

VERMEIREN

Squod

INSTRUCTION MANUAL





Instructions to the specialist dealer

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

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Contents

1	Productdescription	3
1.1	Intended Use	3
1.2	Technical specifications.....	4
1.3	Components	6
1.4	Accessories	6
1.5	Explanation of symbols	6
1.6	Safety instructions	7
2	Use	8
2.1	Remarks on electromagnetic compatibility (EMC).....	8
2.2	Carrying the electric wheelchair.....	9
2.3	Assembly and disassembly of the electric wheelchair	9
2.4	Mounting or removing backrest	10
2.5	Mounting or removing batteries	11
2.6	Mounting or removing seat.....	12
2.7	Mounting or removing arm support.....	12
2.8	Mounting or removing the footrests	13
2.9	Operating the parking brakes.....	13
2.10	Transfer in and out the electric wheelchair.....	14
2.11	Correct position in the electric wheelchair	14
2.12	Driving the electric wheelchair.....	14
2.13	Operating the electromagnetic brakes	15
2.14	Driving the electric wheelchair on stairs	18
2.15	Driving the electric wheelchair on ramps.....	18
2.16	Pushing the wheelchair	19
2.17	Transport in the car	20
2.18	Transport in an airplane	20
2.19	Batteries	21
2.20	Battery charger.....	21
2.21	Charging the batteries	21
2.22	Backrest inclination	22
2.23	Thermal fuse	23
3	Installation and adjustment	23
3.1	Tools	23
3.2	Manner of delivery	23
3.3	Possible adjustments.....	24
3.4	Battery connections	26
3.5	Changing the batteries	26
3.6	Tyre changing	26
4	Maintenance	27



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 Productdescription

1.1 *Intended Use*

The electric wheelchair Squod is equipped with two motors, of 200W.

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

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

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

The different types of fittings and accessories, and the modular construction allow full use by persons 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 operate the wheelchair by himself or have the wheelchair pushed by an attendant with the handgrips.

When providing for individual requirements:

- body size and weight (max. 130 kg)
- 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 operate the wheelchair safely.

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 improper service or as a result of not following instructions from this manual.

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 accessories are used, the tabulated values will change. Changes in outdoor temperatures, humidity, uphill's, downhill's, soils and battery levels can reduce output.

Brand	Vermeiren		
Address	Vermeirenplein 1/15, B-2920 Kalmthout		
Type	Electric wheelchair, Class B		
Model	Squod		
Maximum occupant mass	130 kg		
Description	Dimensions		
Effective seat width	390 mm	440 mm	500 mm
Overall width (depends on the seat width)	600 mm	650 mm	710 mm
Continuous driving distance range*	Approx. 26 km	Approx. 30 km	
Batteries	2 x 12V --- AGM / 38 Ah / 20 hr	2 x 12V --- AGM / 75 Ah / 20 hr	
Battery charger	Exendis Impulse S (6A); IP21; Insulation class II		
Thermal fuse	30 AMP		
Driving motors	2 x 200W		
Control unit	Shark / Electromagnetic braking system		
Description	Dimensions Minimum	Dimensions Maximum	
Max. speed	6 km/h		
Overall length with footrest, anti-tipping	1070 mm		
Overall height (backrest included)	1015 mm		
Folded / dismantled length (without footrests, battery housing)	840 mm		
Folded / dismantled width	Not applicable		
Folded / dismantled height (back folded, without arm supports)	620 mm		
Total mass	Approx. 105,8 kg		
Mass of heaviest part (that can be dismantled or removed)	Frame: Approx. 62,75 kg without batteries Approx. 91,75 with batteries		
Masses of parts that can be dismantled or removed.	Arm support without joystick: 1,85 kg; Arm support with joystick: 3,05 kg; Footrests: 1,85 kg; Battery cover: 29 kg (Batteries: 27,15 kg); Backrest: 4,10 kg; Seat: 3,20 kg		
Static stability downhill	9°		
Static stability uphill	17°		
Static stability sideways	16°		
Dynamic stability	8°		
Maximum safe slope	6° / 10,5%		
Obstacle climbing	60 mm		
Ground clearance	60 mm		
Seat plane angle	0°	9°	
Effective seat depth	440 mm		
Thickness seat cushion	85 mm		
Seat surface height at front edge (with seat cushion)	600 mm		



Brand	Vermeiren		
Address	Vermeirenplein 1/15, B-2920 Kalmthout		
Type	Electric wheelchair, Class B		
Model	Squod		
Maximum occupant mass	130 kg		
Description	Dimensions Minimum	Dimensions Maximum	
Backrest angle	5°	35°	
Backrest height	510 mm		
Distance between footrest and seat	455 mm	515 mm	
Angle footplate	9,2 °		
Angle between footrest and footplate	100°		
Angle between seat and footrest	100°	109°	
Distance between armpad and seat	200 mm	250 mm	
Front location of armpad structure	480 mm		
Driving motors	2 x 200W		
Minimum turning diameter	Approx. 1400 mm		
Reversing width	Not applicable		
Diameter Rear wheels (number)	3.00-4 (2)		
Tyre pressure, rear wheels **	Max. 3,5 bar		
Diameter front wheels (number)	3.00-8 (2)		
Tyre pressure, front wheels **	Max. 3,5 bar		
Noise level	67,8 dB (A)		
Storage and use temperature	-20 °C to +40 °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> <p>**Since different tyres may be used, please note the correct operating pressure of the tyres you use. For other tyre diameters refer to your specialist dealer.</p>			

