

VERMEIREN

Springer

INSTRUCTION MANUAL





Instructions to the specialist dealer

This instruction manual is part and parcel of the product and must accompany every product sold.

Version: C, 2014-10

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Preface

First of all we want to thank you for putting your trust in us by selecting one of our products.

The expected lifetime of your electric wheelchair is strongly influenced by the care and maintenance of the wheelchair.

This manual will help you get acquainted with the operation of your electric wheelchair.

Following of the user instructions and the maintenance instructions are an essential part of the warranty.

This manual reflects the latest product developments. Vermeiren has the right to introduce changes without the obligation to adapt or replace previously delivered models.

For any further questions, please consult your specialist dealer.

1 Product description

1.1 *Intended Use*

The electric wheelchair Springer is equipped with two types of motors, either 220W or 350W.

The electric wheelchair Springer is intended to comfortably transport children with walking difficulties or no walking abilities. This electric wheelchair is designed to transport 1 person.

The electric wheelchair is designed to transport children only, no goods.

Neither should it be used by children obviously suffering from physical or mental limitations (ex. visual impairment, ...) that render them incapable of safely handling the electric wheelchair in traffic.

The different types of fittings and accessories, and the modular construction allow full use by children disabled by:

- paralysis
- loss of limbs (leg amputation)
- limb defects or deformations
- stiff or damaged joints
- heart insufficiencies and poor blood circulation
- balance disturbances
- cachexia (decrease in muscle)

The electric wheelchair is classified as class B.

The electric wheelchair is suited for indoor and outdoor use by the occupant.

The user can propel the wheelchair by himself or have the wheelchair pushed by an attendant.

When providing for individual requirements:

- body size and weight (max. 50 kg with lift)
- physical and psychological condition
- residential circumstances
- environment

should be taken into consideration.

Your electric wheelchair should be used on flat surfaces where all four wheels are touching the ground and where there is sufficient contact to propel the wheels equally.

You should practice for use on uneven surfaces (cobblestones, etc.), slopes, curves and to get past obstacles (curbs, etc.). A particular risk is involved when crossing surfaces such as ice, grass, rubble, foliage, etc.

The electric wheelchair should not be used as a ladder, nor is it a transport for heavy or hot objects.

When using your electric wheelchair on streets or footpaths, local laws and regulations apply.

The electric wheelchair can be used on sidewalks, urban road. Under no circumstances the electric wheelchair may be used for driving on larger roads or expressways.

Use only Vermeiren approved accessories.

The manufacturer is not liable for damage caused by the lack of or improper service or as a result of not following instructions from this manual.

Compliance with the user and maintenance instructions are an essential part of the warranty conditions so we recommend that you read the following pages very carefully.

Visually impaired people can contact the dealer for the instructions for use.

1.2 Technical specifications

Technical terms below are valid for the electric wheelchair in standard settings and optimum environmental conditions. If other accessories are used, the tabulated values will change. Changes in outdoor temperatures, humidity, uphill, downhill, soils and battery levels can reduce output.

Brand	Vermeiren	
Address	Vermeirenplein 1/15, B-2920 Kalmthout	
Type	Electric wheelchair, Class B	
Model	Springer	
Maximum occupant mass	50 kg	
Description	Minimum	Maximum
Max. speed	6 km/h	10 km/h Not to be used for Germany
Continuous driving distance range*	23 km	
Overall length with footrest	1010 mm	
Effective seat width	260 mm	380 mm
Overall width (depends on the seat width)	600 mm	
Overall height	960 mm	1230 mm
Folded / dismantled length (without footrest)	840 mm	
Folded / dismantled width	Not applicable	Not applicable
Folded / dismantled height	Not applicable	Not applicable
Total mass	90 kg	
Mass of heaviest part (that can be dismantled or removed)	85,5 kg	
Masses of parts that can be dismantled or removed.	Armsupport: 2.85 kg; Footrests: 1.65 kg	
Static stability downhill	15°	
Static stability uphill	15°	
Static stability sideways	15°	
Obstacle climbing	70 mm	
Seat plane angle	15°	
Effective seat depth	310 mm	370 mm
Seat surface height at front edge	530 mm	810 mm (only if lift system is available)
Backrest angle	-5°	55°
Backrest height	370 mm	490 mm
Distance between footrest and seat	190 mm	260 mm
Angle footrest	13°	
Distance between armrest and seat	160 mm	270 mm
Front location of armrest structure	280 mm	
Driving motors	2 x 220W	2 x 350W
Batteries	2 x 12V --- / 38 Ah	


Brand	Vermeiren		
Address	Vermeirenplein 1/15, B-2920 Kalmthout		
Type	Electric wheelchair, Class B		
Model	Springer		
Maximum occupant mass	50 kg		
Description	Minimum	Maximum	
Battery charger	Exendis Impulse S (6A); IP21; Insulation class II		
Thermal fuses	50 AMP		
Control unit	DX 2 or Shark / Electromagnetic braking system		
Motor seat inclination	LA28 compact		
Motor lift system (only when lift system is available)	LA28 compact		
Motor back inclination	LA28 compact		
Minimum turning diameter	1400 mm		
Reversing width	1090 mm		
Diameter Rear wheels (number)	76.2 x 330.2 mm air (2)		
Tyre pressure, rear (driving) wheels	Max. 3.5 bar		
Diameter steering wheels (number)	76.2 x 260 mm air (2)		
Tyre pressure, steering wheels	Max. 3.5 bar		
Noise level	< 65 dB (A)		
Storage and use temperature	+5 °C to +41 °C		
Operating temperature of the electronics	-10°C to +40°C		
Storage and use humidity	30%	70%	
<p>We reserve the right to introduce technical changes. Measurement tolerance ± 15 mm / 1,5 kg / ° .</p> <p>* The theoretical driving distance will be reduced if the wheelchair is used frequently on slopes, rough ground or to climb curbs.</p>			

Table 1: Technical specifications

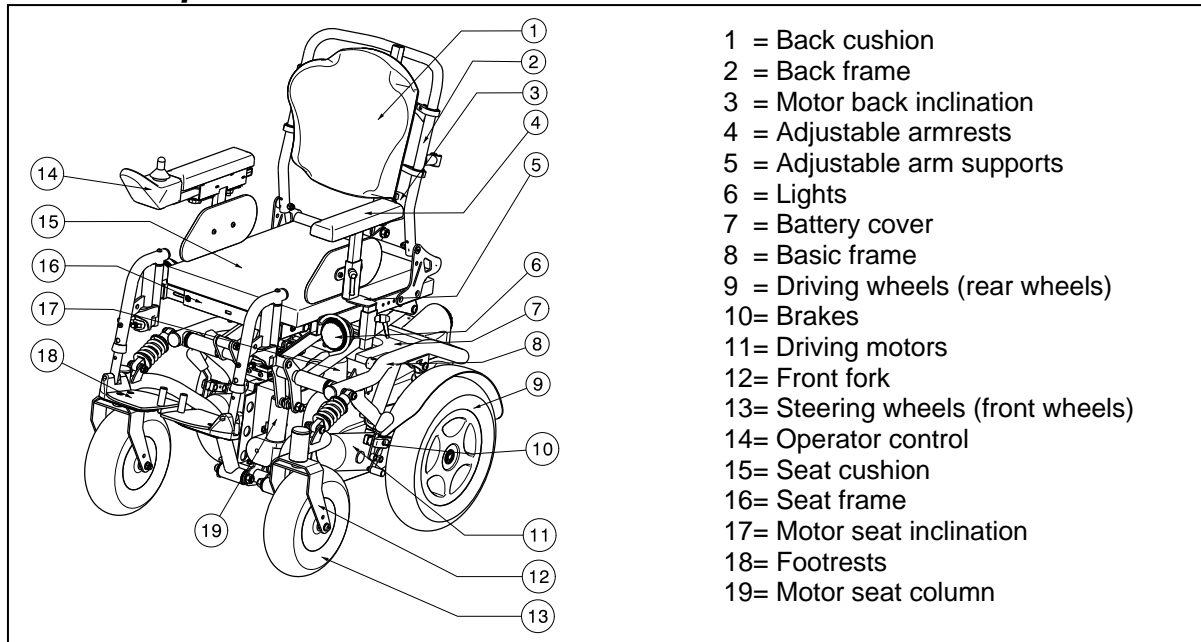
The wheelchair complies to the requirements set up in:

ISO 7176-8: Requirements and test methods for static, impact and fatigue strengths.

ISO 7176-14: Wheelchairs - Part 14: Power and control systems for electrically powered wheelchairs and scooters -- Requirements and test methods

ISO 7176-21: Wheelchairs - Part 21: Requirements and test methods for battery chargers.

