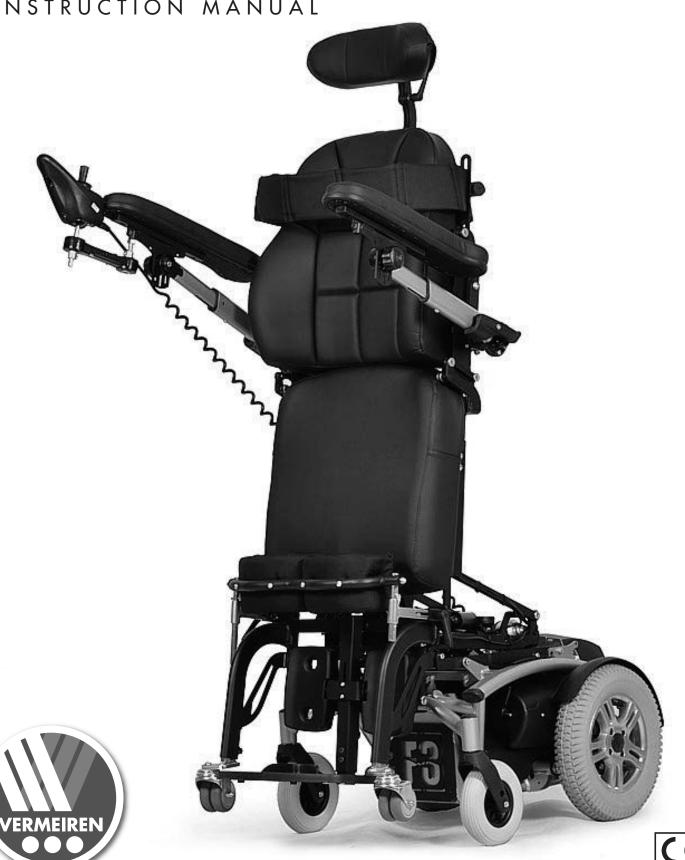
# VERMEIREN

# Forest 3 SU

INSTRUCTION MANUAL





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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 Forest 3 SU is equipped with two motors, of 220W or 350W.

The electric wheelchair Forest 3 SU is intended to comfortably transfer persons with walking difficulties or no walking abilities. This electric wheelchair is designed to transfer 1 person.

The electric wheelchair is designed to transfer 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 insuffiencies and poor blood circulation
- balance disturbances
- cachexia (decrease in muscle)

The electric wheelchair is classified as class B.

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

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 used to transport 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.



**For Germany:** You may not drive at above 6 km/h on public highways. By the 6 km/h limited versions of Forest 3 SU, you do not require a driving licence and neither is vehicle insurance necessary. However, we recommend that you take out voluntary third-party insurance. However, for the 10 km/h and 14km/h versions you must have an insurance.

The electronics must be switched off immediately after use of the wheelchair. Use only the supplied battery charger and no other charging equipment. We wish to point out that electromagnetic sources (e.g. mobile phones, etc.) can cause interference and that the wheelchair's electronics can also affect other electric appliances.

The lighting (as option) is according STVZO (German traffic law).

The electric wheelchair is suitable for re-use. Take following measures for the re-use of the wheelchair: Clean the cushions, adjust the wheelchair most comfortably for the new user, perform the necessary maintenance, inspection instructions (refer to the separate maintenance manual).

No complications are known for the wheelchair.

# 1.2 Technical specifications

Technical terms below are valid for the electric wheelchair in standard settings without seat cushion 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.

leveis can reduce output.						
Brand	Vermeiren					
Address	Vermeirenplein 1/15, B-2920 Kalmthout					
Туре	Electric wheelchair, Class B		CE			
Model	Forest 3 SU					
Maximum occupant mass	130 kg					
Description	Dime	ensions				
Effective seat width	450	0 mm				
Overall width (depends on the width of the armrests: minimum)	670	0 mm				
Description	Dimensions Minimum	Dimension	s Maximum			
Max. speed (limited in standing position)	6 km/h	10 km/h	14 km/h			
Continuous driving distance range*	Approx. 30 km (50Ah) Approx. 50 km (80Ah)	Approx. 42 km (80Ah)	Approx. 37 km (80Ah)			
Overall length (with footplate lowered, not folded up)	1170 mm					
Overall height (sitting position)	1100 mm					
Overall height (standing position)	1575 mm					
Folded / dismantled length (footrests removed)	ootrests Not applicable					
Folded / dismantled width	ed width Not applicable					
Folded / dismantled height	Not applicable					
Total mass	165	,00 kg				
Mass of heaviest part (that can be dismantled or removed)	Not applicable					
Masses of parts that can be dismantled or removed	antled or Not applicable					
Maximum safe slope	9°					
Obstacle climbing	100 mm					
Ground clearance	74 mm					
Seat plane angle	3,5° -84,5°					