Table 1: Technical specifications

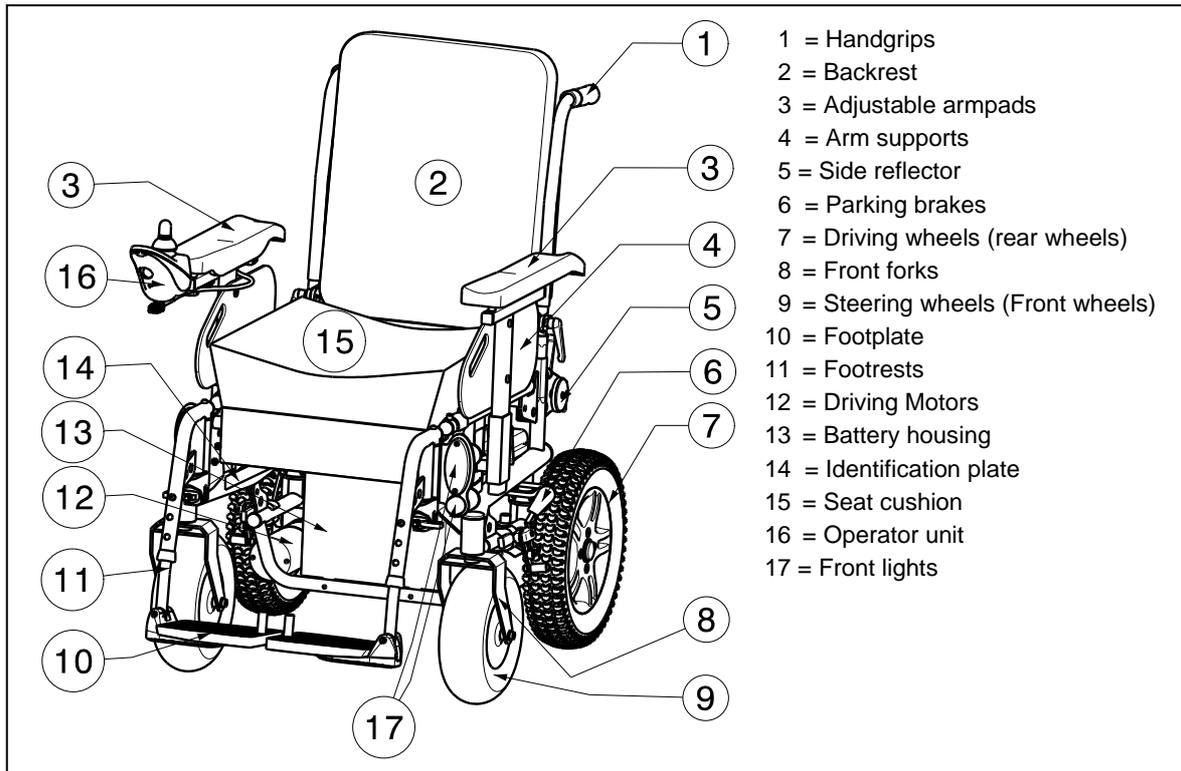
The wheelchair complies to the requirements set up in:

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

BS7175: Methods of test for the ignitability of bedcovers and pillows by smouldering and flaming ignition sources.

1.3 Components



1.4 Accessories

The following accessories are available for the electric wheelchair Squod:

- Table (B12)
- Pelots (side supports) for stability (L04)
- Headrest (L55, L58)
- Crutch holder (B31)
- Leg support (BZ7, BZ8)

1.5 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
km/h

-  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
-  Not intended to be used as a seat in a Motor vehicle
-  TYPE Type designation

1.6 Safety instructions

-  To prevent injury and/or damage to your wheelchair, make sure that no objects and/or body parts are caught in the rims of the driving wheels.
-  Follow the instructions for using your wheelchair. For example, avoid driving without brakes against an obstacle (step, edge of the curb) or dropping down from steps.
-  When getting into and out of the wheelchair, do not stand on the footplates. The footplates 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.
-  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 in public places, you are subject to local regulations.
-  Influence of medicine or alcohol reduces your driving capabilities.
-  When travelling outdoors, adapt your driving to weather and traffic conditions.
-  Do not use your electric wheelchair in rainy conditions.
-  Do not put your electric wheelchair into the neutral 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, arm supports, footrests, 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.
- ⚠ Never exceed the maximum load of 130 kg.
- ⚠ Use only Vermeiren approved accessories.
- ⚠ Before getting on or off, taking apart or transporting your electric wheelchair, put your wheelchair off with "ON/OFF" button.
- ⚠ 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*).
- ⚠ Stairs may only be negotiated by an attendant. If devices and furnishings like ramps or lifts are available, use them.
- ⚠ Risk of injury in case of a sudden stop - Always use the safety belt.

2 Use

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

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.

The electric wheelchair is delivered fully assembled by your specialist dealer. The instructions intended for the specialist dealer for adjusting the electric wheelchair are given in § 3.

2.1 Remarks on electromagnetic compatibility (EMC)

Your electric wheelchair has been tested according EN 12184: 1999 Section 9.8 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 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 with the handgrips to the desired place.

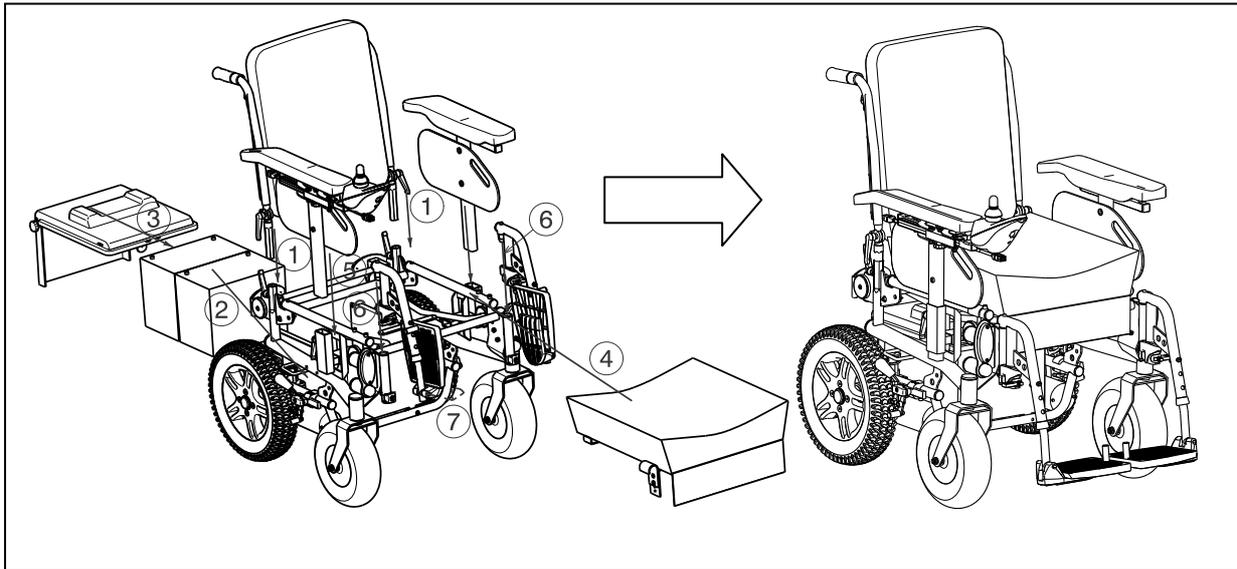
When the wheelchair must be taken up or down stairs, do this with the wheelchair ramps or lift systems. At least two persons are required to move the wheelchair up or down stairs or over single steps.

Another way to carry the electric wheelchair is to dismantle the electric wheelchair. Carry the separate parts (frame, arm supports, footrests, batteries, backrest, seat) to the desired place. Grasp the wheelchair only on fixed frame parts (never by the footrests, arm supports and wheels).

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.

