

VERMEIREN

Maintenance manual
Electric wheelchair





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1 Maintenance

⚠ CAUTION: Risk of electrical shocks - Disconnect the batteries to prevent any unwanted current flow before performing any maintenance work.

Lifetime of the electric wheelchair is strongly influenced by its use, storage, regular maintenance, servicing and cleaning.

The batteries are maintenance-free.

1.1 Regular Maintenance

The maintenance activities to ensure a good condition for your Vermeiren wheelchair are described below:

- Before every ride
 - Check the tyres for visible damage and/or soiling. Remove any dirt as it could impair the motion of the tyres. When a tyre is damaged, please go see an authorized workshop for repair.
 - Check the tyre pressure and inflate them if necessary (only for air tyres).
 - Check the motor brakes, parking brakes (if available) and replace if necessary.
 - See that all the screws are tightened properly.
 - Check the electric wheelchair (cleanliness, cracks, damage on structural parts ...) and make it clean. If necessary change the coating.
 - Switch on the electronics after verifying that the motor is engaged. The operator control indicates the level of the batteries. If the battery charge is not sufficient for the intended route, switch off the operator control and charge the batteries.
 - Use the drive electronics display to check that the driving, braking and adjustment features are fully-functional. If these functions are impaired, contact your dealer.
- Every 8 weeks: inspection and possibly lubricating or adjusting from
 - Armrests, footrests or footplates, wheel axles
 - Dirt under the battery cover (carefully remove any dirt as it can corrode the plugs).
 - ⚠ **WARNING: Remove the pole connectors before cleaning the poles of the batteries.**
 - ⚠ **WARNING: Risk of Short circuit - Be careful not to put any objects capable of conducting an electric current between the poles of the batteries.**
 - Dirt / corrosion on the poles of the batteries (be careful to keep the poles of the batteries clean as dirt may damage the batteries).
 - Tighten moving parts that can be removed.
 - Condition of the cushioning materials
 - Profile depth of the wheels

- Every 6 months or for every new user
 - General review
 - Mechanical integrity
 - Cleanness, Disinfection
 - Function of the wheels and check tyre pressure
 - That the charger is working
 - Check the following greasing points:
 - a) All movable parts

For your convenience, on the back of this manual is a maintenance plan.

Repairing and assembling of spare parts for your wheelchair may only be performed by the specialist dealer.

Only authorized Vermeiren spare parts may be installed.

1.2 Shipping and storage

The shipping and storage of the electric wheelchair shall be according following instructions:

- Store in a dry place (between +5 °C and +45 °C).
- The relative humidity of the air should be between 30% and 70%.
- Provide sufficient covering or packaging to protect the electric wheelchair from rust and foreign bodies. (e.g. salt water, sea air, sand, dust).
- Store all removed parts together in one place (or mark them if necessary) to avoid mixing up with other products when re-assembling (e.g. the charger).
- Components must be stored without being subjected to strains (Do not put too heavy parts on the electric wheelchair, not clamping between something, ...). Grasp the wheelchair by solid frame parts only.
- Check internal cables for squashing and the prevention of kinks.
- Disconnect the power plug of the battery charger.

If batteries are not used, they can completely drain. So if you no longer use your electric wheelchair, you could leave it connected to the battery charger. Charging is automatically controlled by the battery charger. If you remove and store the batteries, kindly note the following:

- Remove the cable clamps from the poles of the battery.
- The positive pole must at least be covered by a pole cap.
- Only grasp the batteries by two opposite sides of the unit.
- Make sure that no objects can make contact with both poles during the time of storage (danger of short circuits!).
- Batteries should only be stored in dry, well-ventilated spaces at a temperature between 0°C and +40°C. Preferred storage temperature: **+20°C**).
- Keep the batteries in the battery boxes for protection against moisture or other external influences.
- Protect the plugs and sockets of the battery boxes against corrosion.
- Protect the batteries against deep discharging (see the chapter on battery charging).

If you have further questions, consult your specialist dealer who will gladly help you in regard to storage and servicing of your batteries.

1.3 Care

The cleaning of your wheelchair is possible with household products.

1.3.1 Seat and back cushion

The cleaning of the seat and back cushion shall be done as follows:

- Clean the seat and back cushion with a cloth moistened in warm water. Take care that you do not soak the cover.
- Use a mild commercial detergent for removing stubborn dirt.
- Stains can be removed by using a sponge or a soft brush.
- Do not use strong cleaning liquids like solvents, nor use hard brushes.
- Never clean with steam and/or pressure washers.

