determine the speed and the travel direction through the movement of the joystick (Fig. 10/ ①). You can preset the maximum speed of your wheelchair.

Attention:

! Drive especially carefully during the first journeys!

Do this by setting the pre-selected speed to the lowest level.

4.5.1 Safety information

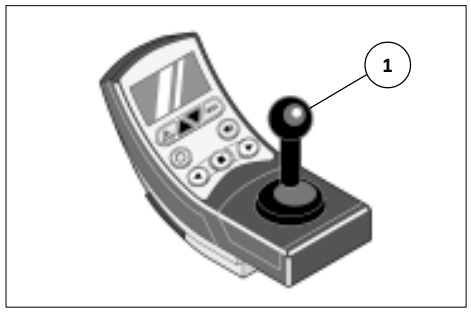
Attention:

! Comply with the contents of the *operating manual for CONTROL UNITS* and the *'Safety information for electric vehicles'* brochure!

– Do not pull out the security plug whilst still in motion. A switch-off will then cause an abrupt braking of the wheelchair.

– Comply with the max. permitted rising gradient value specified in the 'Technical data' section.

– Start off slowly. Carry out a short braking and steering test after starting off.



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– Lean the upper body forwards when crossing an obstacle.

– Avoid jerky adjustments to driving status when negotiating hills, transverse slopes and obstacles.

– Do not get into/out of the wheelchair unless it is switched off and the selection lever has been set to drive mode!
An unintentional contact with the joystick can otherwise cause an uncontrolled movement of the wheelchair! – Danger of accidents!

– For safety reasons, use mobile telephones or other radio devices only with a switched-off wheelchair.

4.6 Brakes

Attention:

! Have the brakes repaired immediately by an authorised dealer if they work one-sided or if the braking effect is reduced.

– Comply with the contents of the *'Safety information fore electric vehicles'* brochure!

4.6.1 Driving brake

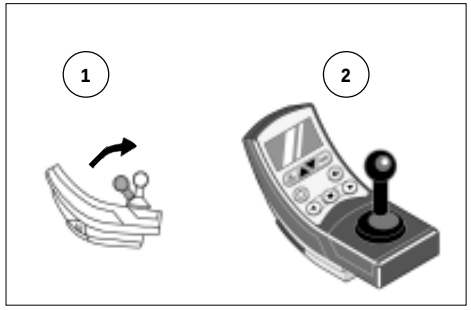
The motor works electrically as a driving brake and decelerates the wheelchair softly and jerk-free to a standstill.

4.6.2 Parking brake

The parking brakes only work when the selection lever is in the drive mode position. They disengage automatically when the wheelchair starts off. They are disengaged manually by moving the selection lever to the push mode position. See also section 4.3.

4.6.3 Decelerating/stopping the wheelchair

The wheelchair stops when you let go of the joystick (Fig. 11/ ①).
Move the joystick slowly back to the centre position (zero position) for a dosed braking (Fig. 11/ ①). Always ensure an adequate braking distance when applying the wheelchair brakes.



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4.6.4 Braking distance

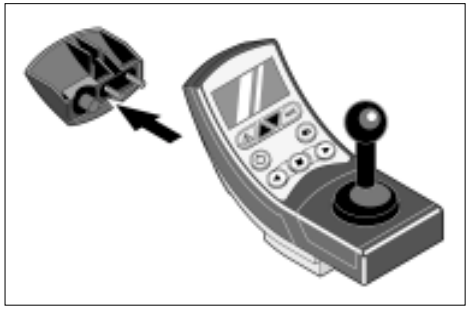
The braking distance is dependent on the driving surface condition and the speed, the shortest braking distance is approx. imately 1.0 m for the 6 km/h version and
approx. imately 2m for the 10 km/h-version.

Attention:
! Brake early enough when approaching persons or obstacles.

4.7 Handling the control unit

The position of the control unit can be adapted to the lower arm length of the user. The control unit can also be detached for transportation or storage and can be laid on the seat or stored separately.

Attention:
! Switch off the control unit and pull out the security plug before adjusting/detaching the control unit (Fig. 12).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4.7.1 Functional description

You will find a detailed description of the keys and symbols in the *operating manual for control units*.

4.7.2 Positioning of the control unit

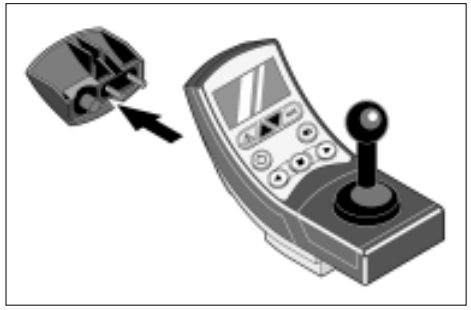
Slacken the clamping screw (Fig. 13/ ①) under the armrest by approx. one turn. Move the control unit into the desired position. Tighten the clamping screw (Fig. 13/ ①).

4.7.3 Detaching the control unit

Open the cable clip and slacken the clamping screw (Fig. 15/ ①). Push the control unit to the rear. Slacken the clamping screw (Fig. 15/ ②) and pull off the entire armrest unit in an upward direction.
The control unit can now be pulled out to the front. Carefully route the cable when moving the control unit. Retighten the clamping screw.

4.7.4 Attaching the control unit

Insert the control unit into its clamping device. Mount the entire armrest unit and secure with the clamping screw. Correctly route the connecting cable again. Tighten the clamping screw (Fig. 15/ ①) after having positioned the control unit.



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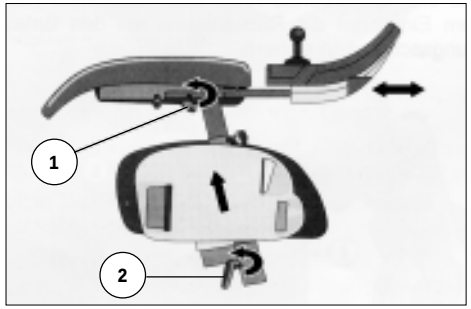

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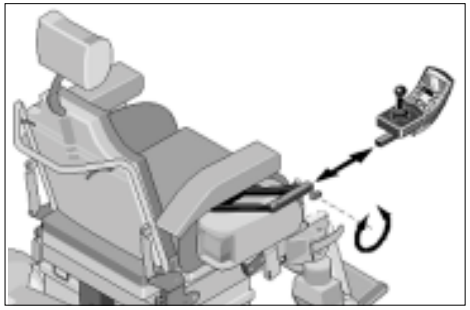
4.7.5 Swivelling the control unit to the side

The control unit can be swivelled to the side into a position where it is parallel to the armrest (Fig. 16). This makes it possible to, for example, drive closer to a table. For normal driving, swivel the control unit forward again over the pressure point until it latches into place.



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4.8 Loading and transport

4.8.1 Safety information

For the transport in vehicles, you must leave the wheelchair and sit in a suitable seat in the vehicle. – The wheelchair is not designed to withstand the forces which are generated in accidents, which exposes the user to considerable risks.

Attention:
! – Observe the *'Safety information for electric vehicles'*.

4.8.2 Transport in vehicles

The following items may be necessary for the transport in vehicles (Fig. 17).

1. Taking off the legrests.
2. Detaching the control unit.
3. Detaching the armrest units.
4. Folding over or detaching the backrest.

The parts detached for the transport must be carefully stowed and carefully attached again before the next journey.

Attention:

! Do not use the wheelchair without attached legrests and armrest units!

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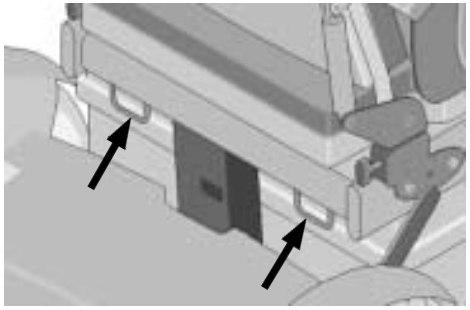
4.8.3 Securing devices

Use the front transverse tube (Fig. 21) and the rear U-shaped securing tube for securing the wheelchair.

▲ Do not use the armrests, legrests or push handle for lashing the wheelchair, use only approved an safety-tested securing devices.

Attention:

! Switch off the control unit and then pull out the security plug after the loading. Move the selection lever for the drive motors to the drive mode position.



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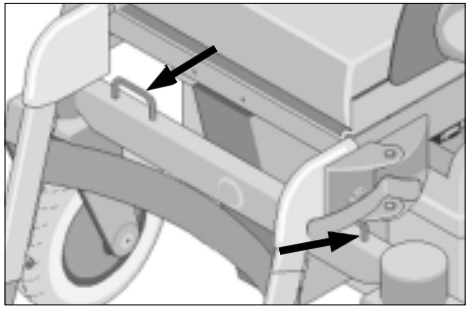

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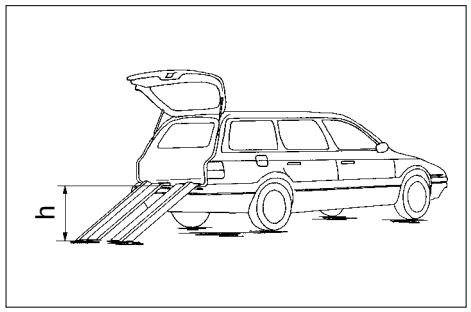
4.9 Ramps and lifting platforms

The wheelchair can be loaded with the aid of ramps or lifting platforms. The following safety information must be observed:

- ▲ The *'Safety information for electric vehicles'.*
- ▲ The operating manual for the transport vehicle.
- ▲ The manufacturer's information for the ramp or lifting platform.

Attention:

! The maximum bearing height specified for the ramp must be greater than the height 'h' from the ground to the loading surface, e.g. of the car (Fig. 20).