Brand	Vermeiren			
Address				
Туре	Vermeirenplein 1/15, B-2920 Kalmthout Electric wheelchair, Class B			
Model	Forest 3 SU			
Maximum occupant mass	130 kg			
Description	Dimensions Minimum	Dimensions Maximum		
Effective seat depth	450 mm	500 mm		
Thickness seat cushion	70	mm		
Seat surface height at front edge (without seat cushion)	530	) mm		
Backrest angle	11°	84°		
Backrest height	610	) mm		
Distance between footplate and seat	365 mm	465 mm		
Angle between seat and leg footplate	0°	96,5°		
Angle between footplate and leg footplate	9	00°		
Distance between armpad and seat	242 mm	350 mm		
Front location of armrest structure	508 mm	557 mm		
Armrest Angle	11°	26° / 101° (folded away)		
Height legrests to top of seat (measured in the middle of the cushion)	155 mm	210 mm		
Height footplate to knee support (measured in the middle of the cushion; length footplate minimum position)	400 mm	460 mm		
Depth knee support and legrests	60 mm 120 mm			
Driving motors	2 x 220W + 2 x 350W + electromagnetic braking system (6km/h) electromagnetic braking s			
Batteries	2 x 12V AGM /	50 or 80 Ah / 20 hr		
Battery charger	Exendis Impulse S (6A or	8A); IP21; Insulation class II		
Blow fuse	150 AMP			
Degree of protection	IPX4			
Minimum turning diameter	Approx. 1320 mm			
Reversing width	1200 mm			
Diameter Rear wheels (number)	Racing: 350 x 70 mm air (2) Block profile: 342 x 70 mm air (2)			
Tyre pressure, rear wheels **	Max. 3,5 bar			
Diameter front wheels (number)	260 x 85 mm air (2); 230 x 65 mm air (2); 200 x 50 mm air (2)			
Tyre pressure, front wheels **	Max. 3,5 bar			
Noise level	el < 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%			
We reserve the right to introduce	tooknieel ekonges Messureme	nt toloronos · 15 mm / 1 5 kg / 9		

We reserve the right to introduce technical changes. Measurement tolerance  $\pm$  15 mm / 1,5 kg /  $^{\circ}$ .

Table 1: Technical specifications

<sup>\*</sup> The theoretical driving distance will be reduced if the wheelchair is used frequently on slopes, rough ground or to climb curbs.

<sup>\*\*</sup>Since different tyres may be used, please note the correct operating pressure of the tyres you use.



The wheelchair complies to the requirements set up in:

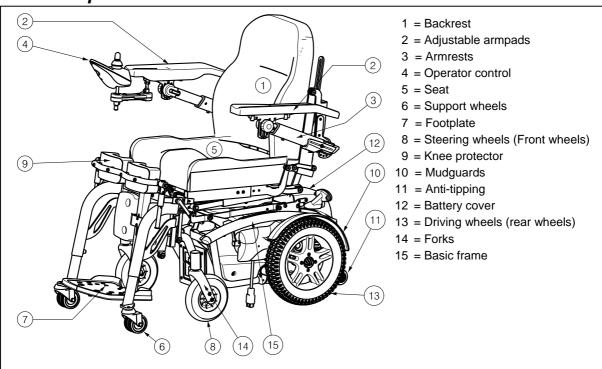
ISO 7176-8: Requirements and test methods for static, impact and fatigue strengths

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

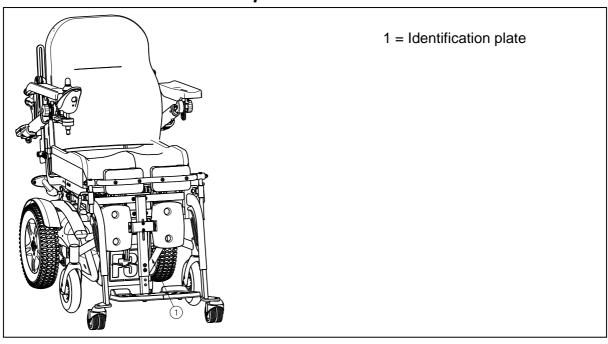
ISO 7176-21: Wheelchairs - Part 21: Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and motorized scooters.