Damage caused by the use of improper cleaning agents is not the responsibility of Vermeiren.

1.3.2 Plastic parts

Clean plastic parts of your electric wheelchair with commercial plastic cleaners. Only use a soft brush or soft sponge. Take note of special product information.

Examples of plastic parts are the footplates, battery cover, etc.

1.3.3 Coating

The high quality of the surface layer guarantees optimal protection against corrosion. If the outer coating is damaged by scratching or in some other way, get your specialist dealer to repair the affected surface.

When cleaning, only use warm water and normal household detergents and soft brushes and cloths. Ensure that no moisture gets into the components (tubes, electronics, ...).

Initially the chrome parts only require rubbing with a dry cloth. Dull places or stubborn dirt can best be removed by using a suitable commercial chrome polish.

Dulling can be avoided by lightly greasing steel parts with Vaseline.

1.3.4 Electronics

⚠ WARNING: Check the plug connectors for corrosion or damage before every ride, since it could affect the efficiency of the electronics.

⚠ WARNING: Remove the batteries before performing any maintenance, to avoid involuntary conduction of currents.

Wipe the operator control with a cloth moistened by a few drops of a commercial domestic cleaner. Do not use any abrasives or sharp-edged polishing equipment like a metal scrubber or brush, since these can scratch the surface of the operator control.

1.4 Inspection

In principle we recommend one inspection every year, and a minimum of one before usage is resumed. All of the following checks must be performed and documented by authorized persons:

- Visually check the frame parts for plastic deformation, cracks and impaired functioning. (basic frame, seat frame, back frame, side parts, footrests, legrests, motor suspensions).
- Visually check all plastic parts for cracks and brittle spots.
- Check the solidity and seating of all screws.
- Visually check all housings for damage, screws must be securely fixed, seals and gaskets should not exhibit visible damage.
- Visually check for damage to the paintwork (danger of corrosion).
- Check the plug connectors for corrosion or damage, since it could affect the efficiency of the electronics.
- Check the operation of the tyres (free running, level rolling, axle play, tyres, profile, condition of the rims, air pressure in the case of air tyres, floating axles, etc.).
- Verify the amount of grease on the metal joints of movable parts.
- Check the functioning of the armrests, footrests and legrests (locking, load, deformation, wear caused by loads).
- Check the operation of other detachable parts (example: personal safety belt, battery housing, fitting back/seat, etc.).
- Check the cabling (especially for: crushing, abrasion, cuts, visible insulation of the inner conductor, visible metallic veins, kinks, lumpiness, color changes of the outer sleeve, brittle spots).
- Electric leads to be securely placed to avoid shearing, crushing and other mechanical stresses and strains.
- For the charger of the electric wheelchair measure the resistance of the protective braid (O) according to VDE 0702-1.
- For the charger of the electric wheelchair measure the residual diversion current (A) according to VDE 0702-1.
- For the charger of the electric wheelchair measure insulation resistance (MO) according to VDE 0702-1.
- Check the functioning of the drives (during a test drive → noises, speed, free running, etc.), if necessary: Measure the performance, first with no load and then with the nominal load ("SWL"), to check for wear and tear of the motors by comparing the values of the electric current with the values when the electric wheelchair was delivered.
- Check the motors for adjustments (seat inclination, backrest inclination, lift column).
- Check the condition of the batteries, covers and tubes.
- Remove carbon dust of carbon brushes and if necessary replace carbon brushes.
- Completeness of the delivery condition, instruction manual available?

Higher performance and/or high utilization (daily use or use on difficult terrain), increase the inspection intervals for wear parts (carbon brushes, pollution motor, tyre profile, ...) to at least half-yearly review.

Checking measurements may only be carried out by skilled persons trained on the wheelchair and at least under the supervision of an electrician who knows the checking instruments and processes. Only an electrician is able to release the electric wheelchair for use after performing measurements or servicing.

The service must only be confirmed in the maintenance plan if a minimum of all the above-mentioned aspects have been checked.

1.5 Troubleshooting

The following list will assist you with the troubleshooting of your electric wheelchair.