1.3 Components

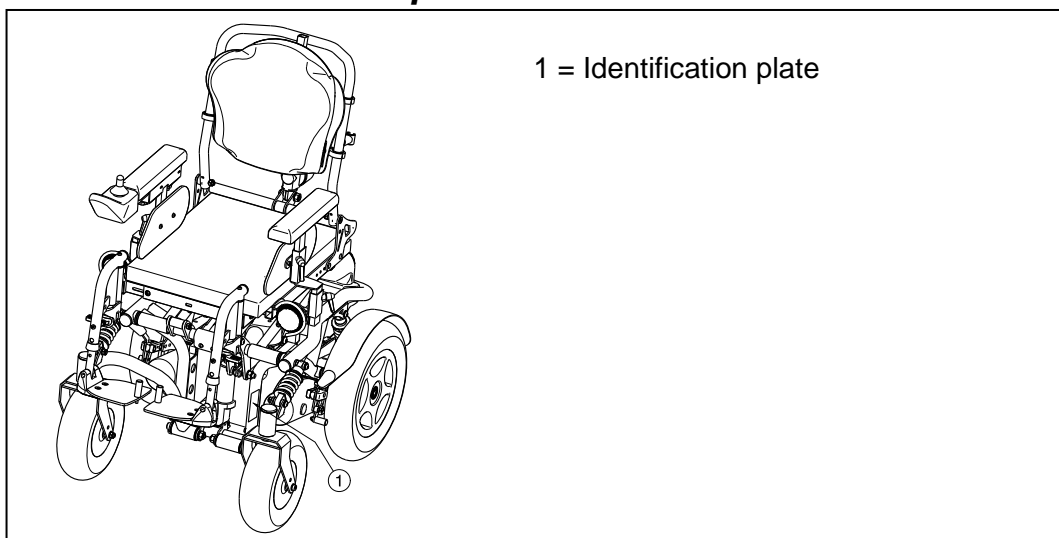


1.4 Accessories

The following accessories are available for the electric wheelchair Springer:

- Tables (B12, B15)
- Leg supports (BK7)
- Footrest (BZ7)
- Head rest (L58)
- Pelots (side supports) for stability (L04) shall be mounted into the support socket on the back tube.
- Joysticks (SE09, SE56, SE79, SE80, SE84, SE76)
- Wedge to position between the legs (B22)
- Different seat cushions
- Pelvic safety belt (B58) shall be mounted in the bolt holes on both sides of the seat frame.

1.5 Location identification plate



1.6 Explanation of symbols



Maximum mass



Limited indoor and outdoor use



Indoor use (only for battery charger)



Separate recovery and recycling of electric and electronic devices (only for battery charger)



Protection class II



Maximum safe slope



CE conformity



Maximum speed



Position: Parking brakes activated (electric driving possible)



Position: Parking brakes deactivated (free running and pushing possible, no electric driving)



During free running, be careful with slopes and inclinations



Type designation

1.7 Safety instructions

- ⚠ When getting into and out of the wheelchair, do not stand on the footrests. The footplate should be folded up beforehand.
- ⚠ Investigate the effects of shifting the centre of gravity on the behavior of the wheelchair, for example on up or down gradients, on laterally sloping ground, or when overcoming obstacles. Obtain support from an attendant.
- ⚠ If you want to pick up something (lying in front of, on the side, or to the rear of the wheelchair), you should not lean too far out to avoid tipping over.
- ⚠ When moving through doors, arches, etc. ensure that there is enough room at the sides so that you do not get your hands or arms caught or crushed and that there is no damage to the wheelchair.
- ⚠ Only use your wheelchair according to regulations. For example, avoid uncontrolled rolling against obstacles (steps, curbs, doorframes, etc) or dropping down from ledges. The manufacturer cannot assume liability for damage caused by overloading, collision or other improper use.
- ⚠ When moving on the public highway, you are subject to the rules of the road.
- ⚠ When driving your wheelchair, you should not be under the influence of alcohol or medicine as in the case of driving other vehicles. This also applies to indoor driving.
- ⚠ When travelling outdoors, adapt your driving to weather and traffic conditions.
- ⚠ Do not use your electric wheelchair in rainy conditions.
- ⚠ Avoid putting your electric wheelchair into the free-wheeling position on slopes.
- ⚠ Never reverse uphill.
- ⚠ Reduce speed when you go round corners.
- ⚠ To be better visible when driving in the dark, wear the brightest possible clothing or

clothes with reflectors and make sure that the reflectors of the wheelchair are clearly visible and drive with lightning on.

- ⚠ Make sure that the lights and reflectors of your electric wheelchair are free from dirt and/or other objects that could hide them.
- ⚠ When transporting the wheelchair, never pick it up by grasping movable parts (wheels, seat cushion, footrests, arm supports, etc.)
- ⚠ When transporting the electric wheelchair, no persons may be transferred along with it.
- ⚠ No additional passengers may be taken.
- ⚠ When storing or parking your electric wheelchair outside, protect it with a shrouding cover against humidity.
- ⚠ High levels of humidity or very cold conditions can reduce the performance of your electric wheelchair.
- ⚠ Never use your electric wheelchair as a seat in an automobile or other vehicle.
- ⚠ Be careful when using possible causes of fire such as cigarettes since they may set the seat and back covers alight.
- ⚠ Never exceed the maximum load of 50 kg with lift.
- ⚠ Use only Vermeiren approved accessories.
- ⚠ Before getting on or off, taking apart or transporting your electric wheelchair, put the electric wheelchair out with the start/stop button on the operator control.
- ⚠ Check that the profile depth of the tyres is adequate.
- ⚠ If your electric wheelchair has pneumatic tyres, be careful to inflate them to the correct pressure (*see pressure indication on the tyres*).
- ⚠ If devices and furnishings like ramps or lifts are available, use them.

2 Use

This chapter describes the everyday use. **These instructions are for the user and the specialist dealer.**

The electric wheelchair is delivered fully assembled by your specialist dealer. The instructions intended for the specialist dealer on how to set up the electric wheelchair are given in § 3.

2.1 Remarks on electromagnetic compatibility (EMC)

Your electric wheelchair has been tested according ISO 7176-21, EN 60601-1 and EN 61000-3-2 for EMC-compliance.

We wish to point out that sources of electromagnetic waves are liable to create interferences. The electronics of the wheelchair itself could affect other electric appliances too.

To reduce the effect of electromagnetic sources of interference, please read the following warnings:

- ⚠ **WARNING: The wheelchair might disturb the operation of devices in its environment that emit electromagnetic field.**
- ⚠ **WARNING: The driving performance of the wheelchair can be influenced by electromagnetic fields (e.g. electricity generators or high power sources).**
- ⚠ **WARNING: Avoid using any portable TV or radio in the immediate environment of your wheelchair for as long as it is turned on.**
- ⚠ **WARNING: Avoid using any transmitter-receiver in the immediate environment of your wheelchair for as long as it is turned on.**
- ⚠ **WARNING: Check the area for transmitter masts and avoid using the wheelchair close to them.**
- ⚠ **WARNING: If involuntary movements or braking occur, turn off the wheelchair as soon as it is safe to do so.**

Interfering electromagnetic fields may have a negative effect on the wheelchair's electronic systems. These can include:

- Disengagement of the engine brake
- Uncontrollable behavior by the wheelchair
- Unintentional steering movements

In the presence of very strong or enduring interfering fields, the electronic systems could even break down entirely or suffer permanent damage.

Possible sources of radiation include:

- Portable receiver and transmitter installations (receiver and transmitter with fixed antenna)
 - Transmitting and receiving sets
 - portable TV, radio and navigation devices
 - other personal transmitting devices
- Mobile medium-range transmitting and receiving devices (e.g. car antennas)
 - Fixed transmitting and receiving sets
 - Fixed mobile transmitting and receiving devices
 - Fixed radio, TV and navigation systems
- Long-range transmitting and receiving devices
 - Radio and television towers
 - Amateur radio sets
- Other home devices
 - CD player
 - Notebook
 - Microwave oven
 - Cassette recorder
 - etc.

Devices like electric shavers and hair dryers will have no influence provided that they function perfectly and their cabling be in an excellent condition. Please conform to the operating instructions accompanying such electric instruments to ensure trouble free operating of your wheelchair.

2.2 Carrying the electric wheelchair

The weight of the frame is 85.50 kg for the for the Springer with lift system. This is very heavy to carry.

The best way to carry the electric wheelchair is to make use of free-wheel mode of the electric wheelchair. Place the wheelchair in free-wheel mode and roll the wheelchair to the desired place.

When the wheelchair must be taken up or down stairs, do this with wheelchair ramps or lift systems. At least two persons are required to move the wheelchair up or down stairs or over single steps.