2.3.1 Assembly of the electric wheelchair



To assemble the electric wheelchair:

1. Mount the backrest (paragraph 2.4).
2. Place the batteries on the lower frame (paragraph 2.5).
3. Place the battery cover on the batteries (paragraph 2.5).
4. Mount the seat to the seat frame (paragraph 2.6)
5. Mount the arm supports (paragraph 2.7).
6. Mount the footrests (paragraph 2.8).
7. Fold the footplates of the footrests down.

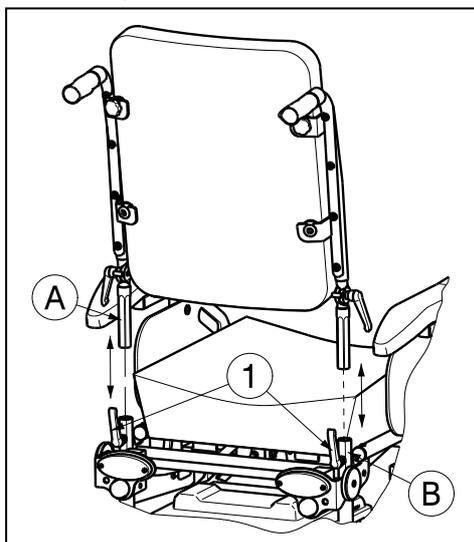
To disassembly the electric wheelchair do the reverse of the above instructions.

2.4 Mounting or removing backrest

⚠ WARNING: Risk of injury – Make sure that both securing levers ① are engaged.

⚠ CAUTION: Chance of pinching – Do not place fingers between the backrest tubes of the wheelchair.

For transport the backrest of the wheelchair can be completely removed and put on the seat.



To mount the backrest on the electric wheelchair:

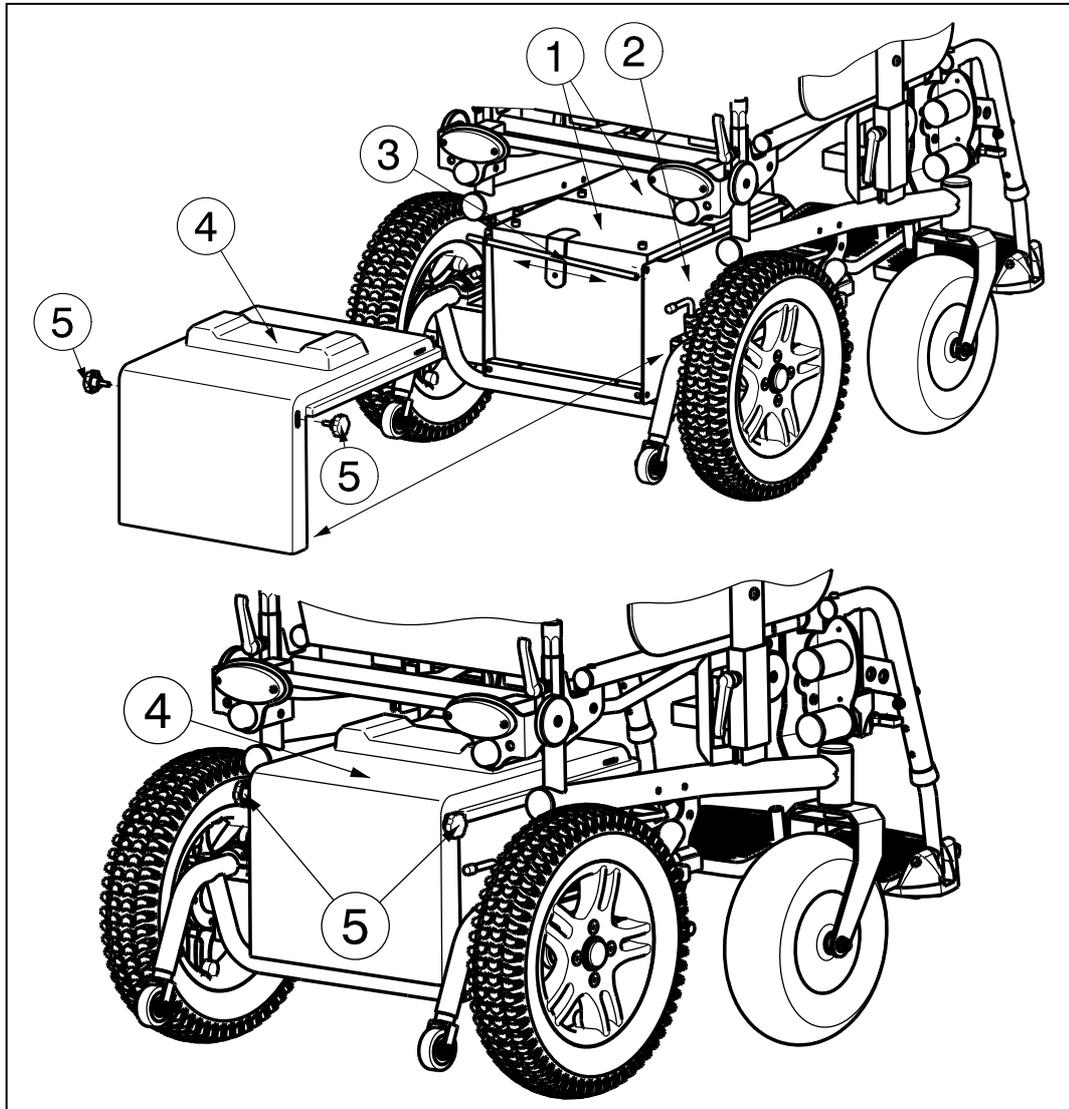
1. Check that the levers ① are not fixated otherwise loosen the levers ①.
2. Mount the backrest tubes ① in the hexagonal tubes of the frame ②.
3. Retighten the levers ① properly.

To remove the backrest from the electric wheelchair:

1. Turn on the levers ① until they come loose.
2. Remove the backrest tubes ① out the hexagonal tubes of the frame ②.
3. Put the backrest on the seat for transportation.

2.5 Mounting or removing batteries

⚠ CAUTION: Chance of pinching – Do not place fingers between the batteries and the battery housing.