ISO 7176-16: Wheelchairs - Part 16: Resistance to ignition of upholstered parts -- Requirements and test methods

# 1.3 Components



# 1.4 Location identification plate





#### 1.5 Accessories

The following accessories are available for the electric wheelchair Forest 3 SU:

- Table (B15+B13)
- Lighting
- Side supports

To see all options for this electric wheelchair check our website: www.vermeiren.be.

# 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



Not intended to be used as a seat in a Motor vehicle



Type designation

# 1.7 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.
- 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.
- Mhen 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 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 lighting on.
- ⚠ Make sure that the lights and reflectors of your electric wheelchair are free from dirt and/or other objects that could hide them.
- ⚠ Be careful when using sources of fire such as cigarettes, since they can set the seat and back covers alight.
- ⚠ 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.
- A High levels of humidity or very cold conditions can reduce the performance of your electric wheelchair.
- Never exceed the maximum load.
- Use only Vermeiren approved accessories.
- ⚠ Before getting on or off, taking apart or transporting your electric wheelchair, put your wheelchair off with the "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).
- ⚠ If devices and furnishings like ramps or lifts are available, use them.
- A Risk of injury in case of a sudden stop Always use the safety belt.
- The standing / upright function should only be used if the chest belt and leg/knee protector are properly attached and deployed.
- ⚠ Only carry out the standing / upright function under supervision from another person, as the risk of tipping increases when weight shifts in the wheelchair.
- ⚠ Driving should only take place in the seated position. The drive program should not be used during the standing / upright function. Reduced drive should be deployed only for altering position during the standing / upright function.

# 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 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 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:

- MARNING: 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).
- MARNING: 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

Before moving the wheelchair, the seat/back unit should be moved to the seated position. The best way to carry the electric wheelchair is to drive the electric wheelchair with the operator control to the desired place. If not possible you can 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. Never grasp the wheelchair by the legrest in order to move it. Only grasp the fixed parts of the frame.

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.

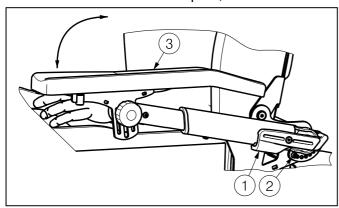
The wheelchair cannot dismounted. To carry the complete wheelchair is to heavy.

# 2.3 Adjusting armrest

- MARNING: Risk of injury and/or damage Make sure that the star knobs ①, levers ② are properly tightened before using the wheelchair.
- **⚠ WARNING:** Risk of tipping over Check that the armrests are placed in the same position on each side.
- ▲ CAUTION: Risk of clamping Keep fingers, buckles and clothes away from the attachment points of the armrest.

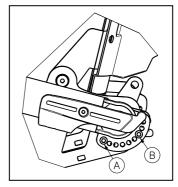
# 2.3.1 Height and angle adjustment armrest

The armrest can be adjusted in height over a range of 100 mm: steps from 50 mm. The armrests can be swing away so the patient can be moved sideways, for therapeutic purposes and to move the patient from the wheelchair. It is also possible to adjust the angle of the armrest 11° to 26°: steps 7,5°.



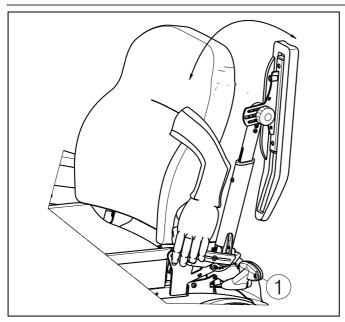
To swing away the armrest:

- 1. Push the lever ① downwards.
- 2. The armrest cannot completely fall down, it stop on the screw ②. The minimum ③ and maximum ⑤ position can be adjusted by moving the screws in the other holes.



3. Push lightly below the armpad ③ to swing the armrest completely away.





- 4. Grasp the lever ①.
- 5. Pull the armrest gently down with the lever ①.
- 6. Pull the lever ① upwards to secure the armrest again.

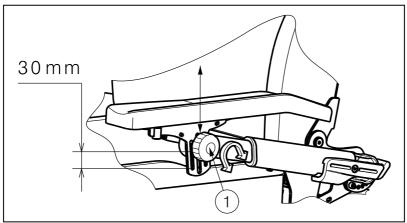
#### To adjust the armrest:

- 1. Push the lever ① downwards.
- 2. Pull / push lightly on the armrest to place the armrest in the desired height and/or angle.
- 3. Retighten the lever ①.

# 2.3.2 Height and angle adjustment armpad

The armpads can be adjusted in height over a range of 30 mm: stepless (for fine tuning) and angle over a range of 360 °: steps 7,5°.