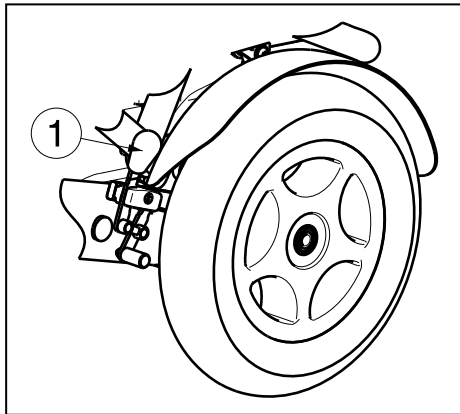
2.3 Assembly and disassembly of the electric wheelchair

The electric wheelchair is delivered fully assembled. Your dealer delivers the wheelchair fully assembled and explains the various operating elements and their use. However, for your own safety we provide a further, detailed explanation of the different parts.

2.4 Operating the brakes

Let go of the joystick to stop the electric wheelchair or use the brakes positioned near the rear wheels. Explanations below is to use the brakes. These brakes can be used by the attendant.

- ⚠ **WARNING:** The brakes are not used to slow down the wheelchair during movements – Use the brake only to prevent the wheelchair from unintended movements.
- ⚠ **WARNING:** Good operation of the brakes is influenced by wear and contamination of the tires (water, oil, mud, ...) – Check the condition of the tires before each use.
- ⚠ **WARNING:** The brakes are adjustable and can wear – Check the operation of the brakes before each use.



To apply the brakes:

1. Push the brake handles ① forward till you feel a distinctive click.

- ⚠ **CAUTION:** Risk of unintended movement – Make sure the wheelchair is on a flat horizontal surface before releasing the brakes. Never release both brakes simultaneously.

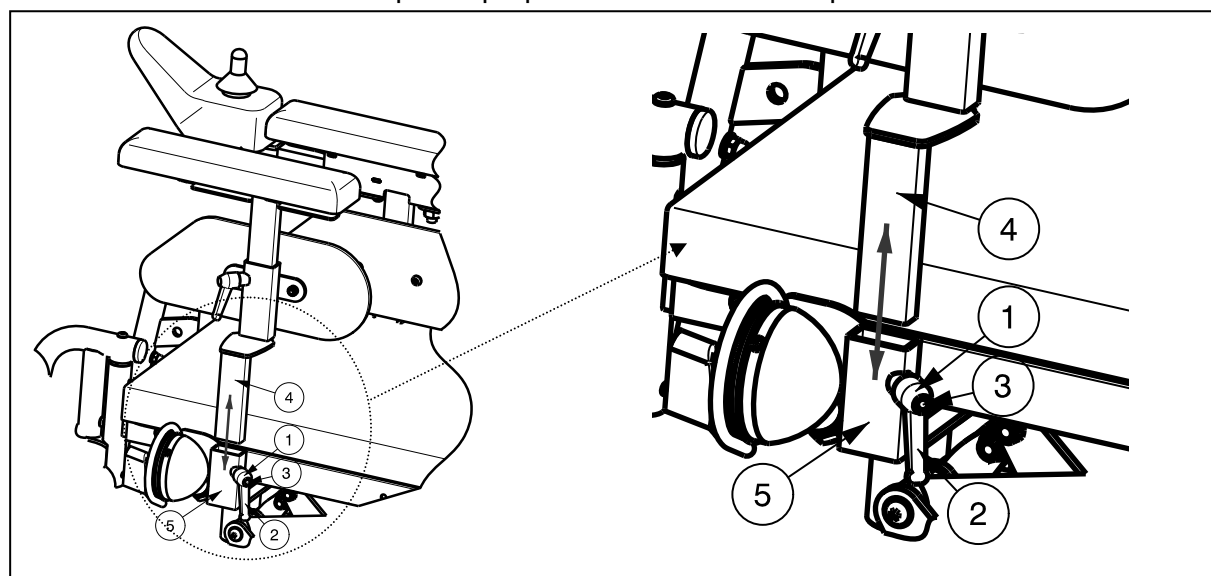
To release the brakes:

1. Release one brake by pulling the handle ① backwards.
2. Release the second brake by pulling the handle ① backwards.

2.5 Mounting or removing of arm supports or armrests

- ⚠ **CAUTION:** Risk of clamping – Keep fingers, buckles and clothes away from the attachment points of the arm support and armrest.

The arm supports can be removed so the patient can be moved sideways. The arm supports can also be removed for therapeutic purposes and to move the patient from the wheelchair.

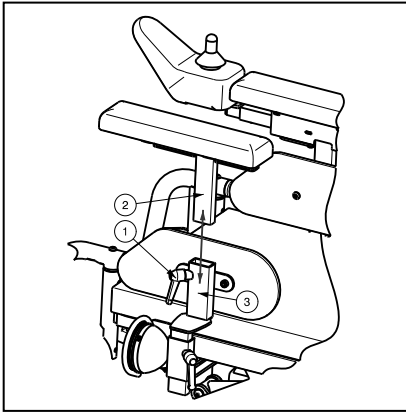


To mount the arm supports on the electric wheelchair:

1. Mount the arm support ④ in the square tube ⑤.
2. Retighten the handle ① properly. (If the lever of handle ② is not in a good position, press on button ③ on the handle and place the lever ② in good position that no risk of injury to the hands can appear.)

To remove the arm supports from the electric wheelchair:

1. Turn on the handle ① until it come loose. (If the lever of handle ② is not in a good position, press on button ③ on the handle and place the lever ② in good position that no risk of injury to the hands can appear.)
2. Remove the arm support ④ out the square tube ⑤.



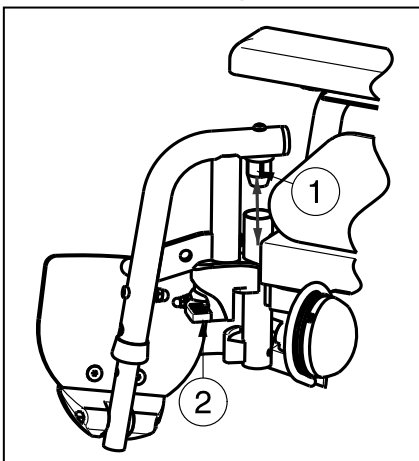
To mount the armrests on the electric wheelchair:

1. Mount the armrest ② in the square tube ③.
2. Retighten the lever ①.

To remove the armrests from the electric wheelchair:

1. Loosen the lever ①.
2. Remove the armrest ② out the square tube ③.

2.6 Mounting or removing of the footrests



The mounting of the footrests is done as follows:

1. Hold the footrest sideways at the outside of the wheelchairs frame and mount the tube hood ① into the frame.
2. Swing the footrest inwards till it clicks in position.
3. Swing the foot plate downwards.

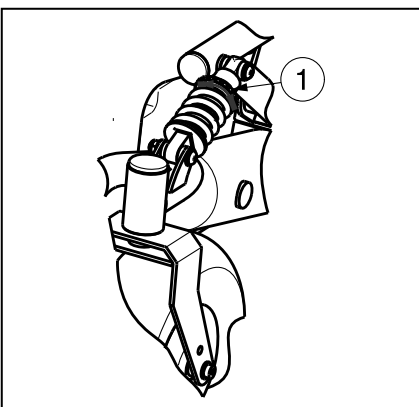
To take off the footrests:

1. Pull lever ②.
2. Swing the footrest to the outside of the wheelchair till it comes loose from the guidance.
3. Pull the footrest out the tube with the tube hood ①.

2.7 Suspension

⚠ CAUTION: Risk of injury – Set the range of both springs identically.

The strength of the springs above the front wheels can be adjusted to enhance your comfort.

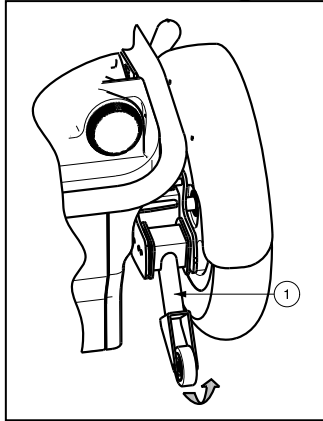


If you turn the adjuster ① to the left (counterclockwise), the range of the spring shortens and increases the comfort level of the suspension.

If your turn the adjuster ① to the right (clockwise), the range of the spring lengthens and the suspension becomes softer.

2.8 Anti-tipping device (B78)

- ⚠ CAUTION:** Risk of injury – Ensure that the tipping device is working properly before driving with the wheelchair.