To mount the batteries in the electric wheelchair:

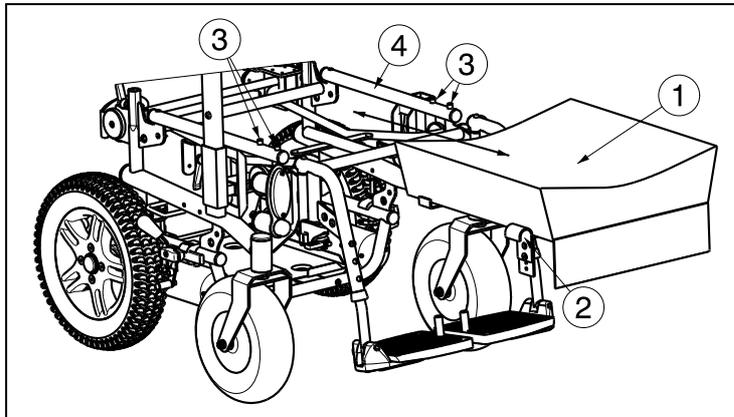
1. Batteries are located on the back side of the wheelchair.
2. Place the batteries ① on the battery housing of the wheelchair ②.
3. Connect the cables from the electronic.
4. Mount the bar ③ in the two holes of the battery housing ②.
5. Place the battery cover ④ on the battery housing, by placing the two holes of the battery cover over the bar ③.
6. Screw the star buttons ⑤ in the holes of the battery cover ④ on each side.
7. Check that the battery housing is firmly attached.
8. Mount the seat.

To remove the batteries of the electric wheelchair:

1. Remove the seat.
2. Loosen the star buttons ⑤.
3. Remove the battery cover ④ from the battery housing ②.
4. Remove the bar ③ out the two holes of the battery housing ②.
5. Disconnect the cables from the electronic.
6. Lift the batteries ① out the battery housing ②.

2.6 Mounting or removing seat

⚠ WARNING: Risk of injury - Make sure that the seat ① is properly attached before using the wheelchair.



To mount the seat ① to the electric wheelchair:

1. Place the seat hooks ② between the two bushings ③, on each side.
2. Push the seat ① on the backside downwards.

To remove the seat from the electric wheelchair:

1. Pull the front side of the seat ① upwards, until the seat hooks ② come out the two bushings ③.
2. Slide the seat ① to the front.
3. Lift the seat ① out the seat frame.

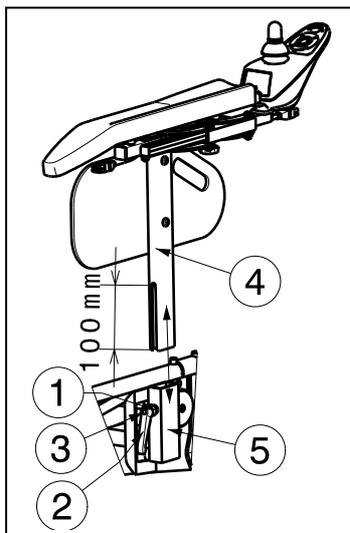
2.7 Mounting or removing arm support

⚠ WARNING: Risk of injury and/or damage - Make sure that the levers ① are properly tightened before using the wheelchair.

⚠ WARNING: Risk of tipping over - Check that the armpads are at the same height on each side.

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

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:

3. Mount the arm support ④ in the rectangular tube ⑤.
4. 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 a good position that no risk of injury to the hands can appear.)

To remove the arm supports from the electric wheelchair:

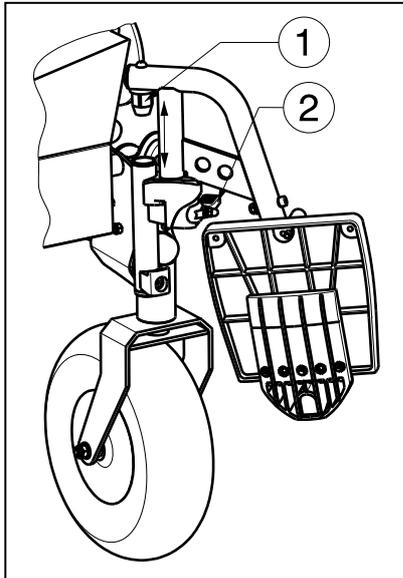
4. Turn on the handle ① until it come loose. (If the lever of handle ② is not in a good position, press on button ③ on the handle and place the lever ② in a good position that no risk of injury to the hands can appear.)
5. Remove the arm support ④ out the rectangular tube ⑤.

The armpads are adjustable in different heights over a range of 90 mm (stepless) Keep a safe distance from 10 mm on the bottom of the arm support.

1. Loosen the lever ① a little.
2. Move the rectangular tubes ④ and ⑤ over each other until the desired armpad height.
3. Retighten the lever ① hand-tightened.
4. Check that the lever ① is securely attached.
5. Adjust the other armpad with the same instructions.

2.8 Mounting or removing the footrests

⚠ CAUTION: Risk of injury – Make sure that the footrests are firmly attached.



The mounting of the footrests is done as follows:

1. Hold the footrest sideways at the outside of the wheelchair frame and mount the tube hood ① into the frame.
2. Swing the footrest inwards till it clicks in position.
3. Swing the footplate downwards.
4. Check that the footrest is well fixated.

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 from tube hood ①.

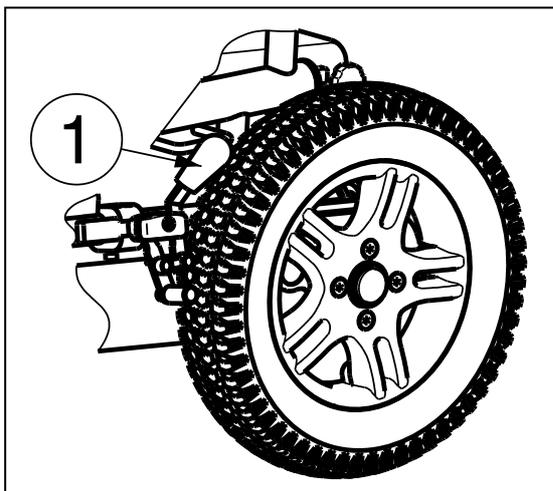
2.9 Operating the parking brakes

For each drive wheel your electric wheelchair has standard parking brakes.

⚠ 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 levers ① forward till you feel a distinctive click.

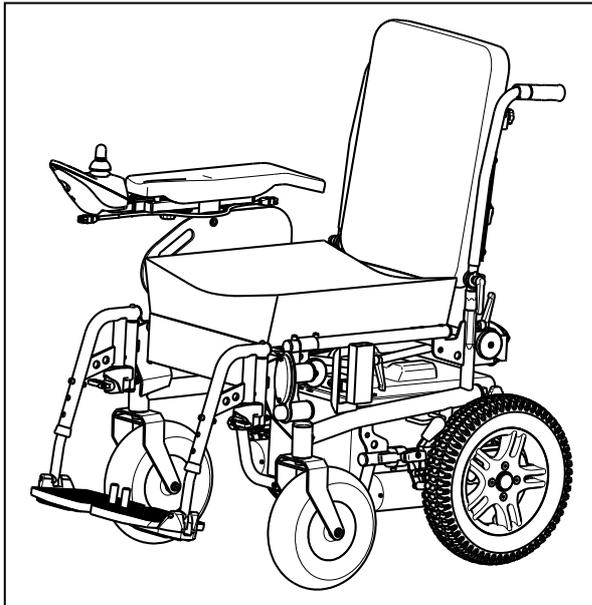
⚠ CAUTION: Risk of unintended movement – Make sure the wheelchair is on a flat horizontal surface before releasing the brakes. Never release both brakes simultaneously.