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4.9.1 Special safety information:

- ▲ For safety reasons, the wheelchair must be unloaded (without baggage and without user) during its loading into a car or when split ramps are used.
- ▲ Note that when driving on an inclined ramp the wheelchair can roll back a short distance after coming to a standstill and before the initial motion (idle zone).
- ▲ Park the car or van on level and firm ground and engage the brake in order to prevent the vehicle from moving.
- ▲ Ramps should be placed on the ground and vehicle in such a way that they cannot slip.
- ▲ Use only a dry, clean and undamaged ramp or lifting platform.
- ▲ Position the ramps so that there is sufficient space for steering corrections with the wheelchair and no wheel projects over the ramp edge.
- ▲ Pre-select the lowest maximum speed.
- ▲ Only approved ramps or lifting platforms may be used.

Attention:

! The loading capacity per ramp or lifting platform must be greater than 190 kg without driver and greater than 290 kg with driver (fixed ramps)!

5. Components

5.1 Seat

5.1.1 Seat cushion

The standard seat cushion (Fig. 21) is secured to the seat plate with Velcro fasteners and can be pulled off.

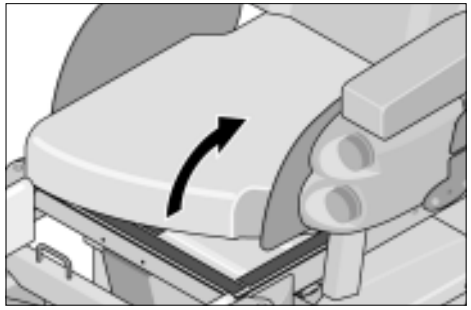
The ERGOpor seat cushion (Fig. 22/ ①) is secured to the seat shell with Velcro fasteners and can be pulled off.

5.1.2 Adjusting the seat depth

The seat depth can be changed by moving the backrest to a different position.

☞ Note:
The attaching must be carried out by an authorised dealer.

The securing screws (Fig. 23/ ①) must be removed to reposition the backreast. Then remove the spacer sleeves from the holes and insert them into the holes for the new position of the backrest mount. Attach the backrest mount with the securing screws.



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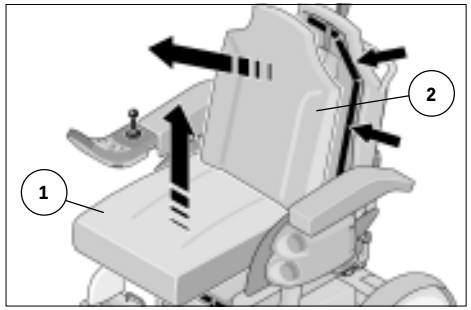

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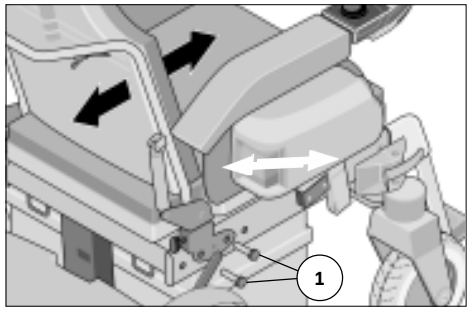

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5.1.3 Swivelling up the seat

1. The seat must be swivelled up to the rear for maintenance work and for access to the batteries and the fuses.

   Attention:

   ! – Park the wheelchair on a level surface and move the selection lever into the drive mode position.

   – Drive down the electrically-operated seat-angle adjusting device.

   – Bring the backrest into the upright position.

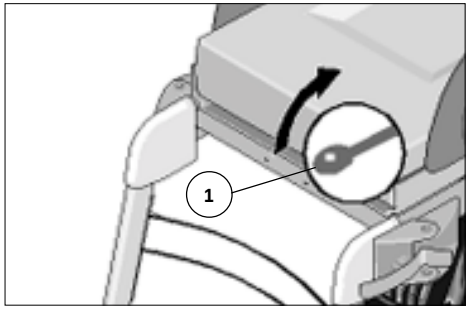
   – Switch off the control unit and then pull out the security plug.

   – Detach the legrests.

2. Lightly press down the lever under the seat (Fig. 24/ ①) and then swivel up the seat until the locking mechanism latches!

☞ With seat lifter and electrically-adjustable seat angle

Detach the connecting elements (Fig. 25/ ②) and then swivel up the seat until the locking mechanism latches!



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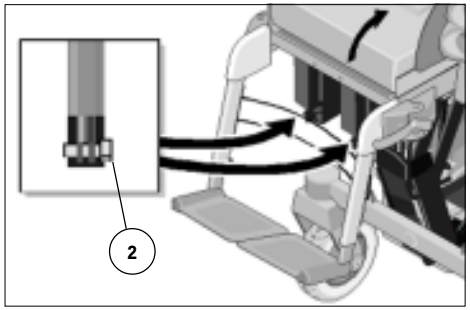

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5.1.4 Swivelling down the seat

Attention:

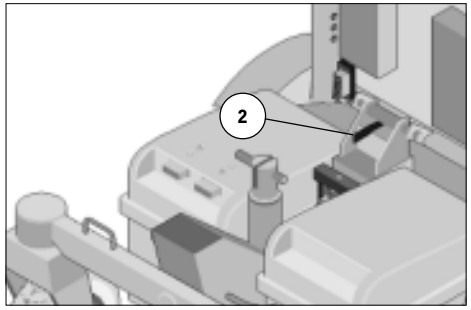
! Carefully swivel down the seat.
– Danger of squashing between the seat and the chassis/covers.

Open the locking device (Fig. 26/ ②) and press on the front edge of the seat with one hand until the locking device latches.

☞ With seat lifter and electrically-adjustable seat angle

Open the locking device (Fig. 26/ ②) and swivel down the front edge of the seat with one hand. Attach the connecting elements (Fig. 27/ ③).

☞ Note:
Check that the automatic locking device has correctly latched by lifting the seat unit. Danger of tipping over!



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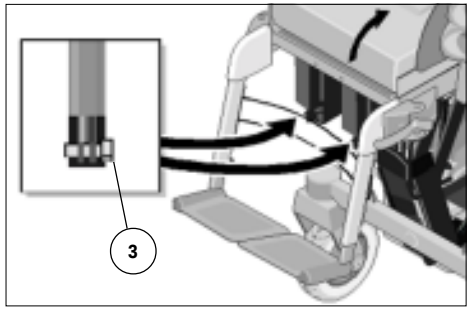


27

5.2 Backrest

5.2.1 Attaching/detaching the ERGOpor backrest element

5.2.1.1 Detaching the ERGOpor backrest element

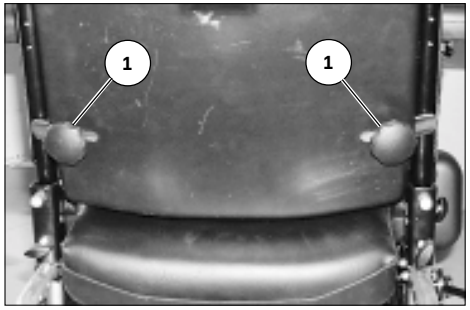
Slacken the securing screws (Fig. 28/ ①) of the clamps and push them inwards. Then push the backrest element forwards out of the backrest frame (Fig. 29).

5.2.1.2 Attaching the ERGOpor backrest element

Press the backrest element, left and right, onto the backrest frame (Fig. 29). Push the securing screws (Fig. 28/ ①) of the clamps outwards and then tighten them.

5.2.1.3 ERGOpor backrest cushion

The ERGOpor backrest cushion (Fig. 30/ ②) is secured to the backrest shell with Velcro fasteners and can be pulled off.



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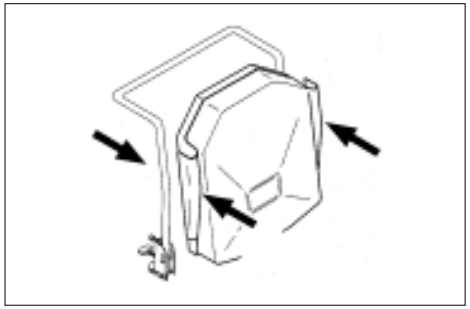

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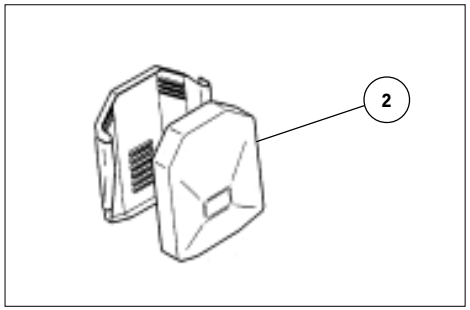
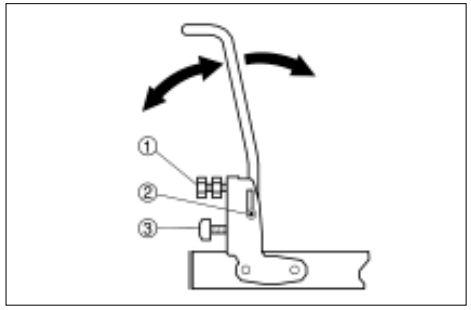


30

5.2.2 Standard backrest

Tool:
1 x 13 mm open-end or ring spanner
1x hexagonal stud wrench WW 6

The angle of the standard backrest (Fig. 31/ ①) can be infinitely adjusted between approx. 0° to 5° with the adjustment screw and the lock nut.



31

5.2.2.1 Folding down the backrest

Screw far out the clamping screw (Fig. 31/ ③) at both sides. Pull up the backrest and then fold it forwards.

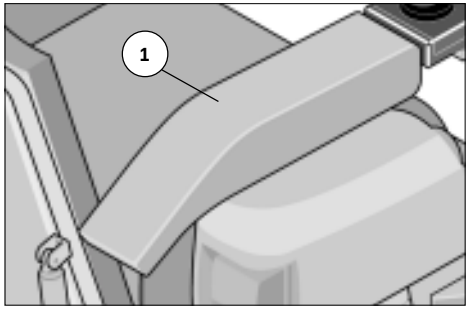
5.2.2.2 Folding upright the backrest

Bring the backrest into the upright position, then press it fully down and tighten the clamping screws (Fig. 31/ ③).