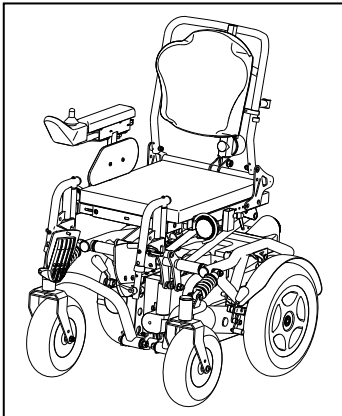
For your safety your electric wheelchair is equipped with an anti-tipping device ① that works with a suspension system, and when crossing small obstacles (no higher than 70 mm) tips back a little, yet overtipping is prevented by a stopping mechanism. Do not remove the anti-tipping device as your wheelchair will no longer be secured against accidentally tipping over.

2.9 Seat and backrest cushions

The seat and back rest cushions can be removed or mounted with the Velcro strips on the seat frame and backrest plate.

2.10 Transfer in and out the electric wheelchair

- ⚠ CAUTION:** In case you cannot perform the transfer in a safe manner, ask someone to assist you.
- ⚠ CAUTION:** Risk of injury – Do not use the joystick, footplates, arm supports as support.
- ⚠ CAUTION:** Risk of tipping over of the wheelchair – Do not stand on the foot plates.



1. Park the electric wheelchair as close as possible to the place where you want to transfer.
2. Check that the operator control is switch off.
3. Fold the foot plates upwards to prevent standing on them.
4. If the transfer is on the side of the wheelchair, remove the arm support on that side.
5. Transfer to / from the electric wheelchair.

2.11 Correct position in the electric wheelchair

Some recommendations for a comfortable use of the electric wheelchair:

1. Position your backside as close as possible to the backrest.
2. Make sure your upper legs are horizontal – If needed adjust the length of the footrests.

2.12 Driving the electric wheelchair

- ⚠ WARNING:** Risk of burns – Be careful when driving in hot or cold environments (sunshine, extreme cold, saunas, etc.) for a sufficient amount of time and when touching - Surfaces can assume the environment temperatures.
- ⚠ WARNING:** Risk of unsafe settings - Use only the driving characteristics described in this manual.

2.12.1 Preparing the electric wheelchair for use

When you use your electric wheelchair for the first time, make sure that it is standing on level ground. All wheels must be in contact with the ground.

1. Make sure that the motor is engaged and the contact is off.
2. Adjust the wheelchair best suited for yourself.
3. Set the operator control in the most comfortable position.
4. Sit down on the seat and verify that both armrests have been adjusted so your forearms are folded down.
5. Put your wheelchair on with the "ON/OFF" button from the operator control.

Now put the speed control on the operator control to the minimum position. Your electric wheelchair is now ready for use.

2.12.2 Handling after usage

Before getting off from your electric wheelchair, make sure that all four wheels touch the ground simultaneously.

Push on the "ON/OFF" button from the operator control, the display of the operator control goes out.

2.12.3 Parking the electric wheelchair

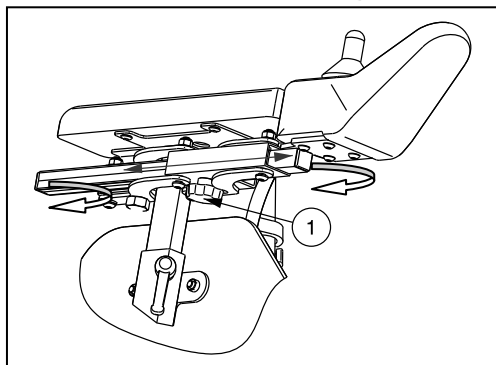
Once your electric wheelchair has been turned off, no command can be sent to the driving system. Always park your electric wheelchair on sites that are easy accessible and on horizontal surfaces that the four wheels are touching the ground.

2.12.4 Operator controls

* DX2 controller or Shark controller

The instructions for use the operator control you can find in the separate user manuals of the operator controls that is included with your electrical wheelchair.

2.12.5 Adjusting operator control



The operator control's horizontal position can be changed by loosening screw ①. The unit can then be adjusted as desired, or removed. Screw ① must then be retightened properly. If screw ① is pulled to the side, the steering unit can be turned to the side.

NOTE: Depending on the features of your wheelchair, screw ① could also be located on the side of the guide tube.

2.12.6 Connections for charger / program unit

⚠ WARNING: Risk of injury - Check that all plugs (battery charger and programming unit) are removed before setting the wheelchair in motion.



The socket for connecting the charger supplied is located on the front of the control unit. Here, too, is the connection for the programming unit, which should only be connected and used by authorised persons who have been trained to program it (Vermeiren personnel).

2.12.7 Your first trip

⚠ WARNING: Control your electric wheelchair - Accustom yourself with the driving behavior of your electric wheelchair.

- Driving

Once you are seated on your electric wheelchair and have set it on as described above, take the joystick with your hand and push this in the required direction i.e.:

PUSH ACTION FORWARD = FORWARD MOVEMENT
PUSH ACTION BACKWARD = BACKWARD MOVEMENT

- Braking

To brake, let go of the joystick, which will let it return to the zero position and slow down your electric wheelchair to a gentle stop. Practice pulling away and braking to get accustomed to the electric wheelchair. You need to be able to estimate how your electric wheelchair will react when you drive or brake.

- Driving in corners and bends

⚠ WARNING: Risk of tipping over - Reduce your speed before you enter a curve or corner.

⚠ WARNING: Risk of clamping - Always maintain an adequate distance from corners and obstacles.

Move the joystick into the position you wish to turn. The front wheels will turn accordingly and steer the electric wheelchair into a new direction. It is very important that you ensure that there is enough space allowing you to go around bends and corners. Narrow passages must preferably be approached in a large curve so as to allow you to enter the narrowest part as straight from the front as possible.

Take care not to enter curves and corners diagonally. By 'cutting the corner', chances are that your rear wheels will run into obstacles and destabilize your electric wheelchair.

2.12.8 Backward movement

⚠ WARNING: Control your electric wheelchair - Accustom yourself with the driving behavior of your electric wheelchair.

⚠ WARNING: Control your speed - Always go backward in the lowest speed possible.

⚠ WARNING: Risk of collision - Always look to the back when you go backward.

Rearward driving requires increased concentration and care. This explains why we have greatly reduced the speed of rearward movement in comparison with forward driving. But we still recommend that you put the speed on minimum when you drive backward.

2.12.9 Going uphill

⚠ WARNING: Control your electric wheelchair - Accustom yourself with the driving behavior of your electric wheelchair.

⚠ WARNING: Control your electric wheelchair - Never put your electric wheelchair in neutral on slopes.

⚠ WARNING: Control your speed - Moving on slopes as slow as possible.

⚠ WARNING: Risk of tipping over - Do not exceed the maximum gradient of static stability uphill (see paragraph "Technical specifications")

⚠ WARNING: Never reverse going uphill.

Always approach slopes directly from the front and, to avoid tipping over, see that all four wheels stay in contact with the ground at all times (ramps, driveways, etc.).

If you come to a stop on a slope by letting go of the joystick, the engine break will prevent your electric wheelchair from rolling backward. As soon as the joystick returns to zero position, the engine break is activated.

To resume your uphill drive, push the joystick as much as possible to the front to ensure the release of a sufficient amount of power. This will allow your electric wheelchair to slowly ascend the slope.

If your wheelchair is unable to drive up, turn the speed control up and try again.

2.12.10 Going downhill

- ⚠ **WARNING: Control your electric wheelchair - Accustom yourself with the driving behavior of your wheelchair.**
- ⚠ **WARNING: Control your wheelchair - Never put your electric wheelchair in neutral on downhill slopes.**
- ⚠ **WARNING: Control your speed - Moving on downhill slopes as slow as possible.**
- ⚠ **WARNING: Risk of tipping over - Avoid sharp bends.**
- ⚠ **WARNING: Risk of tipping over - Do not exceed the maximum gradient of static stability downhill (see paragraph "Technical specifications")**

Always approach downhill slopes directly from the front. Slantwise approaches can lead to some of the wheels no longer staying in contact with the ground (danger of tipping over). If one of the back wheels fails to make contact, the transmission of power will be cut and the electric wheelchair come to a standstill.

The weight of the electric wheelchair will increase your downhill speed. Lower the speed on the operator control.

Avoid sharp bends on downhill slopes. The weight of your electric wheelchair could cause your electric wheelchair to lift up on one side or even fall over around bends.