Problem	Cause of problem
The electric wheelchair refuses to go once started. No indication of charge level	<ul style="list-style-type: none"> • Electric wheelchair is not switched on. • Battery plug not connected (batteries not making contact). • Thermal safety fuses disengaged. (check that the fuses of the operator control and the batteries are defective or have burn out). • Batteries defective (totally discharged). • Defective operator control. • Loom of cables defective.
The electric wheelchair refuses to go once started. Charge level insufficient.	<ul style="list-style-type: none"> • Motor/gears in neutral. • Magnetic brake defective. • Motor defective.
Operating error	<ul style="list-style-type: none"> • Possible safety shut down or operating error (joystick). • Put the joystick in neutral position and restart the system.
Thermal safety fuses disengage.	<ul style="list-style-type: none"> • Motor overloaded (see "Technical specifications"). • Thermal safety fuses defective.
Battery error	<ul style="list-style-type: none"> • Check batteries and cabling, if necessary charge. • If necessary, replace batteries.
Batteries cannot be charged.	<ul style="list-style-type: none"> • Batteries not fitted correctly. • Loading socket defective. • Wrong charger. • Loading device defective.

1.6 Disinfection

⚠ WARNING: Dangerous Products - The use of disinfectants is restricted to authorized personnel.

⚠ WARNING: Dangerous Products, risk of skin irritation - Wear suitable protective clothing. Take note of the product information of the solutions concerned.

All parts of the wheelchair can be treated by scrubbing with a disinfectant.

All steps taken to disinfect rehabilitation equipment, their components or other accessory parts are to be recorded in a disinfection report containing a minimum of the following information (with product documentation appended):

Date of the disinfection	Reason	Specification	Substance and concentration	Signature
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Table 1: Example of a disinfection book

Abbreviations used in column 2 (reason):

V = Suspected infection IF = Infection case W = Repetition I = Inspection

For a blank sheet of a disinfection book see § 6.

The recommended disinfectants for scrubbing (based on the list provided by the Robert Koch Institute, RKI) are standing in the table below. The current state of the disinfectants included in the RKI list can be obtained from the Robert Koch Institute (RKI) (homepage: www.rki.de).

Active substance	Product name	Laundry disinfection		Surface disinfection (scrubbing-/wiping disinfection)		Disinfection of excretions 1 part sputum or stools + 2 parts diluted solution or 1 part urine + 1 part diluted solution						Area of effectiveness	Manufacturer or Supplier
		Diluted solution	Time to take effect	Diluted solution	Time to take effect	Sputum		Stools		Urine			
						Diluted solution	Time to take effect	Diluted solution	Time to take effect	Diluted solution	Time to take effect		
		%	Hr.	%	Hr.	%	Hr.	%	Hr.	%	Hr.		
Phenol or phenol derivative	Amocid	1	12	5	6	5	4	5	6	5	2	A	Lysoform
	Gevisol	0,5	12	5	4	5	4	5	6	5	2	A	Schülke & Mayr
	Helipur			6	4	6	4	6	6	6	2	A	B. Braun
	m-cresylic soap solution (DAB 6)	1	12	5	4							A	
	Phenol	1	12	3	2							A	
Chlorine, organic or inorganic substances with active chlorine	Chloramin-T DAB 9	1,5	12	2,5	2	5	4					A ¹ B	
	Clorina	1,5	12	2,5	2	5	4					A ¹ B	Lysoform
	Trichlorol	2	12	3	2	6	4					A ¹ B	Lysoform
Per combinations	Apesin AP100 ²			4	4							AB	Tana PROFESSIONAL
	Dismozon pur ²			4	1							AB	Bode Chemie
	Perform ²			3	4							AB	Schülke & Mayr
	Wofesteril ²			2	4							AB	Kesla Pharma
Formaldehyde and/or other aldehydes or derivatives	Aldasan 2000			4	4							AB	Lysoform
	Antifect FD 10			3	4							AB	Schülke & Mayr
	Antiseptica surface disinfection 7			3	6							AB	Antiseptica
	Apesin AP30			5	4							A	Tana PROFESSIONAL
	Bacillocid special			6	4							AB	Bode Chemie
	Buraton 10F			3	4							AB	Schülke & Mayr
	Desomed A 2000			3	6							AB	Desomed
	Hospital disinfectant cleaner			8	6							AB	Dreiturm
	Desomed Perfekt			7	4							AB*	Desomed
	Formaldehyde-solution (DAB 10), (formaline)	1,5	12	3	4							AB	
	Incidin Perfekt	1	12	3	4							AB	Ecolab
	Incidin Plus			8	6							A	Ecolab
	Kohrsolin	2	12	3	4							AB	Bode Chemie
	Lysoform	4	12	5	6							AB	Lysoform
	Lysoformin	3	12	5	6							AB	Lysoform
	Lysoformin 2000			4	6							AB	Lysoform
	Melsept	2	12	4	6							AB	B. Braun
	Melsitt	4	12	10	4							AB	B. Braun
	Minutil	2	12	6	4							AB	Ecolab
	Multidor			3	6							AB	Ecolab
Nüscosept			5	4							AB	Dr. Nüsken Chemie	
Optisept			7	4							AB*	Dr. Schumacher	
Pursept-FD			7	4							AB*	Merz	
Ultrasol F	3	12	5	4							AB	Fresenius Kabi	
Amphoteric surfactants (amfotensiden)	Tensodur 103	2	12									A	MFH Marienfelde
Lye	Lime-milk ³							20	6			A ³ B	