5.2.3 30° backrest

The angle of the 30° backrest (Fig. 59) can be infinitely-adjusted between approx. -5° and 30°.

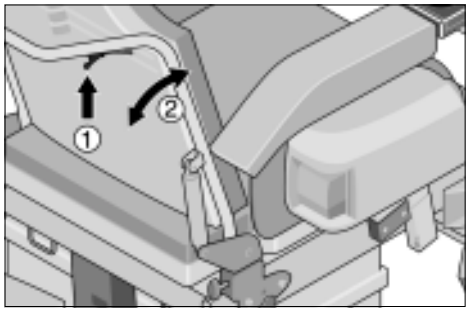
The adjustable backrest is combined with the sloped armrest (Fig. 33/①) to prevent a trapping between the backrest and armrest.



33

5.2.3.1 Adjusting the backrest angle

You unlock the backrest by simultaneously pulling both levers (Fig. 34/ ①) on the push bar. Then move the backrest to the desired angle (Fig. 34/ ②) and release both levers. The backrest is then locked in this position.



34

Attention:
! Only incline the backrest to the rear when the wheelchair is standing on a level surface. Danger of tipping over when the backrest is inclined to the rear.

5.2.3.2 Detaching the 30° backrest

The 30° backrest can be detached for transport or storage. Screw out the securing screw (Fig. 35/ ①) on both sides and then pull off the backrest in an upward direction.

5.2.3.3 Attaching the 30° backrest

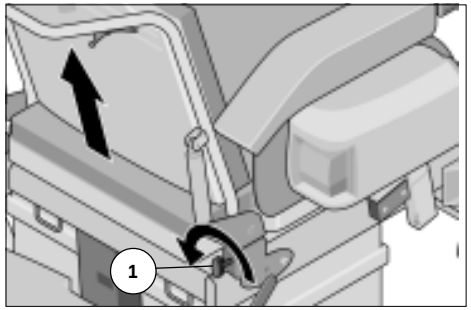
Insert the tubes of the backrest, from above, and then tighten the securing screw (Fig. 36/ ①) on both sides.

5.2.4 Electrically height-adjustable backrest

See the *'Operating Manual for Control Units'* for information on how to adjust the electrically-adjustable backrest.

5.2.4.1 Detaching the backrest element

Pull the upper holders off the backrest frame (Fig. 37) and then lift off the backrest element in an upward direction.



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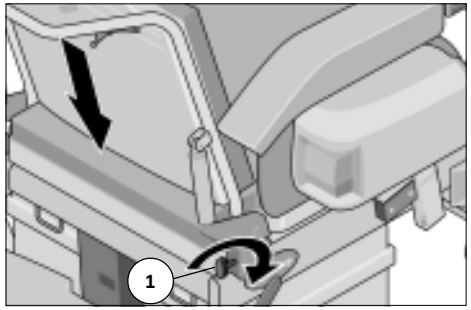

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37

5.2.4.2 Attaching the backrest element

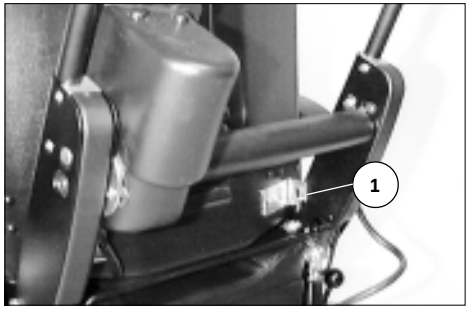
Place the lateral guides onto the pins (Fig. 38/ ①) and then press the upper holders of the backrest element onto the frame at the left and right side.

5.2.4.3 Folding down the electric backrest

The backrest can be folded down to the front for storage or transport. Press down the U-shaped bar (Fig. 39/ ②) and then fold down the backrest to the front.

5.2.4.4 Folding up the electric backrest

Pull on the push bar to bring the backrest into the upright position and then pull to the rear with a jerk so that the locking device audibly latches. - Check for a correct locking of the locking device!



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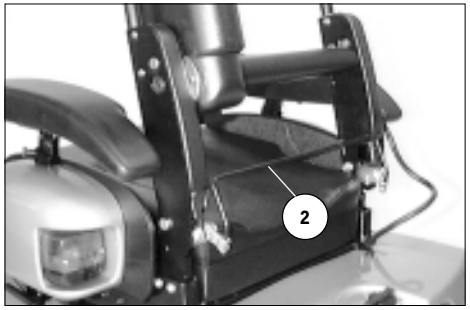


39

5.3 Armrests

The armrests can be adjusted in height and depth to suit the needs of the user.

Attention:

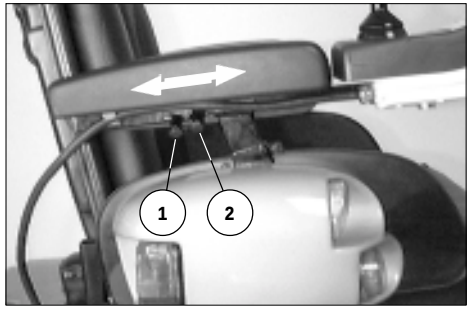
! Do not use the armrests to lift or carry the wheelchair.
Do not drive without the armrests!

5.3.1 Adjusting to suit the seat depth

Tool:
1 x 13 mm open-end or ring spanner

Slacken the securing screw (Fig. 40/ ①), bring the armrest into the desired horizontal position and then retighten the securing screw.

☞ Note:
Slacken the securing screw (Fig. 40/ ②) to adjust the depth of the control unit. Retighten the securing screw after the depth adjustment.



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5.3.2 Height adjustment

Tool:
1 x 13 mm open-end or ring spanner

Slacken the securing screw (Fig. 42/ ③), bring the backrest into the desired vertical position and then retighten the securing screw.

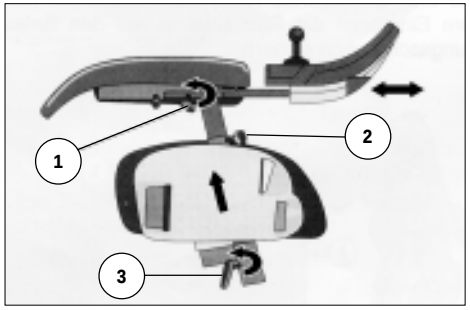
Attention:

! The maximum armrest height has been reached when the marking on the square tube is visible.

5.3.3 Detaching the armrest

Slacken the clamping lever (Fig. 42/ ③) and pull off the armrest in an upward direction.

☞ Note:
The control unit must be detached first if the armrest on the control side is to be detached. To do this, open the cable clip (Fig. 43/ ④) and slacken the securing screw (Fig. 42/ ①). Push the control unit to the rear. Slacken the clamping lever (Fig. 42/ ③) and pull off the entire armrest unit in an upward direction.



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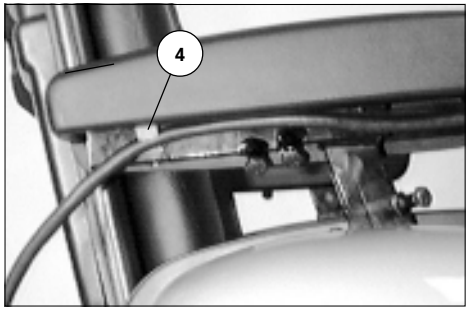
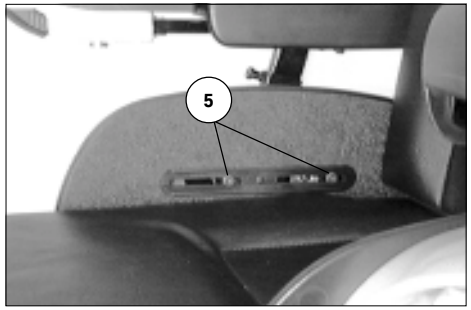


43

The control unit can now be pulled out to the front. Carefully route the cable when moving the control unit. Retighten the clamping screw.

5.4 Clothing protector

The clothing protector can be horizontally displaced. You do this by slackening the securing screws (Fig 44/ ⑤). Bringing the clothing protector to the desired position and then retightening the securing screws.



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5.5 Legrests

Various legrest models for the wheelchair are available. The foot plates can be folded up to the side.

Attention:

! – Do not use the legrests to lift or carry the wheelchair.

– Always place the feet on the foot plates before a wheelchair motion!

5.5.1 Calf strap

The calf strap is hooked into the holders of the legrests on the left and right side (Fig. 45/ ①).

5.5.2 Detaching the legrests

Detach the calf strap. Pull the locking device (Fig. 46/ ①) outwards. Swivel out the legrest and then pull it off in an upward direction.

5.5.6 Hanging in the legrests

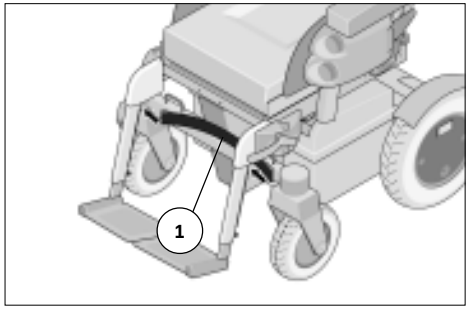
With the legrest in a swivelled-out position, hang-in the legrest (Fig. 47) and then swivel it to the front until the locking device audibly latches. – Check for the correct functioning of the locking device! Attach the calf strap.

5.5.7 Adjusting the height of the foot plate

Hold the foot plate and then unscrew the clamping screw (Fig. 48/ ②) by about ½ a turn.
Move the foot plate to the desired height and then tighten the clamping screw.

Attention:

! The marking shows the maximum extension.