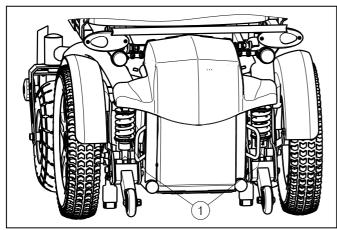
- 1. Loosen the star knob ①.
- 2. Pull / push lightly on the armpad to place the armpad to the desired height or turn to the armpad to place the armpad in the desired angle.
- 3. Retighten the star knob ①.





# 2.4 Suspension

The strength of the springs can be adjusted to enhance your comfort. These springs are located on the back of the electrical wheelchair, behind the battery cover.



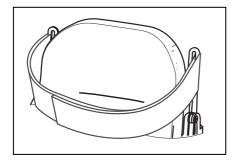
If you turn the adjuster ① to the <u>left</u>, the range of the springs <u>lengthens</u> and the suspension becomes softer.

If you turn the adjuster ① to the <u>right</u>, the range of the springs <u>shortens</u> and the suspension becomes firmer.

#### 2.5 Backrest inclination

The backrest inclination you can adjust with your operator control (electrical adjustment). Refer to the manual of the operator control for the backrest inclination instructions. The range for angle adjustment of the backrest is 11° to 84°: stepless.

#### 2.6 Chest belt



A chest belt is attached to the upper part of the backframe to secure the user during the standing/upright function. Place the chest belt straps on top of one another and press them tightly. The chest belt is made secure by an adhesive system.



Attach the chest belt in such a way that the upper body is pressed against the back section so that the upper body cannot move involuntarily.



The chest belt should not restrain the user's arms.



As using the chest belt can restrict breathing, the patient must agree to the use of the chest belt.



# 2.7 Standing / upright function

To use the standing/upright function, you must always ensure beforehand that the legs are made secure with the knee protector and the upper body likewise with the chest belt (see descriptions in the relevant sections, "Knee protector" and "Chest belt").

The standing/upright function must only ever be used when another person is supervising.

The standing/upright function may not be used without the chest belt and knee protector being secured - this would be done at your own risk.

The manufacturer accepts no liability for use of the standing/upright function without the chest belt and knee protector.

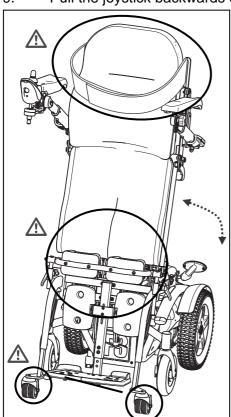
The standing/upright function may only be used if all four of the wheelchair's wheels are in contact with a level surface (and while being used on the two support wheels).

Make sure that no objects, persons or body parts are inside the movement range of the upright function, since this could cause damage or injury.

Ensure that the steering cables do not get caught during the upright function, as this could damage the product.

## Follow this sequence when using the standing/upright function:

- 1. Adjust to the position you want.
- 2. Ensure that the wheelchair is stable. If necessary move it to the position you want.
- 3. Switch off the drive electronics.
- 4. Deploy the knee protector (or have it deployed for you).
- 5. Check that the feet are resting flat on the footplate.
- 6. Deploy the chest belt (or have it deployed for you).
- 7. Check whether the armrests are in a good position.
- 8. Switch on the drive electronics and select the adjust function for the upright function.
- 9. Pull the joystick backwards or push it forwards to carry out the relevant function.



Bear in mind that, when the upright function is in use, the wheelchair rests on the support wheels beneath the footplate and the front wheels lift about 10 mm from the ground. To change direction, the wheelchair is then moved using the support wheels and the rear wheels. There is only limited drive functionality.

Only loosen the chest belt and the knee protector again when the wheelchair has been returned to the seated position.

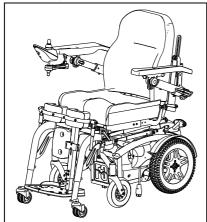


#### 2.8 Transfer in and out the electric wheelchair

**⚠ 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, footplate, armrests as support.



- 1. Park the electric wheelchair as close as possible to the place where you want to transfer.
- 2. Check that the operator control is switched off. Make sure that the wheelchair is NOT in freewheel mode.
- 3. If the transfer is on the side of the wheelchair, swing away the armrest on that side.
- 4. Swing away the knee protector.
- 5. Transfer to / from the electric wheelchair.

# 2.9 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 footplate.

# 2.10 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.

MARNING: Risk of unsafe settings - Use only the driving characteristics described in this manual.

# 2.10.1 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 control is switched 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.

# 2.10.2 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.



# 2.11 Operating the brakes

The wheelchair is foreseen from regular and parking brakes according STVZO (the German traffic law).