2.13 Driving the electric wheelchair on ramps

- ⚠ **WARNING: Risk of injury - Do not exceed the maximum load of the ramps.**
- ⚠ **WARNING: Risk of injury - Choose the correct ramps so there can not be caused any injury or damage. We do not accept any liability for injury or damage caused by an improper choice of ramps.**
- ⚠ **WARNING: Risk of injury - Be sure that the wheel height is high enough to get over the free height of the ramps. The electric wheelchair frame may not touch the ramps.**
- ⚠ **WARNING: Risk of injury - Use a restraining safety belt to secure yourself in your wheelchair.**
- ⚠ **WARNING: Risk of tipping over - Put the adjustment functions (seat, back, footrests, ...) that the wheelchair has the best stability.**

Should you wish to use ramps to drive over an obstacle, please note the following:

1. Find out from the manufacturer what the maximum load is for the ramps.
2. Drive on the ramps at the lowest speed possible.
3. See the instructions in the chapter "your first trip".

If the wheelchair has adjustment functions, ensure that (because these has influence on the stability of the electric wheelchair):

1. The seat is in the lowest position as possible and in the horizontal position.
2. The back is in the upright position.
3. The foot supports have been set so that no collision can occur while passing the obstacle.

If another person is pushing you, note that the large weight of the electric wheelchair exerts appreciable reverse forces.

2.14 Pushing the wheelchair

- ⚠ **WARNING: Control your electric wheelchair - Never put your electric wheelchair in neutral while you are driving.**
- ⚠ **WARNING: Control your electric wheelchair - Never put your electric wheelchair in neutral on slopes. It may accidentally roll away.**

The wheelchair shall be fitted with a freewheel device that is accessible and operable only by the attendant.

2.14.1 220W motors-6km/h or 350W motors-10km/h

Put the chair in neutral with the adjusting levers ① on both motors.

Clutch or declutch the motor by following the instructions below:



In free running mode, the electronic brake is deactivated and the wheelchair will no longer be held back. Do not activate free running mode on slopes.



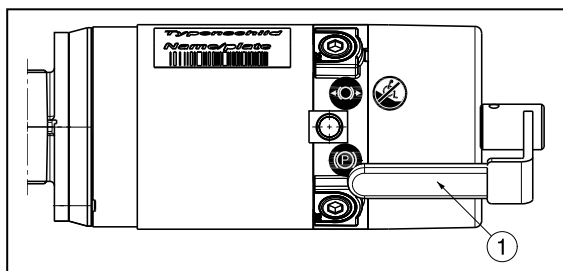
DRIVING

Push the adjusting levers ① of both motors in the position of the symbol for driving. Switch the operator control out and in. Electronically controlled driving is now possible.



NEUTRAL

Pull the adjusting levers ① of both motors in the position of the symbol for neutral and you will activate the wheelchair's free-running mode. The wheelchair can now be pushed without electronic drive.



⚠ You should only use free-running to transport the wheelchair or to move it out of a danger zone.

⚠ When free-running is activated, the electromagnetic braking system is deactivated, so the wheelchair is no longer secured against rolling away. Take care not to set the wheelchair down on slopes or uneven terrain, or it may accidentally roll away.

⚠ The electronic system will indicate, through the lock symbol flashing, that electronic driving is not possible.

2.15 *Transport in the car*

- ⚠ **WARNING:** Risk of injury - No people or objects should be under the electric wheelchair, during transportation.
- ⚠ **WARNING:** Risk of injury - See that the wheelchair is attached properly. So you can avoid injury from the passengers during collision or sudden braking.
- ⚠ **WARNING:** Risk of injury- Use for attaching the wheelchair and passenger **NEVER** the same seatbelt.

To transport the wheelchair in the car use following steps:

The best way to transport your electric wheelchair in the car is to drive the electric wheelchair in the car by using ramps.

When you are not experienced to drive the electric wheelchair by using of ramps you can also put the wheelchair in neutral mode and push the wheelchair in the car by using ramps.

When the wheelchair does not fit in the car it is also possible to transport the wheelchair by the following steps:

1. Remove all moveable parts prior to transporting (footrests, armrests, operator control, etc.)
2. Store moveable parts safely.
3. Place the electric wheelchair in the car with 2 persons by grasping to the fixed parts of the frame.
4. Attach the solid parts of the frame securely to the vehicle.
5. Place the wheelchair in drive mode (engage the parking brakes) and check that the operator control is switched off.

2.16 *Use of the wheelchair as seat in a motor vehicle*

- ⚠ **WARNING:** The wheelchair has passed the crash of ISO 7176-19: 2008 and, as such, has been designed and tested for use only as forward-facing seat in a motor vehicle.
- ⚠ **WARNING:** The wheelchair's pelvic belt alone is not suited as an occupant restraint belt.

The wheelchair is tested using the four-point strap-tie system and a 3-point occupant-restraint system.

Whenever feasible, use the seat of the vehicle and store the wheelchair in the cargo area.

Steps to secure the wheelchair in a motor vehicle:

1. Check that the vehicle is equipped with a suitable wheelchair tie down and occupant-restraint system, conform ISO 10542.
2. Check that the components of the wheelchair tie down and occupant restraint system are not frayed, contaminated, damaged or broken.
3. If equipped with an adjustable seat and/or back tilt, make sure that the wheelchair user is sitting as upright as possible. If the user's condition prevents this, a risk assessment should be done to evaluate the user's safety during transit.
4. Remove all mounted accessories such as trays and respiratory equipment, and secure them in a safe place.
5. Position the wheelchair facing forward in the travelling direction, centrally between the tie-down rails mounted in the floor of the vehicle.
6. Make sure that the indicated zones around the wheelchair user are clear from rigid vehicle parts.

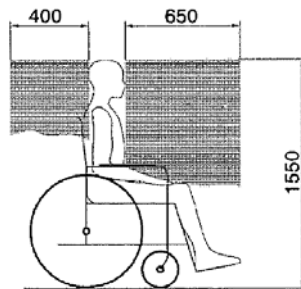


figure 1

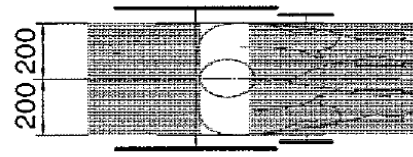


figure 2

7. Mount the front securement straps according to the instructions of the strap-system manufacturer at the indicated place. (figure 3)
This place is marked on the wheelchair with a symbol. (figure 4)
8. Roll back the wheelchair until the front straps are tight.
9. Apply the wheelchair brake.
10. Mount the back securement straps according to the instructions of the strap-system manufacturer at the indicated place. (figure 3)
11. This place is marked on the wheelchair with a symbol. (figure 4)

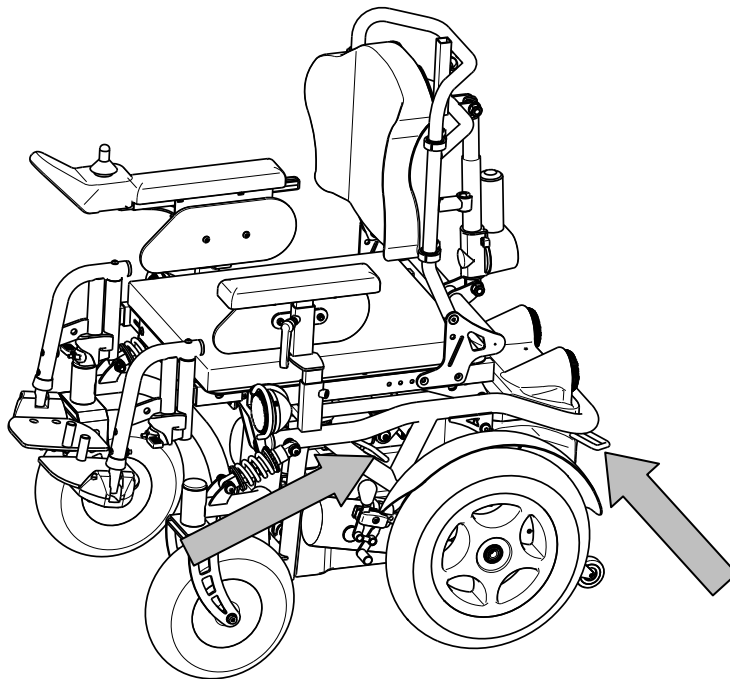


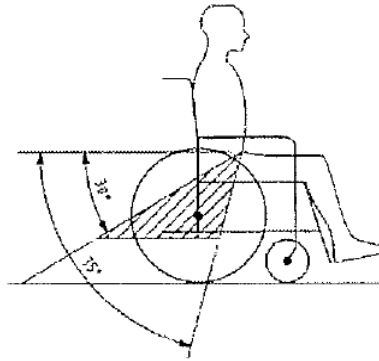
Figure 3



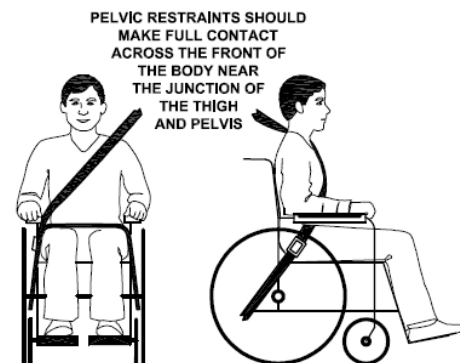
figure 4

Steps to secure the wheelchair user:

1. Remove both arm rests.
2. If present, attach the wheelchair's pelvic belt.
3. Attach the occupant restraint belts according to the instructions of the strap-system manufacturer.
4. Wear the pelvic belt low across the front of the pelvis, so that the angle of the pelvic belt is within the preferred zone of 30° to 75° to the horizontal, similar to that shown below.