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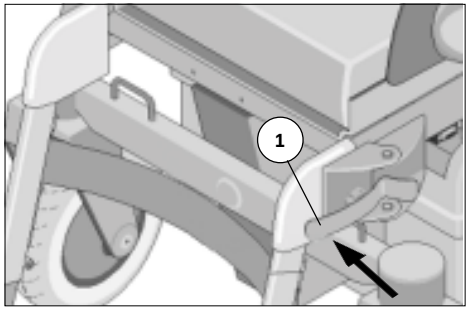

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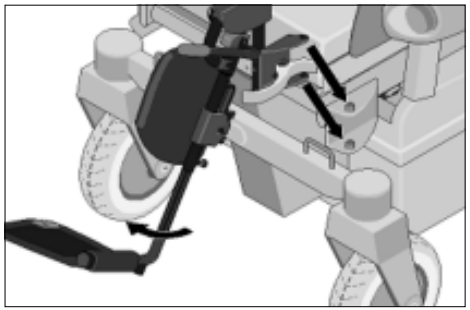
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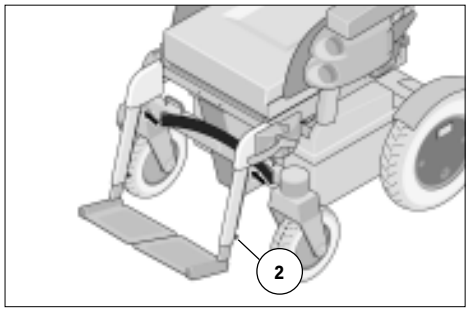

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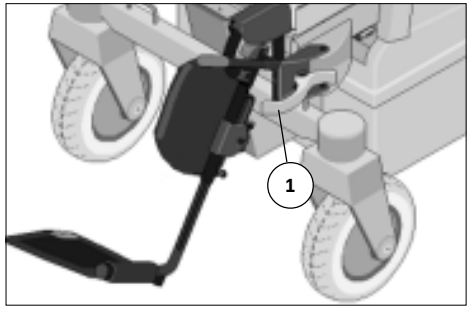
5.5.8 Height-adjustable legrests 774 and 774-2 AL-E

5.5.8.1 Detaching the legrests

Pull the locking device (Fig. 49/ ①) outwards. Swivel out the legrest and then pull it off in an upward direction. The contacts will separate automatically.



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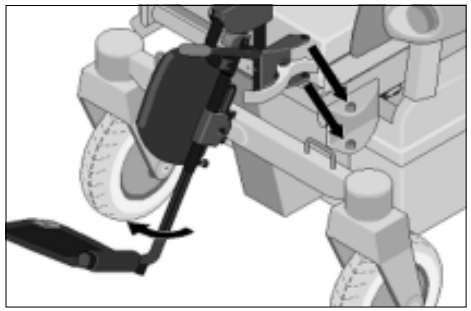
5.5.8.2 Hanging in the legrests

With the legrest in a swivelled-out position, hang-in the legrest (Fig. 50) and then swivel it to the front until the locking device audibly latches. The contacts make automatically. The contacts will make automatically. – Check for the correct functioning of the locking device!

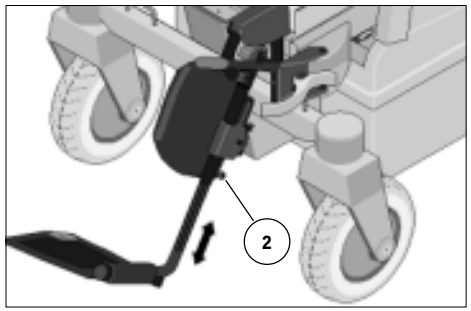


50

5.5.8.3 Adjusting the height of the foot plate

Hold the foot plate and then unscrew the clamping screw (Fig. 51/ ②) by about ½ a turn.
Move the foot plate to the desired height and then tighten the clamping screw.

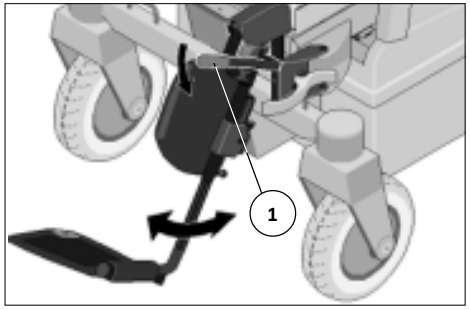
Attention:
! The marking (crease) shows the maximum extension.



51

5.5.8.4 Adjusting the height of the legrests

You raise the legrest to the desired height by simply pulling it up. To lower the legrest, hold the legrest and then press down the lever (Fig. 52/ ①).



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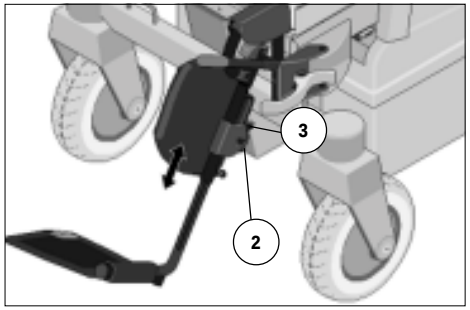
5.5.8.5 Positioning the calf pad

To adjust the height, slacken the securing screw (Fig. 53/ ②), move the calf pad up or down to the desired position and then retighten the securing screw.

To adjust the depth, (thin or thick calf) slacken the securing screws (Fig. 53/ ③), move the calf pad forwards or rearwards to the desired position and then retighten the securing screws.



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5.5.9 Electrically height-adjustable legrests

See the *'Operating Manual for Control Units'* for information on how to adjust the electrically height-adjustable legrests.

5.5.9.1 Detaching the legrests

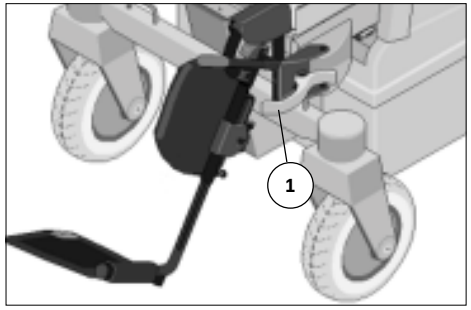
Pull up the locking device (Fig. 54/ ①), swivel out the legrest and then pull it off in an upward direction.

5.5.9.2 Hanging in the legrests

With the legrest in a swivelled-aside position, hang it in and then swivel it to the front until the locking device audibly latches. – Check that it is secure!

5.5.9.3 Adjusting the height of the foot plate

Hold the foot plate and then unscrew the clamping screw (Fig. 55/ ②) by about ½ a turn.
Move the foot plate to the desired height and then tighten the clamping screw.



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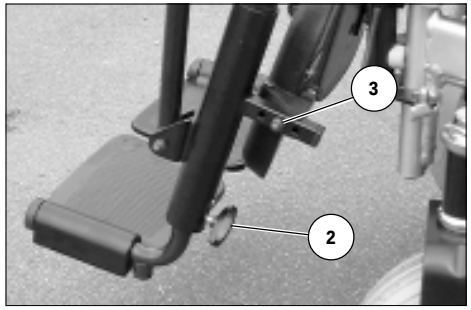


55

Attention:
! The marking (hole) shows the maximum extension.

5.5.9.4 Positioning the calf plate

The calf plate can be fixed at one of three different depth positions after the securing screw (Fig. 55/ ③) has been removed.

6. Options

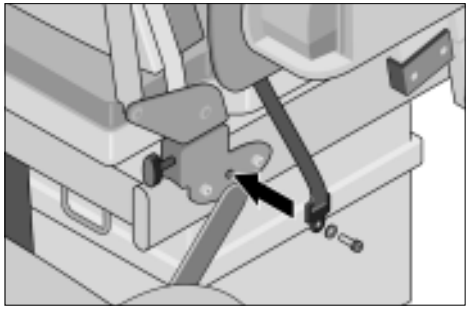
Options are not a part of the standard scope of supply.

☞ Note:
Options from other companies can cause malfunctions.

6.1 Seatbelt

The wheelchair can be equipped with a seatbelt if necessary. The purpose of the safety belt is to strap in the wheelchair user. As an additional stabilisation of the sitting position, it prevents the user from falling forwards out of the wheelchair (depending on the degree of the disability) and can be infinitely adjusted to suit the user.
The retrofitting must be carried out by an authorised workshop.

Attention:
! The seatbelt is not a part of the securing system for the wheelchair, or the person sitting in the wheelchair, during the transport in a disabled person transport vehicle.
– Do not jam any items under the belt strap.



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The seatbelt is screwed on, from the outer side, at the respective backrest holder. The assembly is carried out as shown (Fig. 56).

The armrest can be detached in an upward direction for an easier attaching of the seatbelt.

6.1.1 Putting on the seatbelt with Velcro fastener

Pull both seatbelt straps to the front and close the Velcro fastener.

Attention:
! Make sure that there are no objects trapped under the seatbelt! – Thus you avoid painful pressure points.

6.1.2 Putting on the seatbelt with catch

Pull both seat straps to the front and push the latch tongue deep into the catch (Fig. 57) until the automatic latching mechanism audibly latches. Then carry out a pull test.

Attention:

! Make sure that there are no objects trapped under the seatbelt! – Thus you avoid painful pressure points.

57

6.1.3 Opening the seatbelt

Unfasten the safety belt by pressing the red release key on the latch mechanism (see Fig. 57).

6.1.4 Adjusting the belt length

To lengthen or shorten the seat strap, pull it at a right angle to the catch in the corresponding direction. The excess strap length is retained by displacing the plastic slider.

☞ Note:
The safety belt should be a tight but not too taut.

6.2 Headrest

The headrest in combination with the Ergorpor backrest element (Fig. 58) is non-twisting, height-adjustable and detachable.

Attention:

! We recommend the fitting of two rear-view mirrors for driving with a headrest.

58

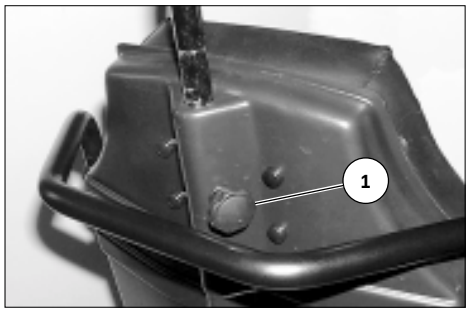
6.2.1 Adjusting the headrest

The headrest can be detached or adjusted in height after the clamping screw (Fig. 59/ ①) has been slackened.