To release the brakes:

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

2.10 Transfer in and out the electric wheelchair

- ⚠ **WARNING:** Power down the wheelchair before getting in or out the 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 unit is switched off. Make sure that the wheelchair is NOT in freewheel mode.
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, 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 start using your electric wheelchair, make sure that it is standing on level ground. All wheels must be in contact with the ground.

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

Now put the speed control on the operator unit 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 unit, the display of the operator unit goes out.

2.13 Operating the electromagnetic brakes

Let go of the joystick to stop the electric wheelchair.

2.13.1 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.

2.13.2 Operator units

* Shark controller

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

Changing the software is only allowed by Vermeiren. For changes in the software contact Vermeiren.

2.13.3 Adjusting operator unit

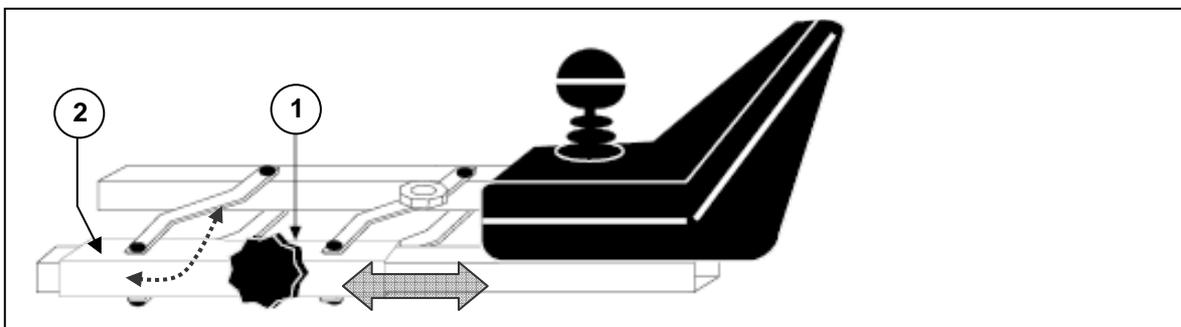
⚠ CAUTION: Risk of pinching - Do not put your fingers between the operator control and the other parts when positioning the operator unit.

The operator units horizontal position can be changed:

1. Loosen screw ① just under the arm pads a little bit.
2. Move the operator unit to the desired position or remove the operator unit.
3. Retighten screw ① properly.

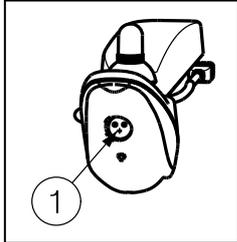
If you pull screw ① to the side, the operator unit can be turned to the side.

NOTE: Depending on the features of your wheelchair, screw ① could also be located beneath the guide tube ②.



2.13.4 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 ① for connecting the charger supplied is located on the front of the operator 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).

Make sure that the joystick is in the neutral (central) position when pressing the on/off button, otherwise the electronics will be blocked. This block can be lifted by switching the control unit off and then on again.

2.13.5 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 started it 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, back of wheelchair will run into obstacles and destabilize your electric wheelchair.



2.13.6 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.

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

Left and right controls act inverse when driving backwards.

2.13.7 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 freewheel on slopes.
- ⚠ **WARNING:** Control your speed - Move on slopes as slow as possible.
- ⚠ **WARNING:** Risk of tipping over - Do not exceed the maximum gradient of static and dynamic 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.

2.13.8 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 slopes.
- ⚠ **WARNING:** Control your speed - Move on 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 and dynamic 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).

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

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.

2.14 Driving the electric wheelchair on stairs

- ⚠ **WARNING:** Risk of injury - Sit quietly in your wheelchair and avoid jerky movements. If you cannot sit quietly when being transported because of illness or disability (e.g. slightly spastic, etc.), then at least two persons are required to secure the wheelchair on both sides by taking hold of fixed parts of the frame.
- ⚠ **WARNING:** Risk of injury – Wear suitable safety belt systems while being transported (information obtainable from your specialist dealer).
- ⚠ **WARNING:** Risk of injury – Make sure that your arms and legs do not protrude outside the wheelchair while being driving on stairs.

If you want to be taken up or down stairs with the wheelchair, you will need a wheelchair ramps or wheelchair liftsystems.

2.15 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 to prevent injury or damage.
- ⚠ **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, backrest, footrests, ...) so 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 backrest is in the upright position.
3. The footrests 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.

2.16 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.

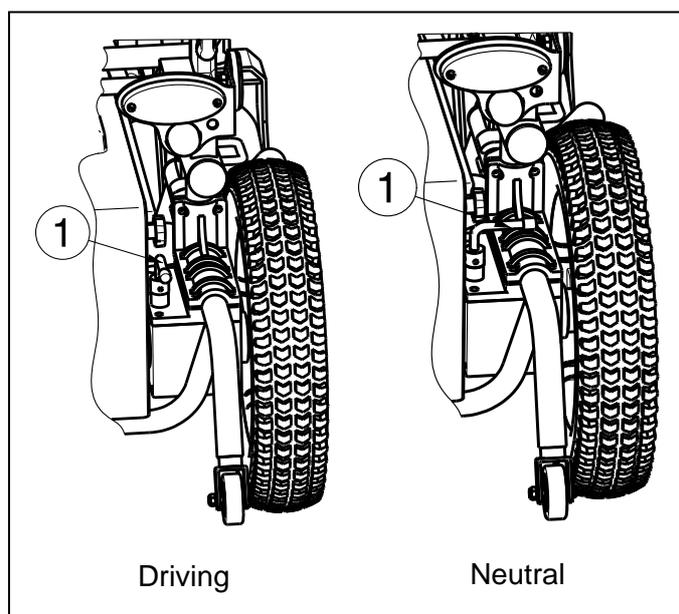
The wheelchair is fitted with a freewheel device that is accessible and operable only by the attendant.

2.16.1 200W motors - 6km/h

Put the chair in neutral with the adjusting levers ① on both motors. These levers are located on the back of the electric wheelchair.