1 Not effective against myco-bacteria when service disinfecting, especially in the presence of blood.
2 Not suitable for disinfecting blood-contaminated or porous surfaces (e.g. raw wood).
3 Useless for tuberculosis; preparation of Lime-milk: 1 part dissolved lime (calcium hydroxide) + 3 parts water.
* Checked for effectiveness on viruses in accordance with checking methods of the RKI (Federal Health Reporting 38 (1995) 242).
A: Suitable for killing vegetative bacterial germs including myco-bacteria as well as fungi, including fungal spores.
B: Suitable for deactivating viruses.

Table 2: Disinfectants

Kindly consult your specialist dealer if you have queries on matters related to disinfection; he will gladly assist you.

2 Warranty

Excerpt from the "General Business Conditions":

(...)

5. The terms of the guarantee may differ from country to country. Consult your specialist dealer for the guarantee period for warranty claims.

(...)

The guarantee excludes damage arising from structural changes to our products, insufficient maintenance, defective or improper handling or storage or the use of non-original parts. Likewise, the guarantee excludes parts or working parts subject to natural wear and tear.

(...)

The terms of the guarantee may differ from country to country. Please contact your dealer for further information.

3 Disposal



When disposing of the electric wheelchair or the batteries observe local regulations or contact your local disposal centre or return the product to your specialist dealer who, after submitting it to a hygienic procedure, will be able to send it back to the manufacturer who will dispose of and recycle it correctly, separating it into its component materials.

The manufacturer is responsible for taking back and recycling the electric wheelchair and shall meet the requirements of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment.

Packaging materials can be taken to disposal or recycling centers or to your specialist dealer.

4 Declaration of conformity

The manufacturer or his authorized representative :

N.V. VERMEIREN N.V

Address :

Vermeirenplein 1/15
2920 Kalmthout
Belgium

declares under his sole responsibility that the CE marked devices :

Productgroup: Electric wheelchairs
Productgroup (GMDN): Wheelchair, attendant / occupant, electric drive / steer, collapsible (GMDN 40840)
FAMHP (FAGG) registration number: BE/CA01/11/2-02965-23-CLI
Brand: Vermeiren
Type: Express 2009, Express V, Express VB, Kiddie Power (Sunny), Rapido, Navix

have been classified as class I, according to annex IX MDD 93/42/EEC, rule 12, and is manufactured in full conformity with the European instructions below - including the latest modifications - and with the national law, that organizes this directions :

Medical devices directive MDD 93/42/EEC: 2007

and is in conformity with the relevant European harmonized standards:

EN 12182: 2012, EN 12184: 2014

The manufacturer or his authorized representative :

N.V. VERMEIREN N.V

Address :

Vermeirenplein 1/15
2920 Kalmthout
Belgium

declares under his sole responsibility that the CE marked devices :

Productgroup: Electric wheelchairs
Productgroup (GMDN): Wheelchair, attendant / occupant, electric drive / steer, non collapsible (GMDN 41875)
FAMHP (FAGG) registration number: BE/CA01/11/2-02965-19-CLI
Brand: Vermeiren
Type: Ascend, Forest, Forest kids, Forest narrow, Forest kids+lift (Springer), Squod, Squod SU, Tracer, Tracer 'Junior', Timix, Timix SU, Forest3, Forest3 SU, Navix SU

have been classified as class I, according to annex IX MDD 93/42/EEC, rule 12, and is manufactured in full conformity with the European instructions below - including the latest modifications - and with the national law, that organizes this directions :

Medical devices directive MDD 93/42/EEC: 2007

and is in conformity with the relevant European harmonized standards:

EN 12182: 2012, EN 12184: 2014



SERVICE

The electric wheelchair was serviced:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

Dealer's stamp:

Date:

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



Notes

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Notes

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