Slacken the clamping screw (Fig. 60/ ②) and position the headrest at the desired height. Tighten the clamping screw (Fig. 60/ ②).

Attention:

! The maximum height adjustment is indicated by the marking.



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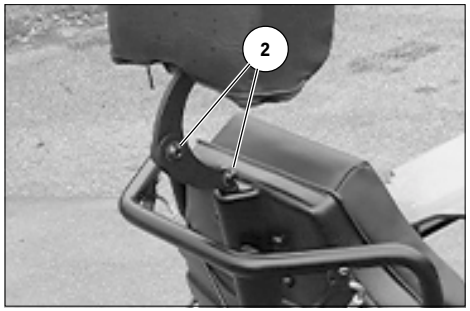

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6.3 Step climber

The step climber (Fig. 61/ ①) serves exclusively for the crossing of obstacles. The step climber can be detached when its use is not required.

Attention:

! The step climber may only be used for crossing firm, immovable obstacles on firm, level surfaces.

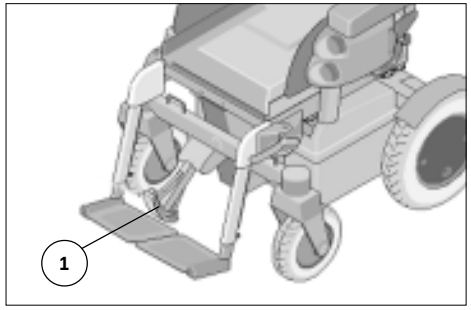
- The maximum obstacle height for the step climber is 11 cm.

6.3.1. Crossing an obstacle

Drive straight onto the obstacle at a low speed.

The step climber will make contact with the obstacle first and the impetus will lift both swivel wheels over the step.

☞ Note:
Drive straight onto the obstacle at a low speed.



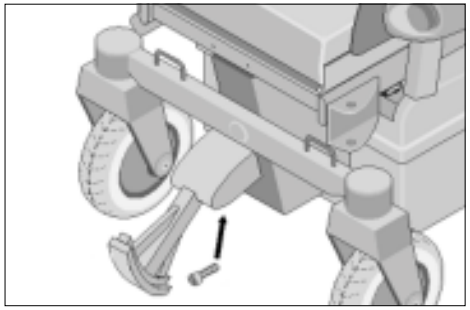
61

6.3.1.1 Safety information

Attention:

! An increased danger of tipping over exists in the following situations when crossing an obstacle with the step climber!

- The seat is tilted.
- Driving with angle-adjusted backrest.
- Driving on a rising/falling gradient, especially without a lap seatbelt.
- Negotiating obstacles at an angle.
- Displacement of the tread point through lifting of the step climber.
- Additional luggage behind the backrest or hanging on one side.
- Driving with too low tyre pressure.
- Operation on uneven and/or loose surfaces



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6.3.1.2 Attaching/detaching the step climber

Insert the spring on the upper side of the step climber, from below, into the slot of the support plate of the horizontal beam and secure to the frame with the securing screw (Fig. 62).

☞ The dismantling is effected in the reverse sequence.

6.4 Seat lifter

The seat height can be increased infinitely by up to 50 cm with the seat lifter (Fig. 63).

☞ Note:
The seat lifter is not designed for closely repeated lifting movements. Carry out only necessary seat lifting.

The frequent use of the seat lifter reduces the driving range of the wheelchair.

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6.4.1 Safety information

▲ The user must be instructed on the use of the seat lifter by the specialist dealer before the first use!

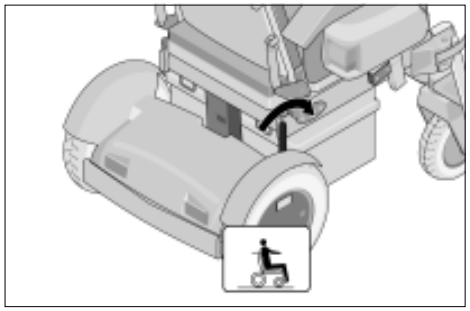
▲ The maximum loading of the seat lifter is limited to 100 kg!

▲ Carry out lifting movements only on firm, even surfaces with the wheelchair switched to the drive mode (Fig. 64).

▲ Do not drive on slopes with an extended seat lifter. – Danger of overturning!

▲ Do not cross obstacles with an extended seat lifter.
– Danger of tipping over!

▲ Check the air pressure of the tyres regularly in order to prevent an instability.



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6.4.2 Operating

The seat lifter is controlled with the control unit of the wheelchair, see the *Operating Manual for Control Units*.

6.4.3 User information applicable before the lifting movement

- ▲ The seat lifter may only be used when the user is wearing the seat belt!
- ▲ Sufficient free space must be available above the wheelchair for a lifting movement. – Danger of accident, e.g. from door frames, lamps (Fig. 65)!
- ▲ The feet must not be under an obstacle, e.g. a desk (Fig. 66).
- ▲ Maintain sufficient clearance to obstacles. The seat swivels forwards slightly during the upward movement (Fig. 67).

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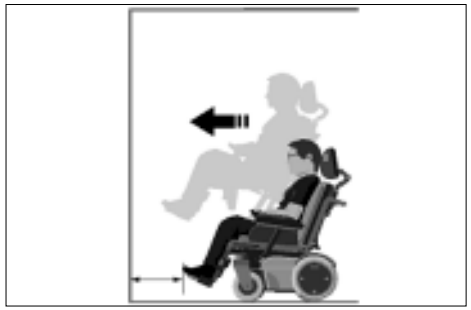

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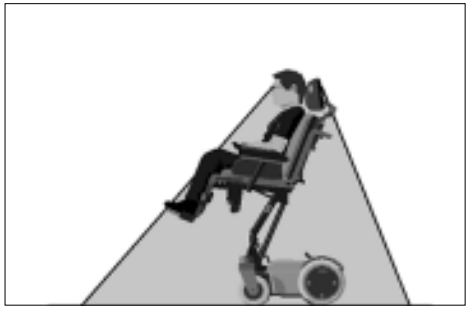
6.4.4 User information applicable after the lifting movement

- ▲ Special care is necessary when driving the wheelchair because of the restricted view (Fig. 68)!
- ▲ Pay attention to overhead objects (Fig. 69)!
- ▲ Do not lean the upper body beyond the seat contour! – Danger of overturning!
- ▲ For safety reasons, the driving speed is automatically reduced when the seat lifter is fully or partially extended or when the seat has been tilted.
- ▲ The turning circle of the wheelchair is larger when the seat has been raised with the seat lifter, the seat has been tilted or the legrests have been swivelled up.
- ▲ Do not reach under the seat during lowering and make sure that there are no objects or other persons in the area between the wheelchair frame and the seat (Fig. 70)!



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6.5 Suspension, adjustable

The suspension is adjusted to the weight of the driver. This requires the adjusting lever supplied with the wheelchair and a 13 mm open-end spanner.

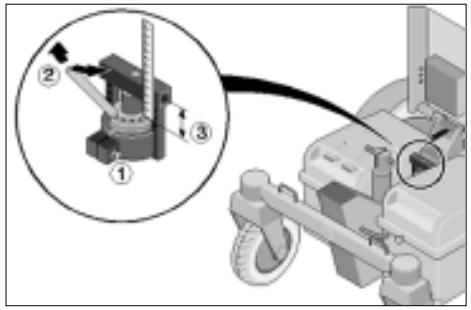
6.5.1 Adjusting the spring tension

Slacken the clamping screw (Fig. 73/ ①), insert the adjusting lever (Fig. 73/ ②) and adjust the spring tension by turning the setting cylinder.

For a correct spring tension, use a ruler or measuring tape to set the dimension ③ as follows:
at 60 – 80 kg = 28 mm,
at 80 – 100 kg = 38 mm,
at 100 – 120 kg = 48 mm.

Tighten the clamping screw (Fig. 73/ ①).

☞ Note:
The complete spring unit may only be replaced by a specialist dealer because it is under extreme tension.



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6.6 Anti-tip castors

6.6.1 Assembly

Insert both anti-tip castor holders, with the tube ends pointing to the front and the spring-loaded pins pointing down, into the tubes below the bumper until the spring-loaded pins latch. Check that the anti-tip castor holders are securely fixed in the tubes.

6.6.2 Disassembly

To detach the anti-tip castor holders, press the spring-loaded pins on the underside of the tubes in to an extent that allows the anti-tip castor holders to be pulled out of the tubes of the bumper holder.

Attention:
! Never drive without anti-tip castors. – A danger of the wheelchair tipping over to the rear exists if the anti-tip castors are not correctly attached.

- Anti-tip castors do not provide sufficient protection against tipping over in certain situations.

Therefore, do not:

▲ Lean the upper body far to the rear.
▲ Start off abruptly, especially when driving uphill.

☞ Note:
Observe the *'Safety Information for Electric Vehicles'*!

7. Maintenance

7.1 Cleaning

A regular cleaning of the electric wheelchair is necessary for your own safety and the safety of others. We have however been able to reduce the cleaning effort to a minimum through the use of the best and modern materials. Comply with the following cleaning instructions at all times, a regular cleaning will maintain the operability and value of the electric wheelchair.

☞ Note:
The vehicle driver is responsible for the correct functioning and safe condition of the vehicle when driving on public highways.

An incorrect or neglected cleaning and maintenance results in a limitation of the product liability.

▲ Do not clean the electric wheelchair with a high-pressure cleaner!

▲ Keep water and moisture away from electrical components and cables!

▲ Clean painted and chromed parts with commercially available paintwork and chrome cleaners.

Plastic parts:

The plastic covers and similar parts are manufactured from high-quality plastic. Clean these only with a moist soft cloth and commercially available plastic cleaners. Always observe the specific product information.