5. A steeper (greater) angle within the preferred zone is desirable.
6. Adjust the belt tightly according to the instructions of the strap-system manufacturer, consistent with the user's comfort.
7. Ensure that the restraint belt connects in a straight line to the anchor point in the vehicle and that no bends in the belt are visible, for instance at the axle of the rear wheel.
8. Install the arm rests, if desired. make sure that belts are not twisted or held away from the body by wheelchair components such as arm rests or wheels.



2.17 Transport in an airplane

The electric wheelchair can be transported in an airplane. Electric wheelchairs shall be checked at the desk. Announce the wheelchair on time by the concern airline before departure. Do not use the electric wheelchair as a seat in an airplane, the wheelchair must be stored in the luggage place.

To transport the wheelchair in an airplane note the following requirements:

1. Type and properties of wheelchair (joystick, batteries)

The wheelchairs shall be foreseen of dry or gel batteries. Mostly these batteries must not be removed out the wheelchair. Only disconnect and isolate the electrical connections on the battery.

2. Dimensions and weight of the wheelchair

The allowable weight and dimensions of the wheelchair depends on the type of the airplane.

3. Damage on the wheelchair

It is possible that the wheelchair could be damaged because the wheelchair will be stored in a narrow area with the suitcases and other goods.

To prevent damage on the wheelchair:

- Put the electrical adjustments in standard position (lift column as low as possible, seat inclination horizontal, back inclination the most forward).
- Fold the footplates upwards, place the armsupports in the most inward position.
- Check that the adjustment levers are positioned inwards.
- Cover the operator control with an soft material that can withstand shocks.

Before travelling contact the concern airline about there requirements for transporting the wheelchair in an airplane.

2.18 Batteries

The standard for your electric wheelchair is two closed, 12 V/38 Ah AGM batteries. The batteries used with your electric wheelchair are drive batteries which only attain full capacity after a few charging and use cycles.

If the batteries lose their power after long usage, or if they are damaged, get them both replaced by a specialist dealer only.

We accept no liability for damage caused through using other types of batteries. If the batteries are opened, all manufacturer liability and all claims will become void. Do not use the batteries at temperatures below +5°C or above +50°C (the ideal is: +20°C).

2.19 Battery charger

To charge the batteries, only use the battery charger supplied - IMPULSE S (6 A). For the user instructions of the battery charger you can refer to the manual of the Impulse S that is delivered with your battery charger.

2.20 Charging the batteries

⚠ CAUTION: Risk of injury - Only use the battery charger supplied to charge batteries.

As the IMPULSE S (6 A) charger aligns the charge curve with the AGM batteries' charge level, you can recharge your wheelchair after each use. This avoids any aggressive battery charging and the "memory effect".

Recharge the wheelchair, at the latest, when the charge indicator on the steering unit goes into the red zone. If, despite this, you continue driving, eventually only the last red diode lights up and flashes continually, indicating that the batteries are nearly flat. If you disregard this warning signal, too, an error message will shortly appear indicating that the batteries can no longer provide power for driving. The batteries should therefore be charged before these error messages appear, using the supplied battery charger IMPULSE S (6 A). Avoid the batteries becoming drained, in any case.

• FIRST USE

First put the plug into the wall socket. After an LED combination has lit up, the charger switches to STANDBY. Both LEDs (green and yellow) are active.

Next, connect the charger cable with the three-pin plug to the loader socket on the electric wheelchair's operator control. Once connected to the batteries, the charger automatically begins charging. Now only the yellow LED is active.

When charging is complete, the yellow LED goes out and the green LED comes on. Now remove the charger cable from the operator control. The charger switches back to STANDBY mode (yellow and green LEDs active).

If the charger cable is not removed, a tiny current will keep the batteries topped up (trickle charging).

If you decide not to use your electric wheelchair for an appreciable period, you must nevertheless recharge it regularly to keep it in a running condition ready for immediate use.

The manufacturer accepts no liability for damage caused by improper charging.

For further information, please refer to the user instructions provided with the charger.

3 Installation and adjustment

The instructions in this chapter are for the specialist dealer.

The Springer has been designed to be adjusted with a minimum of replacements parts and to give the child a lot of comfort.

To find a service facility or specialist dealer near you, contact the nearest Vermeiren facility. A list of Vermeiren facilities can be found on the last page.

⚠ WARNING: Risk of unsafe settings - Use only the settings described in this manual.

⚠ WARNING: Risk of tipping over - Variation allowed adjustments can still change the stability of your wheelchair (tilt back or sideways).

3.1 Tools

The Vermeiren Springer shall be delivered with:

- Wrench set n° 10
- Allen keyset n° 4 to n° 5
- Screwdriver Phillips head

3.2 Manner of delivery

The electric wheelchair shall be delivered with:

- 1 frame with arm supports, operator control, rear and front wheels
- 1 pair of footrests
- 1 lift system
- 2 x drive batteries, 2 x drive motors
- Motor seat and back inclination, lift system
- Anti-tipping device
- Impulse S charger (6A)
- Electronics
- Tools
- Manual
- Accessories

Before use check everything is included and that no products are damaged (example by transport, ...).

3.3 Possible adjustments

⚠ WARNING: Risk of injury - Turn the electric wheelchair off before you perform any adjustments.

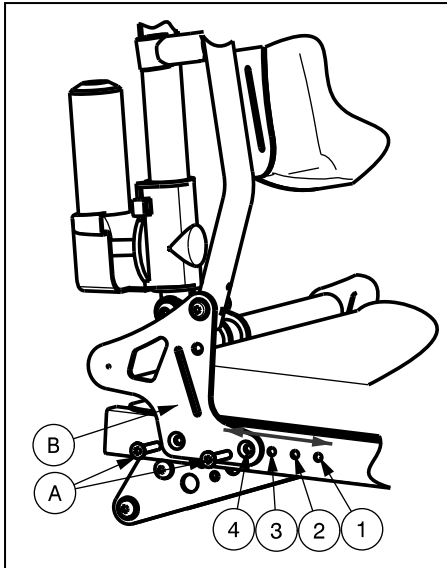
⚠ WARNING: Risk of injury - Never perform any adjustments while you are driving.

⚠ WARNING: Risk of injury - Adjustments may only performed by your specialist dealer.

⚠ WARNING: Risk of injury - Make sure all screws, handles are firmly secured by hand before driving with your electric wheelchair.

3.3.1 Adjusting the seat depth

- ⚠ **WARNING:** Risk of injury - Never change the seat depth when the user is sitting in the wheelchair.
- ⚠ **WARNING:** Risk of injury - Make sure that the backrest plates on both sides are set in the same seat depth position.



The Vermeiren Springer is adjustable in 4 seat depths by changing the position of the back rest into different positions.

Seat depth	Position of backrest
310 mm	Position 1
330 mm	Position 2
350 mm	Position 3
370 mm (Standard)	Position 4

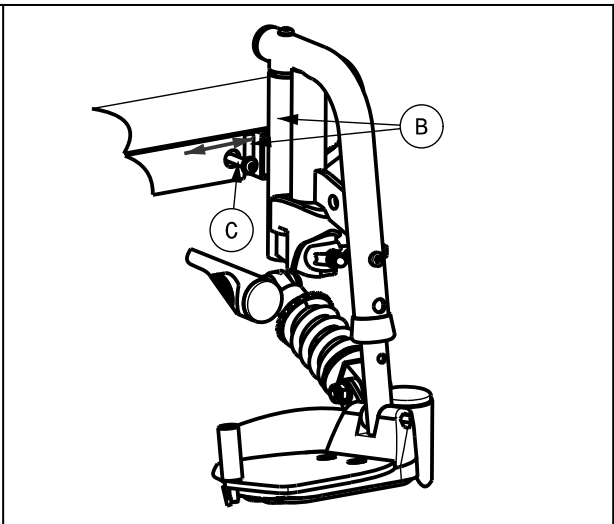
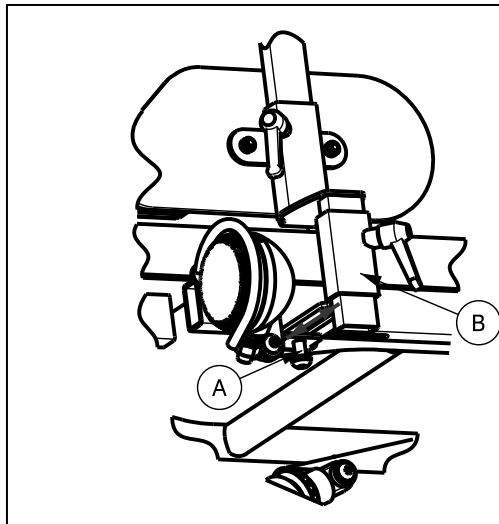
Table 2: Seat depth

1. Remove the two screws Ⓐ from the backrest plates Ⓑ on both sides.
2. Adjust the backrest until the desired seat depth.
3. Retighten the two screws Ⓐ properly by hand.