Let go of the joystick to stop the electric wheelchair and activate the regular brakes. With the freewheel device you can operate the parking brakes.

# 2.11.1 Parking the electric wheelchair

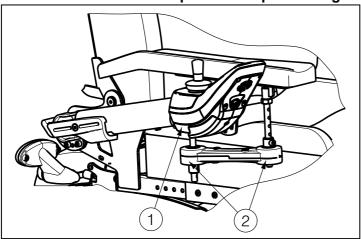
Once your electric wheelchair has been turned off, no command can be sent to the driving system. Always park your electric wheelchair on sites that are easy accessible and on horizontal surfaces that the four wheels are touching the ground.

# 2.11.2 Operator controls

The instructions for use from the operator controls you can find in the seperate user manals of the operator controls that is included with your wheelchair.

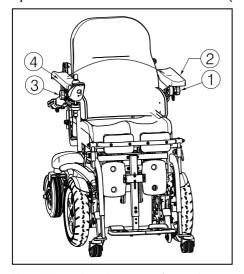
Changing the software is only allowed by Vermeiren. For changes in the software contact Vermeiren.

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



The operator control ① can be completely swing away. Take the operator control and turn him inwards or outwards with the swivel system ②.

Some persons are left or right handed, therefore it is possible to change the position of the operator control to the other side (left or right).



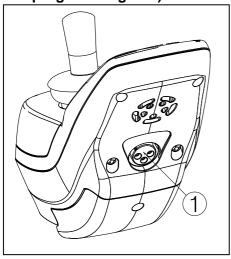
- 1. Loosen the starknob ① and remove the armpad without operator control ②.
- 2. Loosen the starknob  $\ensuremath{\mathfrak{I}}$  and remove the armpad with operator control  $\ensuremath{\mathfrak{I}}.$
- 3. Mount the armpad with operator control ④ on the other side of the wheelchair.
- 4. Mount the armpad without operator control ② on the other side of the wheelchair.
- 5. Check that the starknobs ① and ③ are firmly secured.

To adjust the distance from the operator control to the backrest you can adjust the telescopic armrest (refer to paragraph 3.3.2).



# 2.11.3 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 control. Here, too, is the connnection 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 operator control off and then on again.

# 2.11.4 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 = PUSH ACTION BACKWARD =

FORWARD MOVEMENTBACKWARD 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

MARNING: 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.



#### 2.11.5 Backward movement

- MARNING: 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. Left and right controls act inverse when driving backwards.

# 2.11.6 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 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" for maximum safe slope).
- ▲ 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.

# 2.11.7 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" for maximum safe slope).

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 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.

# 2.12 Driving the electric wheelchair on stairs

If you want to be taken up or down stairs with the wheelchair, you will need a wheelchair ramp or wheelchair lift system.

# 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 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.
- MARNING: Risk of injury Use a restraining safety belt to secure yourself in your wheelchair.
- MARNING: Risk of tipping over Put the adjustment functions (seat, backrest, footplate, ...) 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 as 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 footplate and support wheels 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. If your attendant does not have the strength to push the wheelchair up the ramp, you must immediately secure it by engaging the electronic parking brakes (EMERGENCY STOP).

# 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 is fitted with a freewheel device that is accessible and operable by the occupant and attendant. These device shall be used as a parking brake. Put the chair in neutral with the adjusting levers ① on both motors.

Clutch or declutch the motor by following the instructions below:



#### **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.



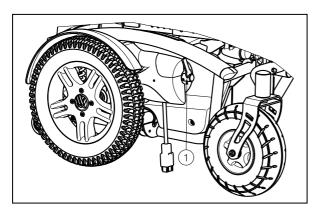


#### **NEUTRAL**

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.



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.



- ⚠ 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.

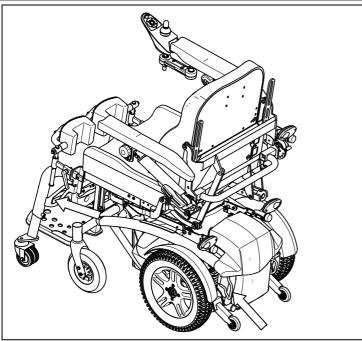
# 2.15 Transport in the car

- **⚠** DANGER: Risk of injury This wheelchair is not intended to be used as a seat in a motor vehicle (ISO 7176-19).

- ⚠ WARNING: Risk of injury- Before moving the wheelchair, the seat/backrest system should be moved to the seated position.

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





It is not possible to transport the wheelchair in the car. Use a van to transport the wheelchair.

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

Attach the wheelchair in the van like shown on the picture.