Upholstery and covers:

Clean the upholstery and covers with warm water. In the case of stubborn soiling, the fabric can be washed with a standard washing powder for delicate fabrics. Spots can be removed with a sponge or a soft brush.
Do not use aggressive cleaning agents e.g. solvents, or hard brushes etc..
Rinse with clear water and allow to dry.

▲ Keep the lighting components clean at all times and check for correct functioning before each journey.

▲ Always switch off the control unit, then pull out the security plug and ensure that the drive motors are switched to the drive mode before carrying out maintenance work, modifications or adjustments on the wheelchair! – Danger of accident due to unwanted wheelchair movement.

Tyres:

A difference in tyre pressure between the wheels on one axle causes the vehicle to pull to one side and makes straight-on driving difficult. A too low tyre pressure increases the rolling resistance and more energy is drawn from the batteries for the propulsion of the electric wheelchair. Always inflate the tyres to the max. permitted tyre pressure but never exceed the max. permitted tyre pressure. but never exceed the max. permitted tyre pressure.

▲ Check the tyre pressure regularly:
– see the technical data for the tyre pressure.
– Always protect the tyre valves against dust with the valve caps.
– Tread/condition: worn tread impairs the driving behaviour.
– Tyre change: always change the tyres of an axle in pairs.

7.2 Repairs

You can trustingly use an authorised workshop for any necessary repair work. It is competent to carry out the repair work and usually has trained personnel.

7.3 Customer service

Please contact an authorised dealer if you have any questions or need help. An authorised dealer has been trained by us in our factory according to our guidelines and can give advice and carry out maintenance, servicing and repairs. We have a large network of dealers and this ensures a good customer service.

7.4 Spare parts

Can only be ordered from authorised dealers. Use only original spare parts for repairs!

You must state the serial number (Fz-I-Nr.) of the wheelchair when ordering spare parts in order to ensure that the correct spare part is supplied! You will find this on the type plate.

Whenever a wheelchair change/modification is carried out by the dealer, the supplementary information, e.g. assembly/operating instructions must be attached to the operating manual for the wheelchair, the date of the modification must be recorded and stated when ordering spare parts.
This prevents the use of incorrect ordering information when spare parts are ordered.

7.4.1 Disposal

- ▲ The vehicle packing material can be disposed of as recyclable material.
- ▲ The metal parts can be disposed of as recyclable scrap metal.
- ▲ The plastic parts can be disposed of as recyclable plastic.
- ▲ The disposal must occur in accordance with the respective national regulations.

Please enquire about local disposal arrangements at your municipal authority.

7.5 Batteries

Electric vehicles require special drive batteries.

7.5.1 Unsealed batteries

Lead acid batteries (with electrolyte) have screw-on caps. The battery acid level must be checked regularly.

7.5.2 Sealed batteries

Sealed batteries (with gel or fleece) may not be opened. They are maintenance-free and the acid cannot leak during transport.

7.5.3 Battery charging

The batteries must be charged before the first journey. See the 'Batteries' section in the *Operating manual for control units* for information.

7.5.4 Battery replacement

The daily use of the electric wheelchair places a high demand on the drive batteries, they can only fulfil their function when they are maintained and charged. Batteries undergo a normal ageing process. Both batteries must be replaced when they no longer give the full power or are defective despite correct charging.
The use of batteries with different capacities is not permitted.

☞ Note:
Have a battery replacement carried out by a specialist workshop because they know about the possible risk situations and can correctly dispose of defective batteries.

7.5.5 Safety information

▲ Keep children away from batteries, accessory parts and packing material.

▲ Avoid open flames and sparking in the proximity of the batteries.
– Risk of explosion!

▲ Switch off the control unit and then pull out the main fuse before starting work on the electrical system.

▲ Never touch the battery terminals with tools, cable ends or other metal objects when working on the batteries.

Attention:
! Batteries can explode if they come into contact with sparks, e.g. due to a short circuit of the battery terminals!

Caution:
! Battery acid is very caustic! Skin and eyes can be injured, clothing and flooring can be damaged.

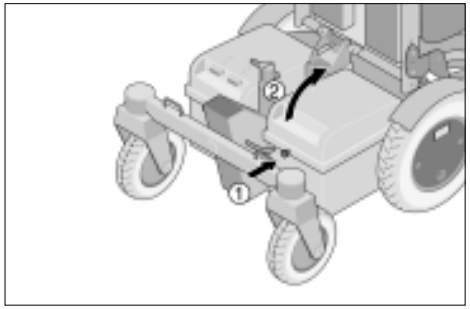
☞ Note:
Rinse skin or body parts that have come into contact with acid immediately with running water for several minutes. Then see a doctor. Immediately remove clothing wetted with acid. Wash clothes with soap solution and rinse with much water.

▲ Always wash your hands after working on the batteries.

7.5.6.1 Exposing the batteries

1. Park the wheelchair on a level surface and engage the parking brake. Switch off the control unit and then pull out the security plug.
2. Swivel up the seat. – See the Seat section.
3. Pull out the main and battery fuses. – See the 'Fuses' section.
4. Slacken the capstan-head screw (Fig. 74/ ①).
5. Swivel the battery cover to the rear and unhook it (Fig. 75).

The wheelchair is made ready for use again in the reverse sequence.



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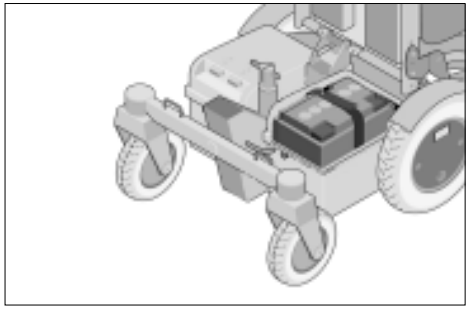
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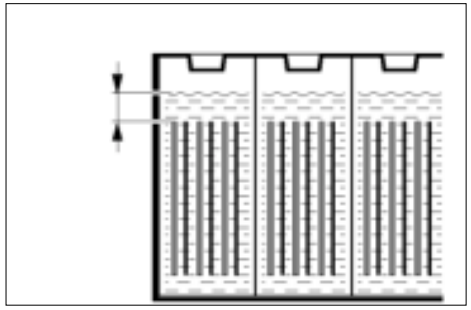
7.5.6.2 Checking the acid level:

The battery acid level falls due to evaporation of water, especially during high ambient temperature.

☞ Note:
Top up to the correct acid level with distilled water if necessary.

The acid level is correct when:
– it is just above the filling hole insert or
– it is approximately 5 mm above the top edge of the plates (Fig. 76).

☞ Note:
Maintenance-free batteries:
The filling plugs are not visible. – No maintenance is required. Acid-tightness cannot be measured.



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7.5.6.3 Measuring the acid density:

The acid density measurement with the acid checker gives an indication of the actual charge condition of the battery cells.

Attention:
! Comply with the contents of the 'Safety Information for Electric Vehicles' brochure.

– Always open the sealing cap of only one battery cell.
With the ball pump pressed, insert the tube for sucking-in vertically, from above, into the acid.
– Suck in the acid by slowly releasing the ball (Fig. 77).
– The floating indicator must swim freely in the acid.
– Compare the acid level with the charge scale on the float.

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Charge the batteries immediately if the acid density of a cell is lower than the scale value of 1.18 kg/dm³. The battery is fully charged if the acid level is above the scale value of 1.28 kg/dm³.
The acid density difference between the individual cell values should not exceed 0.02 to 0.03 kg/dm³. If it does, this can be due to battery damage. Seek the assistance of a specialist workshop.

7.6 Fuses/connections

7.6.1 Replacing fuses

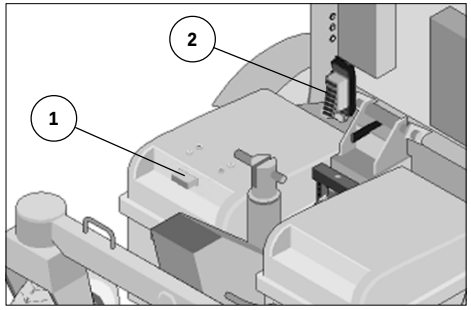
Before replacing fuses, park the wheelchair on a level surface and move the selection lever to the drive mode position to prevent the wheelchair from moving. Switch off the control unit and then pull the security plug out of the control unit.

Always replace fuses with one of the same type! New fuses can be obtained at petrol stations.
If the safety fuse blows again, take the battery to your specialist dealer for repair.

7.6.2 Fuses

- 70 A drive-electronics fuse (Fig. 78/ ①)
- Fuse holder for 4 fuses, with control unit BG16/18 in the seat module (Fig. 78/ ②)
  – 2 x 4 A for Lighting,
  – 1 x 15 A for the control system and lighting,
  – 1 x 7,5 A for the electrical add-on devices

  (seat tilt, legrests, backrest)



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7.6.3 Other connections

The pulse device - with other connectors - is located under the seat. Work in this area may only be carried out by an authorised service engineer.

7.7 Lighting

7.7.1 Headlight

Filament bulb:
24V/3W E10

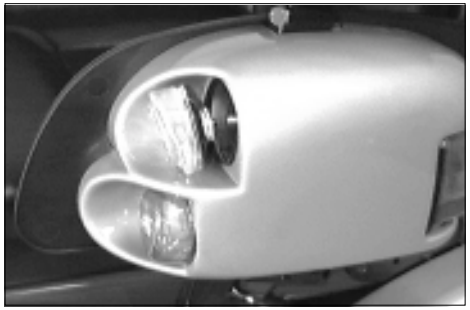
Tool: Phillips screwdriver

☞ Note:
Use a dry cloth to hold the glass body of the new filament bulb.

7.7.1.1 Removal:

– Switch off the control unit.
– Pull out the security plug and the main fuse.
– Undo the securing screw and remove the lens (Fig. 79).
– Pull the bulb holder (with bulb) out of the lens (Fig. 80).
– Screw the defective bulb out of the bulb holder.