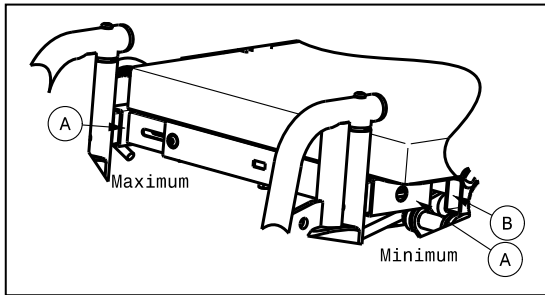
3.3.2 Adjusting the seat width

- ⚠ **CAUTION:** Risk of tipping over - Make sure that the arm supports and footrests are positioned symmetrically from the seat.

To adjust the seat width 260 mm - 380 mm you must change the position of the arm supports and leg supports:



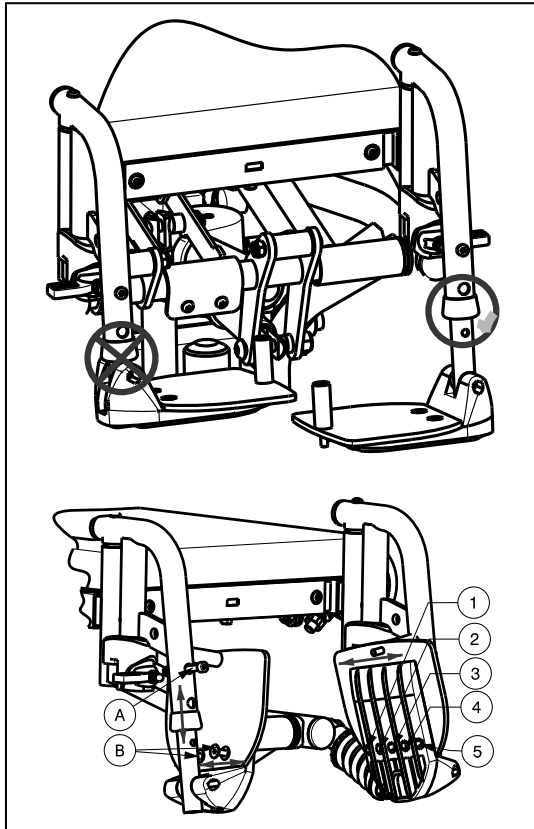
1. Loosen the screw Ⓐ on the underside of the seat frame.
2. Position the arm support Ⓑ in the desired position.
3. Retighten the screw Ⓐ properly by hand.
4. Adjust the other arm support on the same way.
5. Remove the screw Ⓒ on the front of the seat.
6. Adjust the footplate Ⓓ in the desired position.
7. Retighten the screw Ⓒ properly by hand.
8. Adjust the other foot support.



The maximum position of the footrest is until the square tube of the footrest (A) has the same position of the outside square tube of the seat frame (B) otherwise you will damage the front lights.

3.3.3 Adjusting of the footrests

⚠ CAUTION: Risk of tipping over - Make sure that the footrests are positioned symmetrically on both sides.



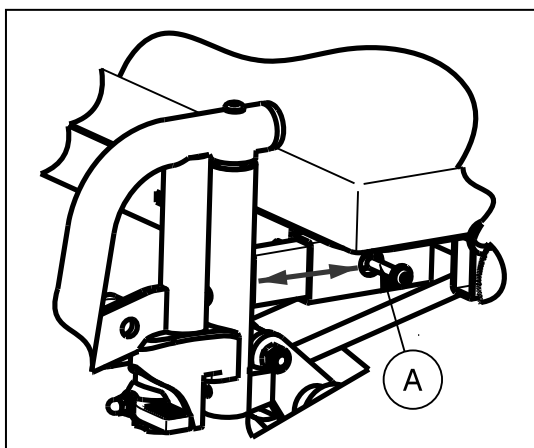
Do not put the footrests in a position where the footplate attach the outer tube.

Adjust the length of the footrests as follow (in six different positions):

1. Remove the screw (A).
2. Adjust the length of the footrest to a comfortable length.
3. Tighten the screw (A) properly.

Adjust the depth of the footrests as follow (in three different positions):

1. Remove the screws (B).
2. Adjust the depth of the footrest to a comfortable position.
 - Position 1: hole 1 and 3
 - Position 2: hole 2 and 4
 - Position 3: hole 3 and 5
3. Tighten the screws properly (B).

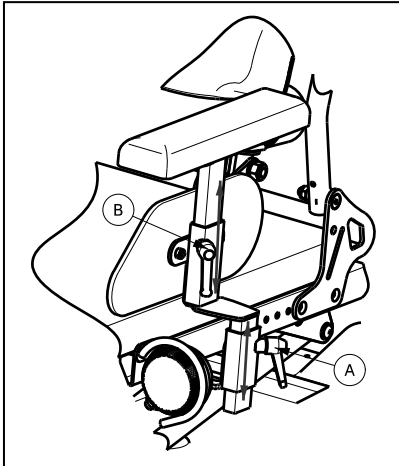


Adjust the thigh length as follow (Range of thigh adjustment shall be 30 mm):

1. Remove the screws (A) on the side of the seat frame.
2. Adjust the thigh length to the desired position.
3. Tighten the screws properly (A).

3.3.4 Adjusting the armrests

⚠ CAUTION: Risk of tipping over - Make sure that the armrests are positioned symmetrically from the seat.



The height of the armrests can also be adjusted.

1. Loosen the handle **A** and/or the handle **B**.
2. Adjust the armrest into the comfortable position.
3. Tighten the handle **A** and/or handle **B** by hand.

3.3.5 Adjusting the backheight

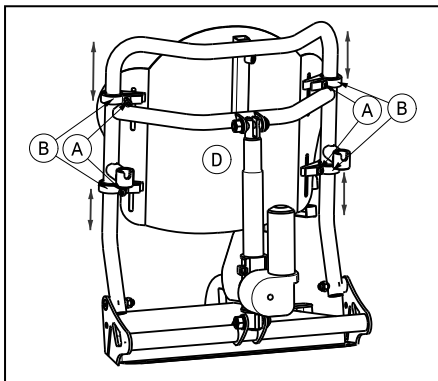
Make sure that the backrest is on both sides placed in the same position for the comfort of the patient.

The height of the back can be adjusted from 370 mm - 490 mm.

There are two manners to move the back.

Method 1:

The height of the back can be adjusted over a range of 50 mm.

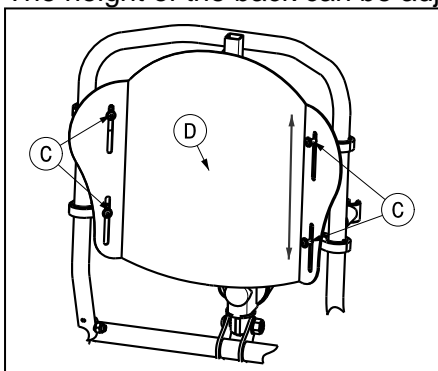


1. Loosen the screws **A** on the backrest clips **B** a little.
2. Now the backrest clips **B** comes open.
3. Move the backrest clips **B** and position the backrest plate **D** in the desired height.
4. Retighten all the screws **A** by hand.

Be aware that the clips does not touch the horizontal tubes (tubes for attachment of motor, head rest) or the tubes for mounting the side pelots. Keep a safe distance of 20 mm (0.79 in.) between backrest clips and the tubes.