Clutch or declutch the motor by following the instructions below:

-  **DRIVING**
Pull the adjusting levers ① of both motors in the driving position. Loosen the parking brakes. Switch the operator unit out and in. Electronically controlled driving is now possible.
-  **NEUTRAL**
Push the adjusting levers ① of both motors in the neutral position and you will activate the wheelchair's free-running mode. The wheelchair can now be pushed without electronic drive.
-  In free wheel mode, the electronic brake is deactivated and the wheelchair will no longer be held back. Do not activate free wheel mode on slopes.



- ⚠ 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.

2.17 Transport in the car

- ⚠ **DANGER:** Risk of injury – The wheelchair is not suited for use as a seat in a motor vehicle.
- ⚠ **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. Make sure that they are only attached to solid parts of the frame.
- ⚠ **WARNING:** Risk of injury- Use for attaching the wheelchair and passenger **NEVER** the same seatbelt.

Never use your wheelchair as a seat in an automobile or other vehicle. The wheelchair shall be marked with following symbol.



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, arm supports, 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 frames.
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 unit is switched off.

2.18 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 cargo room.

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 insulate 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 most forward).
- Fold the footplates upwards, place the armsupports in the most inward position.
- Check that the adjustment levers shall positioned inwards.
- Cover the operator unit with a soft material that can withstand shocks.

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

2.19 Batteries

The standard for your electric wheelchair are two closed AGM batteries, 12 V/38 Ah: seat width 390 mm and 12V/75Ah: for other seat widths. 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).

Use only the original batteries. We do not accept any liability for damages resulting from use of other batteries.

2.20 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.

2.21 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 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 operator 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 unit. 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 unit. The charger switches back to STAND-BY mode (yellow and green LEDs active).

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

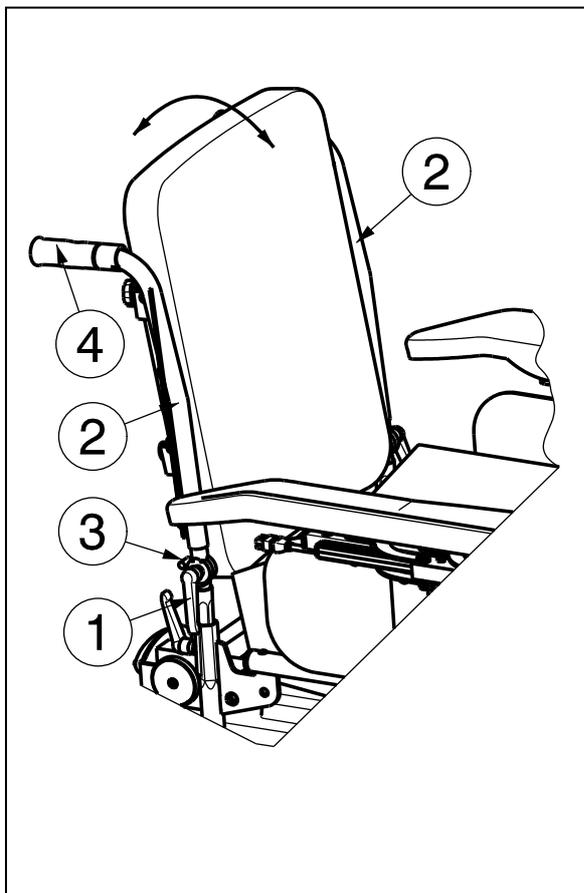
If you decide not to use your electric wheelchair for an appreciable period, you must nevertheless recharge it regularly to keep it in a running condition ready for immediate use.

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

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

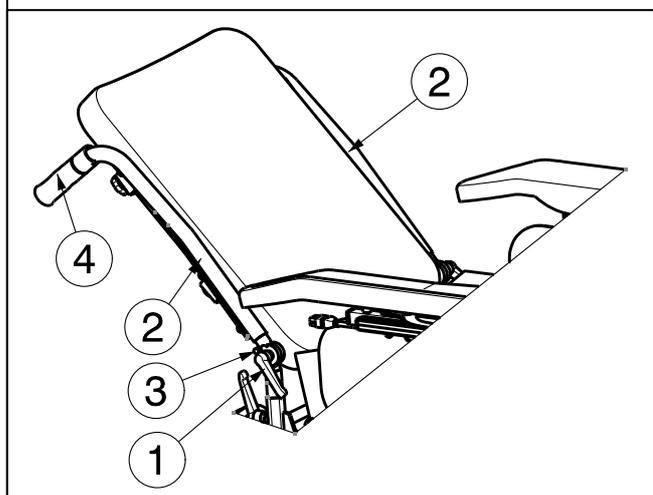
2.22 Backrest inclination

- ⚠ **CAUTION:** Risk of injury - Tighten the parking brakes, if available before adjusting the backrest.
- ⚠ **CAUTION:** Risk of tipping over - Be aware that the stability decrease when you adjust the backrest backwards.
- ⚠ **CAUTION:** Risk of tipping over - Place the backrest in the most vertical position when driving the wheelchair on ramps. Now the wheelchair has the best backwards stability.

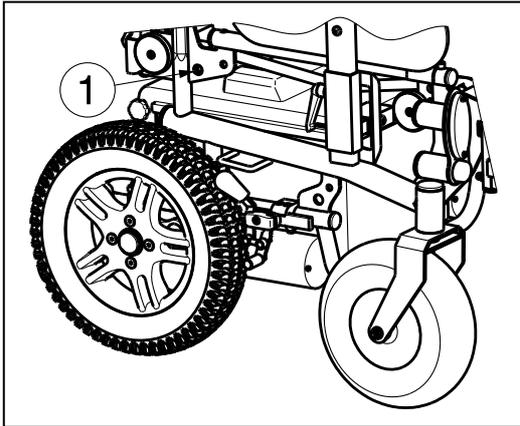


The inclination of the backrest from the electric wheelchair is over a range from -90° to $+35^{\circ}$ (steps from 11°).

1. Turn on the levers ① until they come loose.
2. Grasp the handgrips ④.
3. Push or pull the backrest tubes ② to the front or backwards to the desired inclination. Max inclination is that the backrest tubes ② rest on the pens ③.
4. Retighten the levers ① properly by hand.



2.23 Thermal fuse



To protect the motor against overload, on the right side of the wheelchair frame, there is a thermal safety mechanism ① 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 Installation and adjustment

The instructions in this chapter are for the specialist dealer only.

The Squod has been designed as a rear wheel drive electric wheelchair.

- ⚠ 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

To set up the wheelchair the following tools are needed.