☞ Note:
The armrest (incl. the lighting unit) can be detached for a filament bulb replacement (see *Armrest* section).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7.7.1.2 Fitting:

– Screw the new filament bulb into the bulb holder (Fig. 80). - The earth wire lies over the thread of the bulb holder.
– Insert the bulb holder (with bulb) into the lens (Fig. 80).
– Mount the lens. - First insert the top pins, then press the lens downwards and screw into place.

7.7.2 Front indicator

Spherical bulb:
24V/10W BA 15s

Tool: Phillips screwdriver

☞ Note:
Use a dry cloth to hold the glass body of the new filament bulb.

7.7.2.1 Removal:

– Switch off the control unit.
– Pull out the security plug and the main fuse.
– Undo the securing screw and remove the lens (Fig. 81).
– Press the defective spherical bulb slightly inwards, turn it and then pull it out of the bulb holder (Fig. 82).

☞ Note:
The armrest (incl. the lighting unit) can be detached for a filament bulb replacement (see *Armrest* section).

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7.7.2.2 Fitting:

– Insert the new spherical bulb. Push the side pins (bayonet catch) into the recesses of the bulb holder (Fig. 82, hold the glass body with a piece of cloth), press lightly against the spring and then turn the bulb until the bayonet catch clicks into place (Fig. 81).
– Mount the lens. - First insert the top pins, then press the lens downwards and screw into place.

7.7.3 Rear indicator

Spherical bulb:
24V/21W BA 15s

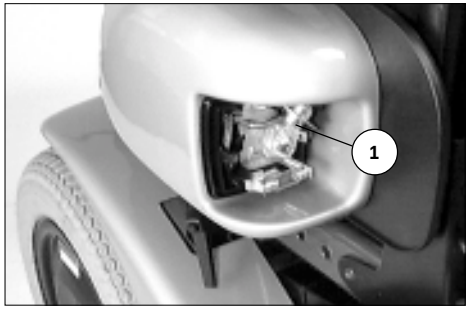
Tool: Phillips screwdriver

☞ Note:
Use a dry cloth to hold the glass body of the new filament bulb.

7.7.3.1 Removal:

– Switch off the control unit.
– Pull out the security plug and the main fuse.
– Undo the securing screws and remove the lens (Fig. 83).
– Press the defective spherical bulb (Fig. 83/ ①) slightly inwards against the spring, turn it and then pull it out of the bulb holder.

☞ Note:
The armrest (incl. the lighting unit) can be detached for a spherical bulb replacement (see 'Armrest' section).



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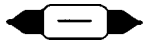
7.7.3.2 Fitting:

– Insert the new spherical bulb. - Push the side pins (bayonet catch) into the recesses of the bulb holder, press lightly against the spring and then turn the bulb until the bayonet catch clicks into place (Fig. 83/ ①).
– Mount the lens. - Press in the lens and fasten it with the securing screws (Fig. 84).

7.7.4 Rear light

Festoon bulb:
24V/C5W S8.5



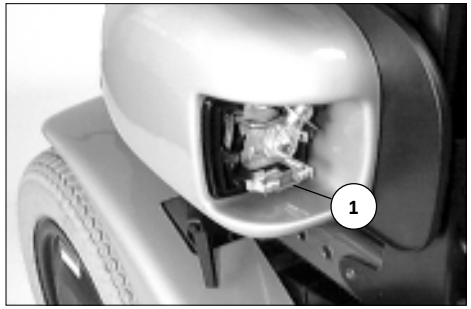
Tool: Phillips screwdriver

☞ Note:
Use a dry cloth to hold the glass body of the new filament bulb.

7.7.4.1 Removal:

– Switch off the control unit.
– Pull out the security plug and the main fuse.
– Undo the securing screws and screw off the lens (Fig. 85).
– Press the defective festoon bulb against the holding pin (Fig. 85/ ①) and then pull it out of the holder.

☞ Note:
The armrest (incl. the lighting unit) can be detached for a festoon bulb replacement (see 'Armrest' section).



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7.7.4.2 Fitting:

– Insert the new festoon bulb. - Press one tip into the hole in the holding pin and then press the other tip into the hole of the other holding pin (Fig. 85/ ①).
– Mount the lens. - Press in the lens and fasten it with the securing screws (Fig. 86).

7.8 Wheel change

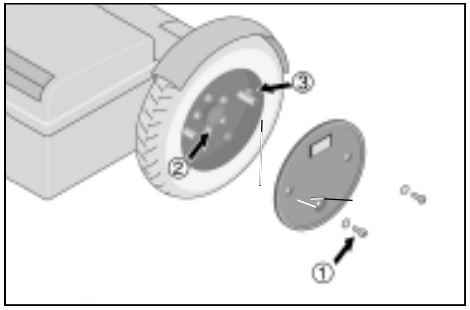
A wheel/tyre change requires technical knowledge. You should therefore have this work carried out by an authorised workshop. Sitting in the wheelchair during a wheel change is not permitted. The wheelchair must stand on a level and firm surface. Before starting the disassembly work, support the frame to prevent the wheelchair from tipping over and secure it to prevent an unwanted movement or tipping over.

Always change tyres in pairs because differently worn tyres can impair the straight-on travel of the wheelchair.

7.8.1 Disassembling the drive wheels

Tool:
Phillips screwdriver
13 mm socket spanner

Screw out the screws of the hub cap and remove the hub cap.
Then screw out the five inner wheel securing screws (Fig. 87/ ①) take off the wheel and fully deflate the tyre.



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7.8.1.1 Tyre change

Tool:
13 mm socket spanner

Attention:

! The screws secured with red caps on the outer wheel rim (Fig. 87/ ②) hold together the rim halves and must not be screwed undone until the tyre is fully deflated.

To change the tyre, fully deflate the tyre, then remove the red caps and screw out the screws (Fig. 94/ ①). Now separate the rim halves.

☞ Note:
– The valve points to the outside during the assembly.
– Press the red caps (Fig. 87/ ②) on again after the rim halves have been assembled.

– The wheel securing screws (Fig. 87/ ①) ust be tightened after the drive wheels have been mounted.
– The valve must protrude through the valve opening to the outer side when the hub cap is fitted.

7.8.2 Disassembling the swivel wheels

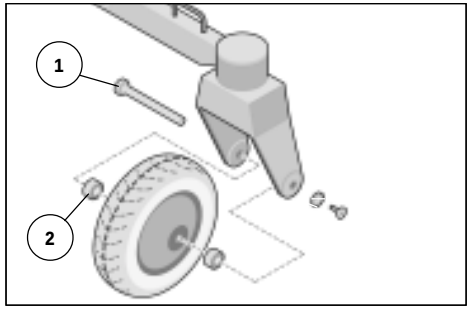
The swivel wheel axle (Fig. 88/ ①) must be disassembled before the change or repair.

☞ Note:
Make a note of the arrangement of any used sleeves (Fig. 88/ ②) and washers to ensure a correct assembly. The valve points outwards.

7.8.2.1 Tyre change

To change the wheel, first fully deflate the tyre and then screw out the screws at the outer edge of the rim (secured with red caps, Fig. 88/ ②). Now separate the rim halves.

☞ Note:
Note that the tyre valve must point to the outside during the wheel assembly.



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7.9 Preventive maintenance (annual service)

For safety reasons and to prevent accidents resulting from wear not detected in time it is important that you have the electric wheelchair serviced at annual intervals.

Annual service intervals are required under normal operating conditions. Shorter intervals for brakes and chassis checks are recommended in the case of severe operating conditions, e.g. daily driving on uphill/downhill gradients or use by a nursing service - with frequently changing wheelchair users.

The following list of annual maintenance work gives you a guide for carrying out the maintenance work. It does not outline the actual scope of the necessary work which can only be ascertained by an inspection of the vehicle.

Have this work carried out by an authorised workshop in order to ensure that the electric wheelchair offers the highest level of safety and reliability. The employees of the workshop are familiar with the technology of the vehicle and have suitable tools. They can identify the start of wear in good time and use only original spare parts.

Attention:
! The vehicle driver is responsible for the correct functioning and safe condition of the vehicle when driving on public highways.

An incorrect or neglected cleaning and maintenance results in a limitation of the product liability.

7.9.1 List of annual maintenance work

Preparation for visual check

Remove the seat and backrest elements, legrests, armrest units. If necessary, clean the vehicle or the modules before the visual check.

Visual check

- ❑ Check the frame, add-on components and accessories for damage, corrosion and damaged paintwork.
- ❑ Check the condition and fastening of electric cables and connections.

General checks

- ❑ Check the securing screws for tightness.
- ❑ Check the securing of all add-on elements.
- ❑ Check the securing of the chassis parts, add-on parts and accessories.

Chassis

- ❑ Check the fastening of the steering and drive wheels.
- ❑ Check the tyre condition and tyre pressure.
- ❑ Check the condition, functioning and smooth-operation of the steering wheel suspension.

BRAKES

- ❑ Check the automatic brake system for correct functioning.
  Max. braking distance at 6 km/h = 1m, 10 km/h = 2 m.

Electrical system

- ❑ Clean and maintain the batteries, connections and battery box.
- ❑ Check the connection and functioning of electrical legrests, backrest, seat (depending on equipment fitted).

Oil/Grease

- ❑ Rotating points and bearing points of control levers and moving parts.

Final check

- ❑ Check the lighting and signalling devices.
- ❑ Motor unlocking device (push mode).
- ❑ Brake/steering/drive test.
- ❑ General functional check.
- ❑ Test drive.

7.9.2 Fault correction

Fault	Cause	Clearance
The display of the control unit does not light after the switch-on.	The drive-electronics fuse (70 A), control system and lighting fuse (15 A) or the battery bridge (2 x 70 A) is defective or not correctly inserted.	Replace defective fuse or clean contacts and insert correctly.
Signalling line blinks after the switch-on.	Joystick moved too soon.	Correct and switch on again.
	Fault in the electronics.	Have the fault corrected by an authorised workshop.
Lighting not active.	Contact strip of the armrest is not clean.	Clean the contact strip of the armrest.
	Lighting fuse or drive electronics fuse defective.	Replace defective fuse.
	Filament bulb defective.	Replace defective filament bulb.
The wheelchair does not start off.	Motor unlocking device not latched.	Move the selection lever for the drive motors into the drive mode position and make sure it clicks into place.