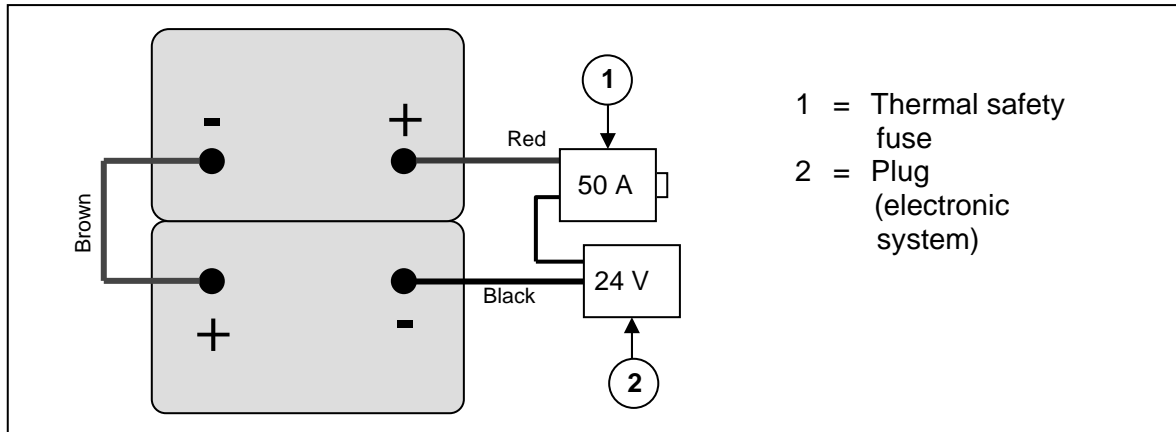
Method 2:

The height of the back can be adjusted over a range of 60 mm.



1. Loosen the screws **C** on the backrest plate.
2. Move the backrest plate **D** to the desired backrest height.
3. Retighten all the screws **C** by hand.

3.4 Battery connections



3.5 Tyre changing

- ⚠ **CAUTION:** There must be no air in the tube before the tyre can be removed.
- ⚠ **CAUTION:** Risk of damage - If handled improperly, the rim might become damaged.

Only an expert can guarantee correct assembly. Work not done by your specialist dealer, would void any warranty claims.

Use only inflating equipment which complies to regulations and indicates the pressure in bar. We do not accept any liability for damage caused by using inflation equipment or wheels not supplied by the manufacturer.

If you want to change the tyres or inner tubes, you should note the following:

- ⚠ **WARNING:** Risk of injury - Check that the pressure correct is.
- ⚠ **CAUTION:** Risk of injury - Make sure that no objects, body parts or inner tubes are pinched between the tyre and the rim when mounting a tyre.

- **Steering wheels (front wheels)**

Removing tyre from rim:

1. Let all the air out of the tube.
2. Insert a tyre lever between the tyre and the rim.
3. Slowly and carefully push the lever downwards. This will pull the tyre over the edge of the rim.
4. Move the lever along the rim, the tyre will jump out.
5. Now carefully remove the tyre from the rim and then remove the tube.

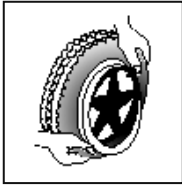
Note the following before inserting the new tube:

Check the rim bed and the inside wall of the tyre for foreign matter and clean these properly if necessary. Check the condition of the rim bed, especially around the position of the air valve. Please use only genuine original replacement parts. No liability is accepted for damage caused by non-genuine replacement parts. Kindly contact your specialist dealer.

Assembly tyre from rim:



Put the deflated tube around the center of the rim. Make sure that the valve juts out the valve opening in the rim.



Push the tyre over the edge of the rim, starting behind the air valve. Inflate the tube slightly until it is round, and place it inside the tyre.



If the tube fits snugly inside the tyre without any folds (in the case of folds: let out some air), then the upper side of the tyre can be pressed lightly onto the rim with both hands, starting at the air valve.

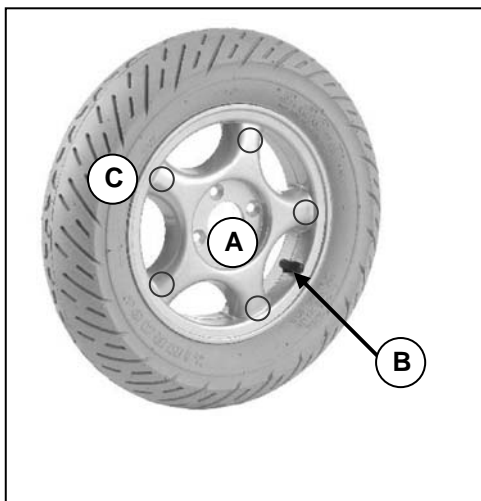
Check all around on both sides that the tube is not pinched between the rim and the edge of the tyre. Lightly push the air valve inwards and pull it out again to make sure that the tyre is positioned properly in the region of the air valve.

To ensure that the wheel is inflated correctly, admit only so much air initially that the tyre can still be easily pushed inwards by using your thumbs. If the check-lines are equidistant from the edge of the rim on both sides of the tyre, then the tyre is centered properly. If not - let out the air and position the tyre afresh. Now the tyre can be inflated to its full operating pressure (note the maximum) and the valve cap should be replaced.

When inflating the tyres, always check that the pressure is correct. The correct pressure is given on the tyre sides.

- **Driving wheels (rear wheels)**

⚠ WARNING: Risk of injury - Make sure all screws are firmly secured by hand before driving with your electric wheelchair. Screw adhesive (ex. Loctite) should be applied to the screws on the flange. Screw adhesive will only work if the thread is free of grease and particles.



DISMANTLING

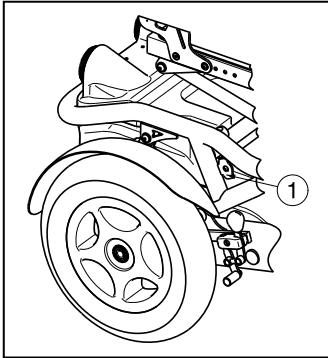
- Unscrew and remove the axle nut on the drive wheel and the 4 screws that attach the wheel to the flange.
- Let the air out of the wheel by lightly pressing the pressure pin on the valve.
- Unscrew the 5 screws on the inside of the rim. Separate the rim sides.

ASSEMBLY

Insert the partly-filled inner tube into the tyre.

- Connect the two sides of the rim through the tyres and screw them back again.
- Put the valve through the hole for it in the rim.
- Put the wheel back on the flange and secure the wheel by hand-tightening the axle nut. Inflate the wheel to the recommended tyre pressure.

3.6 Thermal fuse



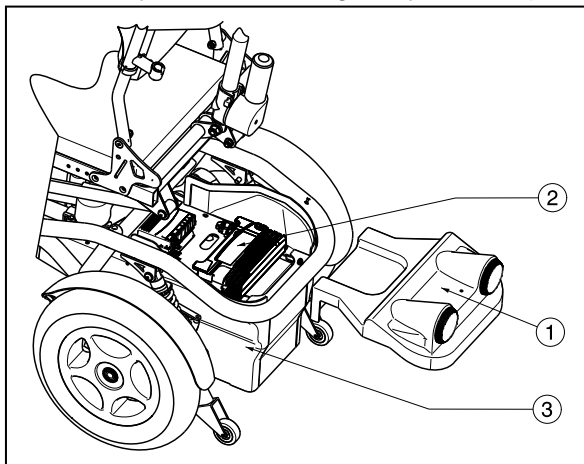
To protect the motor against overload, on the right side of the frame there is a thermal safety mechanism ① (transition to the rear frame) that will automatically cut off the motor to prevent overheating and thus rapid wear and tear or breakdowns. This can occur if you go up or down slopes that exceed the maximum gradient indicated. Nominal loads exceeding the maximum could also trigger the safety mechanism.

To be able to use the electric wheelchair again, remove the overload and wait till the motor has cooled down. Then gently press the thermal safety mechanism back in. Your wheelchair is now ready for use again.

3.7 Changing the battery

⚠ CAUTION: Risk of burns - Do not come in contact with the acid from the batteries. See for a good ventilation of the battery compartment.

The battery shall be changed by trained personnel.



The battery can be changed according following steps.

1. Remove the battery cover ① by loosen the velcro connections.
2. Disconnect all the wires on the batteries, power module.
3. Remove the power module ②.
4. Lift the batteries out of the battery housing ③.
5. Place the new batteries in the battery housing.
6. Connect all the wires to the batteries.
7. Replace the battery cover with the velcro connections.

4 Maintenance

For the maintenance / cleaning instructions refer to the separate maintenance manual of the electric wheelchairs. Refer for these separate manual to your specialist dealer.



SERVICE

The electric wheelchair was serviced:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

- For service checklists an additional technical information, please see our specialist dealers nearest to you. More information on our website at: www.vermeiren.com.

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