- Wrench set n°8 to n°19
- Allen keyset n°3 to n°6
- Screwdriver Phillips head

3.2 Manner of delivery

The electric wheelchair shall be delivered with:

- Framework with arm supports, rear and front wheels, seat and backrest
- 1 pair of footrests
- 2 x drive batteries + battery housing, 2 x drive motors
- Impulse S charger (6A) + manual of Impulse S charger
- Tools
- Operator unit + manual operator unit
- Accessories

Before use, check that everything is included and that no products are damaged (example by transport, ...). Please note that the basic configuration may differ in different European countries. Contact your specialist dealer.

3.3 Possible adjustments

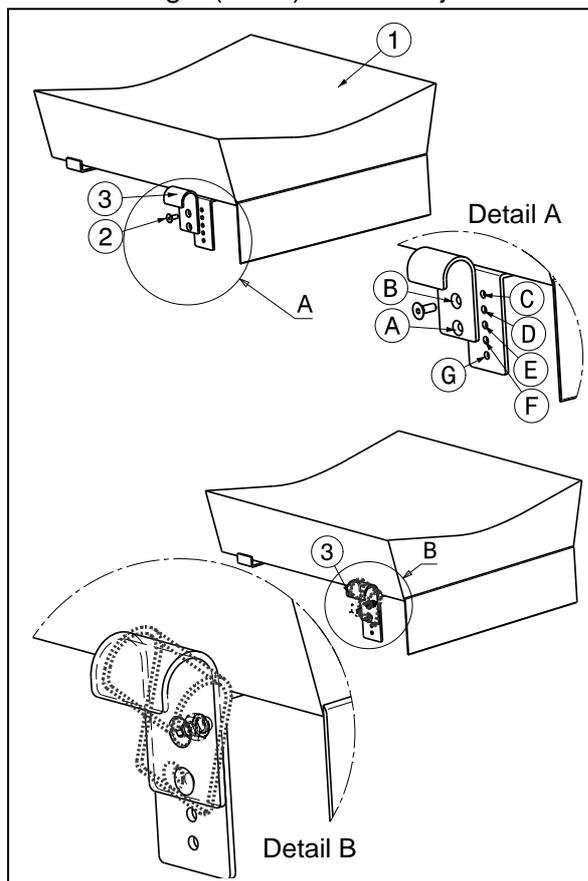
- ⚠ **WARNING:** Risk of injury - Turn the electric wheelchair off before you perform any adjustments.
- ⚠ **WARNING:** Risk of injury - Never perform any adjustments while you are driving.
- ⚠ **WARNING:** Risk of injury - Adjustments may only performed by your specialist dealer.
- ⚠ **WARNING:** Risk of injury - Make sure all screws, levers are firmly secured before driving with your electric wheelchair.
- ⚠ **CAUTION:** Risk of clamping – Keep fingers, buckles and clothes away from the attachment points or any moving parts.

3.3.1 Adjusting seat angle

- ⚠ **WARNING:** Risk of injury - Check that the seat attachment is between the bushings.

- ⚠ **WARNING:** Risk of injury - Check that the seat is firmly attached.

The seat angle (0°- 9°) can be adjusted according following steps:



1. Remove the seat ① from the seat frame.
2. Remove the screw ② from the seat hook ③.
3. Place the seat hooks ③ on both sides in the desired position (refer table 2 and detail A).

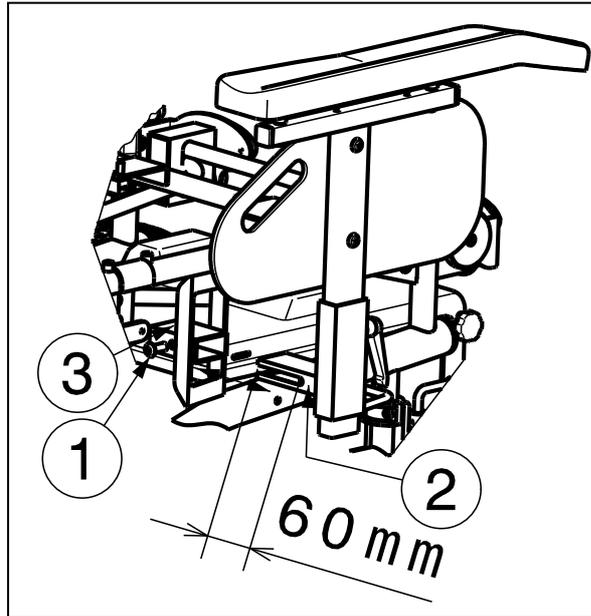
	Hole ①		Hole ②
0°	Hole ③	2,6°	Hole ③
1,6°	Hole ④	4,2°	Hole ④
3,2°	Hole ⑤	5,8°	Hole ⑤
4,8°	Hole ⑥	7,4°	Hole ⑥
6,4°	Hole ⑦	9°	Hole ⑦

Table 2: Seat angles

4. To fit the seat hooks ③ on the tubes from the seat frame, you can rotate these around the screw (see detail B).

3.3.2 Adjusting the arm supports

The width of the arm supports can be adjusted in horizontal direction.



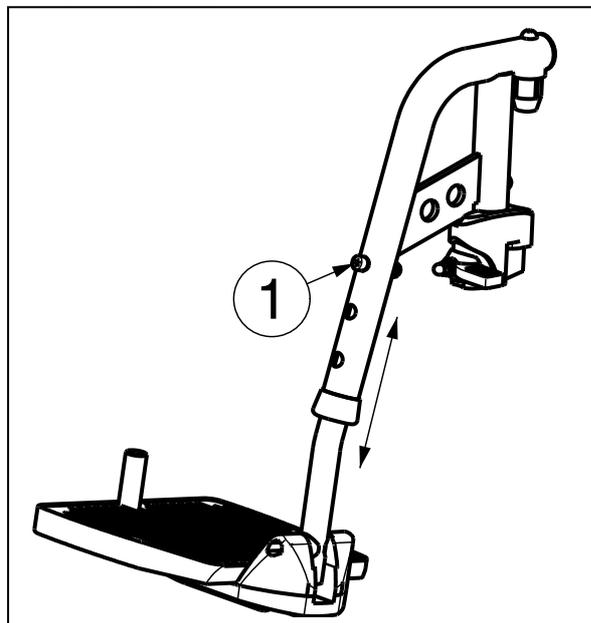
1. Loosen the hexagon socket set screws ① just under the seat frame.
2. Move the arm support in an horizontal direction until the correct position, by moving the rectangular tubes ② and ③ over each other. (Range 60 mm: step less)
3. Retighten the screws ① properly.
4. Repeat instructions above for the other arm support.

Check that the arm supports are positioned identically on both sides.

3.3.3 Adjusting the footrests

⚠ CAUTION: Risk of damage – Avoid that the footrests make any contact with the ground. Keep a minimum distance from 60 mm above the ground.