To prevent the wheelchair from moving about, switch the locking mechanism to electronic driving (activation of the electromagnetic parking brakes). In addition, engage the parking brakes if present in your model. If you require further belt securing systems, make sure that they are only attached to solid parts of the frame.

# 2.16 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 the most foreward).
- Place the armrests in the most inward position.
- Check that the adjustment levers shall positioned inwards.
- Cover the operator control with a soft material that can withstand shocks.

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



#### 2.17 Batteries

The standard for your electric wheelchair is two closed, 12 V/50 Ah or 80Ah 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 loose 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).

# 2.18 Battery charger

To charge the batteries, only use the battery charger supplied - IMPULSE S . 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.

# 2.19 Charging the batteries

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

As the IMPULSE S 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. 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 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).

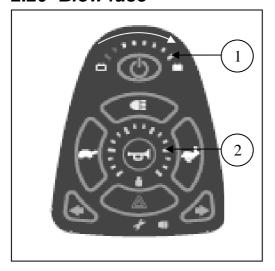
If you decide not to use your electric wheelchair for an appreciable period, you must nevertheless recharge it regularly to keep it in a running condition ready for immediate use.

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

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



#### 2.20 Blow fuse



To protect the motor against overload, there is a heat monitoring system located in the power module 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 indicate that the motor is overloaded, there is a fault code on the operator control. This code comprises of:

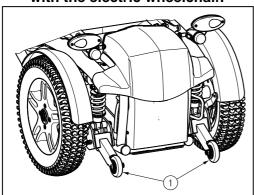
- 1: Battery indicator flickering in sequence from left to right.
- 2: All LEDs of the speedindicator flickering at the same time.

To be able to use the electric wheelchair again, place joystick in neutral, remove the overload and wait till the motor has cooled down. Your wheelchair is now ready for use again.

To protect the wheelchair against short circuit, a blow fuse is located on the battery compartment. When there is short circuit in the wheelchair, the blow fuse melts. There will be no function, no identification anymore. Contact your specialist dealer.

# 2.21 Anti-tipping (B78)

# △ CAUTION: Risk of injury - Check that the anti-tipping is working before driving with the electric wheelchair.



For your safety your electric wheelchair is equipped with an anti-tipping 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.

# 3 Installation and adjustment

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

The Forest 3 SU has been designed as a rear wheel drive electric wheelchair with stand up device for limited indoor and outdoor use. The advantage of this wheelchair is a better maneuverability and possibility to stand up.

- MARNING: 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 Forest 3 SU shall need following tools:

- Wrench set n° 10 to n° 13
- Allen keyset n° 4 to n° 6

Any activities requiring these tools should only be carried out by authorized persons.

# 3.2 Manner of delivery

The electric wheelchair shall be delivered with:

- Framework with armrests, operator control, rear and front wheels, seat and backrest
- 1 footplate (incl. knee/leg protector and support wheels)
- 2 x drive batteries, 2 x drive motors
- Impulse S charger + manual of Impulse S charger
- Electronics
- Stand up device
- Tools
- Operator control + manual operator control
- Chest belt
- Tip protector
- Accessories
- Instruction manual

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

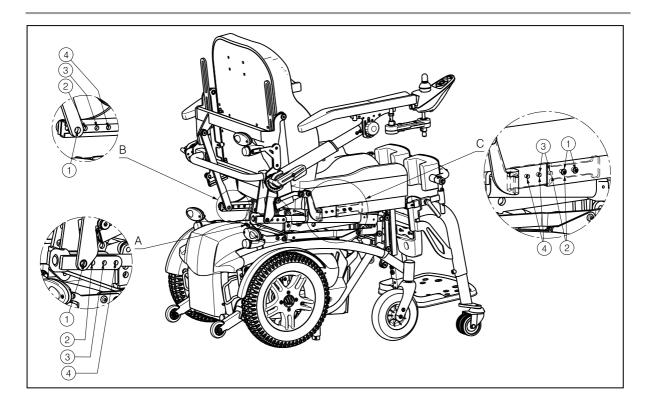
- **⚠ WARNING:** Risk of injury Turn the electric wheelchair off before you perform any adjustments.
- MARNING: Risk of injury Never perform any adjustments while you are driving or the patient is sitting in the wheelchair.
- **⚠ WARNING:** Risk of injury Adjustments may only performed by your specialist 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 the seat depth

The Vermeiren Forest 3 SU is adjustable in 3 different seat depths over a range of 50 mm (steps of 25 mm). Adjusting the seat depth is on your own risk.