8. Technical data

8.1 Kilometric performance

The kilometric performance (driving range) is extremely dependent on the following factors:

- battery condition,
- weight of the user
- driving speed
- driving style
- road surface condition
- driving conditions
- ambient temperature.
- Tyre
- Air pressure of tyres

The standard data which we have specified are realistic under the following conditions:

- ambient temperature of 27°C.
- 100% nominal battery capacity in accordance with DIN standard
- new batteries with more than 5 charging cycles,
- straight-ahead motion with fully automatic drive electronics (maximum speed)
- nominal load of 75 kg
- smooth acceleration
- level road surface.

The kilometric performance is greatly reduced by:

- frequent uphill travel,
- low battery charging status
- low ambient temperature, (e.g. in winter),
- frequent starting and stopping (e.g. in town traffic),
- old, sulphated batteries
- unavoidable frequent steering manoeuvres
- reduced speed (especially walking speed).

In practical use, the kilometric performance under 'normal conditions' is then reduced to approx. 80% – 40% of the nominal value.

8.1.1 Hill-climbing ability

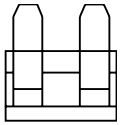
We have specified that the vehicle may be driven on gradients of up to 15% but point out that the system-related hill-climbing ability is much higher because this ability must be made available for the safe crossing of obstacles.

- nominal load of 75 kg.
- normal road surface.

Rising/falling gradients of more than 15% must be driven without driver for safety reasons (e.g. on ramps!

8.2 Fuses

Under the seat



Drive-electronics (Fig. 78/ ①): ..... 1 x 70 A
Battery bridge on the battery cover (Fig. 78/①): ..... 1 x 70 A

Fuse holder for 4 fuses, in the seat module (Fig. 78/ ②)

Lighting: ..... 2 x 4 A

Lighting and control system: ..... 1 x 15 A

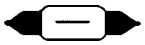
Electrical add-on devices: ..... 1 x 7,5 A

Lighting

Headlight bulb: ..... filament bulb 24V/3W E10

Front indicator bulb: ..... spherical bulb 24V/10W BA15s

Rear indicator: ..... spherical bulb 24V/21W BA15s



Rear light: ..... Festoon bulb 24V/C5W S8,5

8.3 Model Allround 970

All data within the following table relates to the standard version of the stated model.
Dimensional tolerance is ± 1.5 cm.

Model: ..... Electric wheelchair Allround 970/Code 9.970
Type plate location: ..... Under the seat, at the front left on the central frame
Class of use as per DIN EN 12184: ..... Class B
Electrical system for the drive control: ..... 24 Volt/60A max.
Electrical system for the lighting: ..... 24 V

Dimensions:

Length (incl. foot plates without/with anti-tip castors): ..... approx. 110 / 122 cm
Length (without foot plates and anti-tip castors): ..... 82 cm
Width (SW43 / SW48 across armrests): ..... approx. 66 / 68 cm
Height (textile backrest): ..... 92 cm
Height (Ergopor backrest): ..... 100 cm
Height (with headrest): ..... 120 cm

Seat height with textile seat cushion: ..... 51 cm
Seat height with Ergorpor seat cushion: ..... 57 cm
Seat width (infinitely-adjustable): ..... 43 to 48 cm
Seat depth (adjustable by way of disassembly): ..... 43 to 53 cm
Armrest height from seat textil (infinitely-adjustable): ..... 35 to 27 cm
Armrest height from seat, Ergopor (infinitely-adjustable): ..... 19 to 27 cm

Drive wheel (pneumatic tyres, 2.5 bar max): ..... 3.00-5 (14“/350 x 80 mm)
Swivel wheel, pneumatic tyres, 2.5 bar max.): ..... 3.00-5 (10“/250 x 80 mm)

Transport dimensions

Length (without foot plates and anti-tip castors): ..... 82 cm
Width: ..... 66 cm
Height (textile/Ergopor backrest folded onto seat): ..... 68 / 76 cm

Ambient temperature: ..... -20°C to +40°C
Storage temperature: ..... -25°C to +50°C
Chassis material: ..... recyclable

The CE mark conforms with the EU directive 93/42EEC for
medical products in accordance with the medical products law.

Batteries:

Unsealed drive batteries (acid): ..... 2 x 12 V 80 Ah (20h)
Sealed drive batteries (gel): ..... 2 x 12 V 56 Ah (20h)
Max. battery dimensions (LxWXH): ..... 278 x 175 x 190 mm
Permissible battery tilting angle: ..... 55°

Range (see 'Kilometric performance'):

Drive batteries (gel) 56 Ah (20h) at 6 km/h: ..... 50 km
Drive batteries (gel) 56 Ah (20h) at 10 km/h: ..... 35 km

Drive batteries (acid) 80 Ah (20h) at 6 km/h: ..... 65 km
Drive batteries (acid) 80 Ah (20h) at 10 km/h: ..... 50 km

Performance (see 'Kilometric performance'):

Max. forward speed: ..... approx. 6 km/h / 10 km/h

Max. forward speed: ..... approx. 60 mm
Obstacle crossing with step climber: ..... approx. 110 mm
Obstacle crossing downwards: ..... approx. 70 mm
Turning circle: ..... approx. 1,45 m

Max. permissible rising gradient: 15%
Max. permissible falling gradient: 15%
Max. permissible transverse gradient: 15%
Max. continuous hill-climbing ability: 12%
Stability against tipping over: 15%

Weights (basic equipment):

Max. permissible total weight: ..... 260 kg
Max. passenger weight ..... 120 kg
Max. additional loading: ..... 10 kg

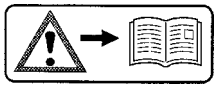
Empty weight (with gel batteries): ..... 130 kg
Transport weight (with gel batteries): ..... 130 kg

Weight (with seat lifter):

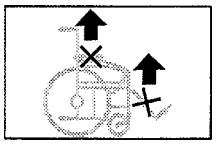
Max. permissible total weight: ..... 285 kg
Max. passenger weight ..... 100 kg

Unloaded weight: ..... 185 kg
Transport weight: ..... 185 kg

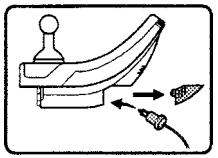
8.4 Meaning of the labels on the wheelchair



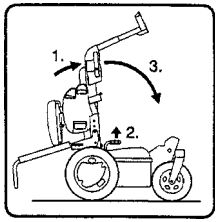
Attention:
! Read the operating manuals and other provided documentation.



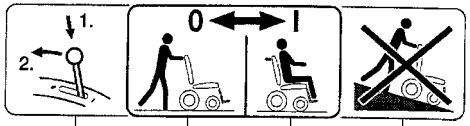
Do not lift the wheelchair at the armrests or legrests.
Detachable parts are not suitable for carrying.



Note on the battery charging socket.
The charging socket is accessible after the electric wheelchair has been switched off and the security plug has been pulled out.



Steps 1. to 3. must be carried out to lower the swivelled-up seat.



Do not switch to the push mode on slopes.

Position 1 = drive mode selected

Position 0 = push mode selected

Operating the drive/push mode selection lever

9. Service record

Vehicle data:

Model:

Delivery note no.:

Serial no. ('Fz-I-Nr.' on type plate):

Pre-delivery inspection

Retailer stamp:

Signature: _____

Place, date: _____

_____

Next safety inspection in 12 months

Date: _____

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: _____

Place, date: _____

_____

Next safety inspection in 12 months

Date: _____

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: _____

Place, date: _____

_____

Next safety inspection in 12 months

Date: _____

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: _____

Place, date: _____

_____

Next safety inspection in 12 months

Date: _____

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: ______________

Place, date: ______________

Next safety inspection in 12 months

Date: ______________

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: ______________

Place, date: ______________

Next safety inspection in 12 months

Date: ______________

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: ______________

Place, date: ______________

Next safety inspection in 12 months

Date: ______________

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: ______________

Place, date: ______________

Next safety inspection in 12 months

Date: ______________

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: ______________

Place, date: ______________

Next safety inspection in 12 months

Date: ______________

Recommended safety inspection
(at least every 12 months)

Retailer stamp:

Signature: ______________

Place, date: ______________

Next safety inspection in 12 months

Date: ______________

10. Guarantee

The guarantee period for this product is twelve months with the following exception, from 2002:
frame = 4-year guarantee
electronics and drive = 2-year guarantee
batteries= six-month guarantee.
The guarantee covers material and manufacturing defects. Excluded are wearing parts and parts/assemblies that are subject to normal wear and damage resulting from over-stressing, improper handling, damage through use of force or improper/unauthorised modification/repair.
Please contact your dealer where you purchased the product in the event of a guarantee claim.
For product liability reasons, repair and maintenance work may only be carried out by an authorised dealer and only original–ORTOPEDIA–spare parts may be used for such repair/maintenance.
The products are subject to technical improvement and design modification.
his document corresponds to the status as at September 2001.
ORTOPEDIA GmbH, Kiel

CE The product conforms with the EC Directive 93/42/EEC (MDD) for medical products

Notes

Please send me free-of-charge and without commitment your latest catalogues and product information on the following products:

☐ **Wheelchairs**
Active and universal wheelchairs, toilet and shower wheelchairs, electric wheelchairs, electric wheelchairs, Scooter,
accessories

☐ **Equipment for home care, everyday life and the rehabilitation**
Bathroom and toilet equipment, walking aids, home care

Sender

Name

Street

Postcode Town

Tel.

Fax.

Please prepay if stamp available

Response

ORTOPEDIA GmbH

– Öffentlichkeitsarbeit –

Postfach 64 09

D-24125 Kiel

Active and universal wheelchairs
Toilet and shower wheelchairs
Electric wheelchairs
Scooter
Equipment for home care, everyday life and the rehabilitation

0801 – 1 – 1. ST · Ident – Nr. 8 460 201 · 5101

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http://www.ortopedia.de

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