* Adjusting length:



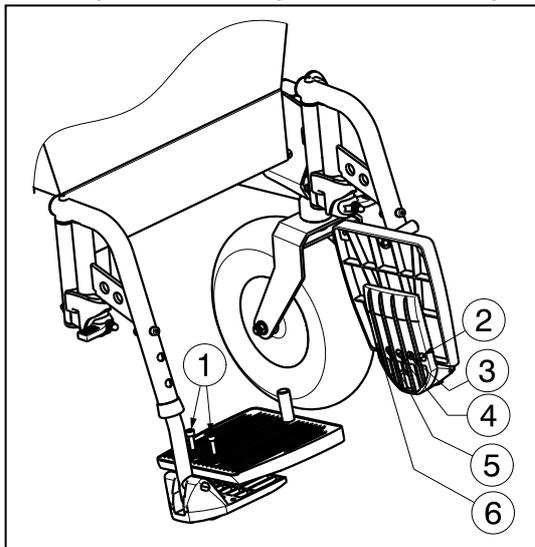
Adjust the length of the footrests as follow:

1. Loosen the screw ①.
2. Adjust the length of the footrest to a comfortable length.
(3 positions possible: steps 35 mm → holes outside tube, 3 positions possible: steps 25 mm → inner tube)
3. Tighten the screw ① properly.

Check that the footrests are positioned identically on both sides.

*** Adjusting depth of the footplates:**

The depth of the footplates can be adjusted according following instructions:



1. Loosen the two screws ① above the footplate.
2. Move the footplate backwards or forwards until the desired depth. (3 positions possible: steps 20 mm)
Position 1: hole 2 and 4
Position 2: hole 3 and 5
Position 3: hole 4 and 6
3. Retighten the screws ① properly.

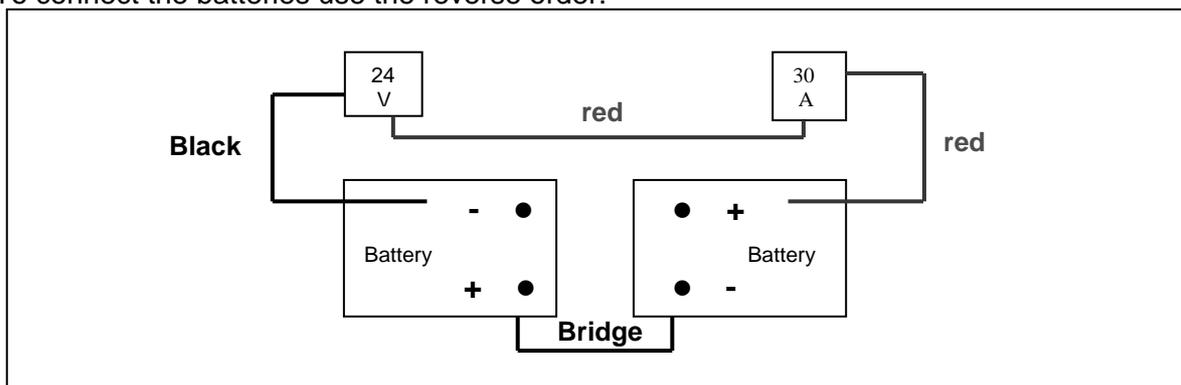
3.4 Battery connections

- ⚠ **CAUTION: Risk of injury - Check that no tools or other conductive objects come between the batteries poles, to avoid unintentionally current flows.**
- ⚠ **CAUTION: Risk of injury, damages - Do not work in a humid environment with batteries and electronics.**

The best way to disconnect the batteries:

1. Disconnect the main negative pole (-).
2. Disconnect the positive pole (+).
3. Disconnect the bridge.

To connect the batteries use the reverse order.



3.5 Changing the batteries

- ⚠ **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 batteries shall be changed by trained personnel. Refer to paragraph 2.5 for mounting and removing batteries.

3.6 Tyre changing

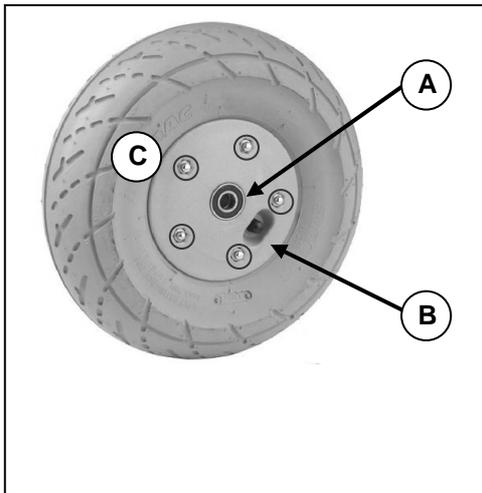
- ⚠ **CAUTION: There must be no air in the tube before the tyre can be removed.**
- ⚠ **CAUTION: Risk of damage - If handled improperly, the rim might become damaged.**

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.

- ⚠ WARNING: Risk of injury - Check that the pressure is correct.**
- ⚠ 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)**



DISMANTLING

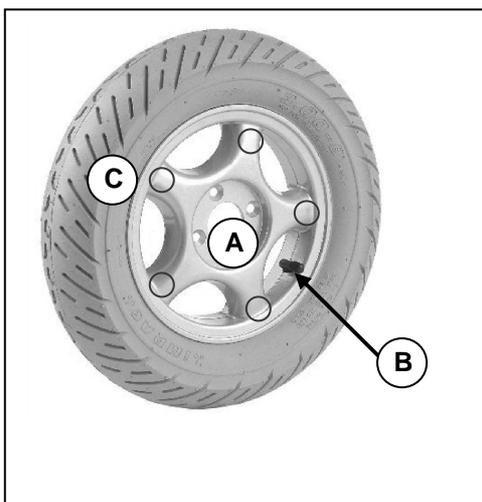
- A. Loosen the screw on the steering wheel axle and remove it from the steering wheel fork.
- B. Let the air out of the steering wheel by lightly pressing the pressure pin on the valve.
- C. Loosen the 5 screws that hold the split rim together. Now separate the rim sides.

ASSEMBLY

- Insert the partly-filled inner tube into the tyre.
- C. Connect the two sides of the rim through the tyres and use the 5 connecting screws to screw the rim together.
 - B. Make sure that the valve juts out of the valve opening in the rim.
 - A. Put the wheel back into the front wheel fork and inflate the wheel.

- **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

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

ASSEMBLY

- Insert the partly-filled inner tube into the tyre.
- C. Connect the two sides of the rim through the tyres and screw them back again.
 - B. Put the valve through the hole for it in the rim.
 - A. 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.

4 Maintenance

For the maintenance manual of the electric wheelchairs refer to the Vermeiren website: www.vermeiren.be.



SERVICE

The electric wheelchair was serviced:

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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