- **★ WARNING:** Risk of injury Make sure all screws are firmly secured before driving with your electric wheelchair.
- MARNING: Risk of injury Adjusting the seat depth is on your own risk. Use the instructions below carefully to adjust the seat depth by yourself.





Adjust the seat depth with instructions below (use the sequence below):

#### Detail A: Adjust the backrest motor.

- 1. Loosen the screw from the backrest motor.
- 2. Move the motor more backwards or forwards until the desired position and until the relevant holes lie above one another so that the fixing screws can be inserted.
- 3. Retighten the screw firmly by hand.

#### Detail B: Adjust the telescopic guide.

- 1. Loosen the screw from the telescopic guide.
- 2. Move the telescopic guide more backwards or forwards until the desired position and until the relevant holes lie above one another so that the fixing screws can be inserted.
- 3. Retighten the screw firmly by hand.

#### Detail C: Moving the seat frame.

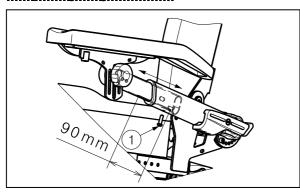
- 1. Loosen the two screws on either side of the frame.
- 2. Pull the seat more backwards or forwards until the desired position and until the relevant holes lie above one another so that the fixing screws can be inserted through the frame.
- 3. Retighten the screws firmly by hand.

Hole	Seat depth
1	500 mm
2	475 mm
3	450 mm
4	Not used



# 3.3.2 Adjusting armrest

#### \* Adjusting length armrest

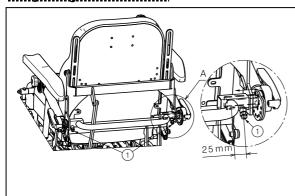


Adjust the <u>length</u> of the armrests as follow (range 90 mm: stepless):

- 1. Loosen the screw ① just below the armrest.
- 2. Adjust the armrest to a comfortable length.
- 3. Tighten the screw ① properly.

Check that the armrests are positioned identically on both sides.

#### \* Adjusting width armrest



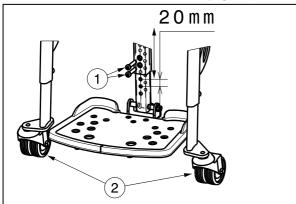
Adjust the <u>width</u> of the armrests as follow (range 25 mm: stepless / on each side):

- 1. Loosen the screw ① on the back of the wheelchair just below the seat frame.
- 2. Adjust the armrest to a comfortable width.
- Tighten the screw ① properly.

Check that the armrests are positioned identically on both sides.

# 3.3.3 Adjusting footplate

- **WARNING:** Risk of injury Make sure that the footplate is properly tightened before using the wheelchair.
- ▲ CAUTION: Risk of damage Avoid that the footrest make any contact with the ground. Keep a minimum distance from 60 mm above the ground.
- ▲ CAUTION: Risk of injury Never grasp the wheelchair by the footplate in order to move the wheelchair. Only grasp fixed parts of the frame.



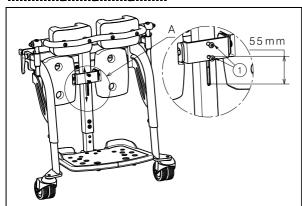
Adjust the <u>height</u> of the footplate as follow (6 different positions: range 100 mm: steps 20 mm):

- 1. Loosen and remove the screws ①.
- 2. Move the footplate to the desired height.
- 3. Retighten the screws ①.



# 3.3.4 Adjusting legrests

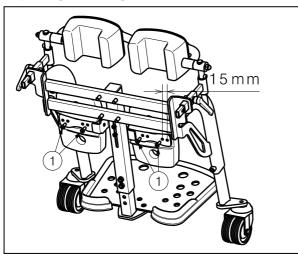
#### Adjusting height legrests



Adjust the <u>height</u> of the legrests as follow (range 55 mm: stepless):

- 1. Incline the footplate with the operator control.
- 2. Loosen the two screws ① a little bit.
- 3. Adjust the legrests to a comfortable height.
- 4. Retighten the two screws ① properly.

#### Adjusting width legrests

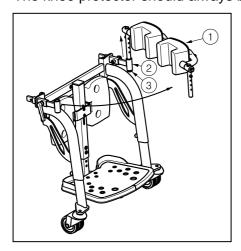


Adjust the <u>width</u> of the legrests as follow (2 different positions over a range of 15 mm):

- 1. Incline the footplate with the operator control.
- 2. Loosen the screws ① just below the legrests.
- 3. Adjust the legrests to a comfortable width.
- 4. Retighten the screws ① properly.

# 3.4 Knee protector

The knee protector should always be used for the standing/upright function.



To swing away the knee protector:

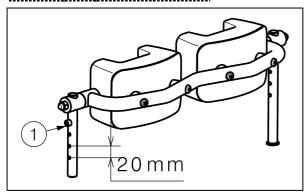
- 1. Lift the knee protector upwards ①. Not possible to remove the knee protector, on one side the knee protector is blocked by part ③.
- 2. Swing away the knee protector around tube ②.

To mount the knee protector:

- 1. Turn the knee protector around tube 2.
- 2. Mount the pen in the holder.
- 3. Push the knee protector downwards until the screw rest on the holder.
- 4. Check the knee protector is attached very well.



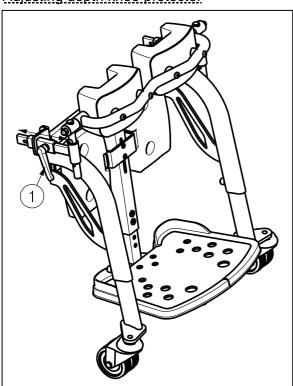
#### Adjusting height knee protector



Adjust the <u>height</u> of the knee protector as follow (range 60 mm: steps 20 mm):

- 1. Loosen the two screws ① on both sides.
- 2. Adjust the knee protector to a comfortable height by placing the two screws in another hole. See that the screws on each side are placed in a hole at the same height.
- 3. Retighten the two screws ① properly.

#### Adjusting depth knee protector



Adjust the <u>depth</u> of the knee protector as follow (range 60 mm: stepless):

- 1. Loosen the levers ① on both sides.
- 2. Adjust the knee protector to a comfortable depth.
- 3. Retighten the two levers ① properly.

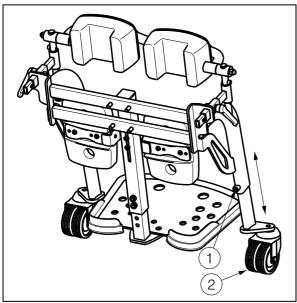
When the knee protector is in the position you want, re-tighten the knee protector.



# 3.5 Supporting wheels

MARNING: Risk of injury - Make sure that the supporting wheels are properly tightened before using the wheelchair.

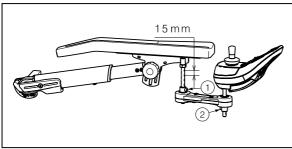
**★** WARNING: Risk of injury - Make sure that the supporting wheels rest on the ground and are positioned at the same height.



The supporting wheels are adjustable in 6 different positions (range: 100 mm steps 20 mm):

- 1. Loosen the hexagon socket screw ①.
- 2. Move the supporting wheel ② to the desired height.
- 3. Retighten the hexagon socket screw ①.

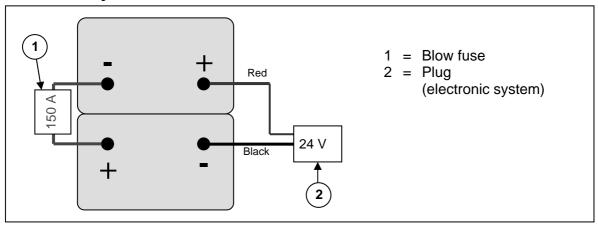
# 3.5.1 Adjusting operator control



Adjust the <u>height</u> of the operator control as follow (range 105 mm: steps from 15 mm):

- 1. Loosen the screws ① and/or ②.
- 2. Adjust the operator control to a comfortable height.
- 3. Retighten the screws ① and/or ② properly.

# 3.6 Battery connections





# 3.7 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.

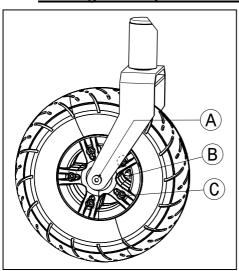
Only an expert can guarantee correct assembly. Work not done by your specialist dealer, would void any warranty claims.

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 wrong inflation equipment or wheels.

**⚠ 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.

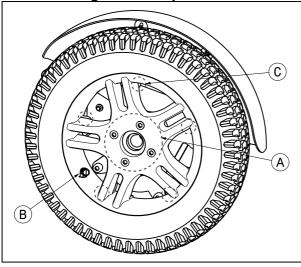
#### **ASSEMBLY**

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 these connection with the 4 screws. Afterwards secure the wheel by hand-tightening the axle nut. Inflate the wheel to the recommended tyre pressure.

# 3.8 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 personel. To change the batteries, send your electric wheelchair to the specialist dealer.

# 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.



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Dealer's stamp:	Dealer's stamp:
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• 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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