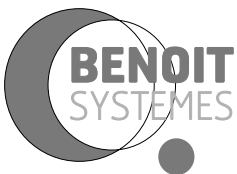


Light Drive Mini 2.1 - Light Drive 2.1 - Light Drive Plus 2.1



Mini Minotor 2.1 - Minotor 2.1 - Maxi Minotor 2.1

ENGLISH

# SERVICING & MAINTENANCE MANUAL

25

ETIQUETTE  
N° SÉRIE



Read this servicing manual BEFORE using this product and keep it for future reference  
The content of this document may update without prior notice. We recommend you visit our  
website regularly for any changes or updates.




# GENERAL REMARKS

## INTENDED USE

Combining precision, ease-of-use and safety, Light Drive range is a lightweight power add-on that transforms a manual wheelchair into an electric wheelchair, making it easier to move about in everyday life. It is designed for anyone whose ability to walk has been impaired, but who, having good eyesight and being physically and mentally sound, is able to drive a motorised vehicle. Designed to meet the practical needs of users seeking independence and mobility, it will be the ideal and reliable companion to take you everywhere, both indoors and outdoors, even on difficult ground. Nonetheless, it is not intended to convert the wheelchair into an all-terrain or sports wheelchair.

Users must follow general safety and use instructions. As a producer, Benoit Systemes reserves the right to change the product specifications without prior notice.

 Please avoid using the Light Drive range before receiving instructions about the equipment from an approved dealer.

For any question about the use, servicing or safety of your equipment, contact your dealer. If you have further questions, you can contact BENOIT SYSTEMES, 7 rue du Pont 21450 BILLY-LES-CHANCEAUX  
Tel: +33(0) 3 80 96 54 65 [export@benoitssystemes.com](mailto:export@benoitssystemes.com)

## INDICATIONS

Light Drive range is compatible with most manual wheelchairs and suits people unable to walk or with restricted mobility, as a result of:

- Paralysis,
- Loss of a limb (amputation of the leg),
- A limb problem or deformity,
- Spasms / injuries to the joints,
- Strokes and brain injuries,
- Neurological disorders (multiple sclerosis, Parkinson's, etc.),
- Illness, such as heart and circulatory disease, balance disorder, as well as elderly people with enough strength in the upper body,
- People mentally and physically capable of using a control unit to handle the motorised wheelchair and its features safely.

The prescription conditions must consider all the factors for which the device Light Drive range provides a relevant answer. A Physician from PM&R (Physical Medicine and Rehabilitation), assisted by an occupational therapist, a physiotherapist, will assess the relevance of the solution of adaptable comfort with regard to the patient's pathology and capacities, to his/her environment, as well as physical and cognitive abilities.

A validation test will be carried out in the presence of the multidisciplinary team and the patient.

The purpose of this test will be to confirm the best match between:

- The physical and cognitive capacities of the patient, which should enable him to safely handle the device,
- And the device itself to meet the need of this particular disability compensation.

## SERVICE LIFE

Benoit Systemes considers a service life of five years as long as the product is used for its intended purpose and obeying use, safety and maintenance instructions. However, this service life can be exceeded when the product is serviced and maintained carefully and used cautiously, appropriate to its technical specifications.

The service life may also be considerably shortened following extreme or inappropriate use. The service life set by our company does not constitute an additional guarantee.

## REGULATIONS

This equipment has successfully undergone all the safety tests in accordance with European standards.

## SYMBOLS USED IN THIS MANUAL

In this manual, hazard statements are indicated by symbols. These symbols are accompanied by a warning indicating the risk level.

### WARNING

Indicates a dangerous situation that, if not avoided, is likely to cause severe or even fatal injuries.











### CAUTION







Indicates a hazardous situation that, if not avoided, is likely to cause in minor or slight injuries.

### INFORMATION

Gives advice, recommendations and useful information for efficient, problem-free use.

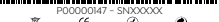
## MEANING OF SYMBOLS APPEARING ON THE LABELS

	Manufacturer
<b>SN</b>	Serial number - the motor drive serial number is located under the motor drive, in the place where you slide the battery.
	Date of manufacture DD/MM/YYYY
<b>MD</b>	Medical device
<b>CE</b>	CE marking in compliance with Annex V of European Regulation 2017/745/EEC
	Read the instructions for use carefully - indicates the need for the user to read the user instructions and safety guidance carefully.
	Keep dry
	Maximum user weight
	Maximum weight of the device
	Maximum speed
	This product has been supplied by a manufacturer aware of environmental issues. This product may contain substances harmful to the environment if it is discarded in a place [of exchange] contravening current legislation. <ul style="list-style-type: none"> <li>• The 'crossed-out wheeelin bin' symbol is applied to this product to encourage recycling when possible.</li> <li>• Preserve the environment by having this product recycled at a recycling centre at the end of its life.</li> </ul>
	In compliance with the European RoHS Directive, for 'Restriction of the use of certain Hazardous Substances', intended to reduce the use of hazardous substances in the manufacture of electronic equipment.
	The company manufacturing the packaging materials has paid a royalty to Eco-Emballage.

<b>BENOIT SYSTEMES</b> 7, rue du Pont 21450 - BILLY-LÈS-CHANCEAUX www.benoitsystemes.com MADE IN FRANCE		<b>SN</b> 
<b>LIGHT DRIVE 2.1</b>	<b>MD</b>	
<b>CE</b>		
		<b>120 Kg</b>
		
		<b>150 Kg</b>
		
		<b>10 Km/h</b>

**Leclanché**  
BATT. Li-Ion 25.6Vdc 11.4Ah (292Wh)  
Art N° : P0000001  
SN : X0000X  
  
BENOIT SYSTEMES  
www.benoitsystemes.com

**BENOIT SYSTEMES**  
LITHIUM-ION BATTERY  
BATTERIE LITHIUM-ION  
24.8V 18Ah (446Wh)  
  
7 rue du Pont - Billy-lès-Chanceaux  
21450 - FRANCE  
t 3333 80 98 24 25

**Leclanché**  
BATT. Li-Ion 25.7Vdc 19.2Ah (490Wh)  
Type : P00000147  
SN : X0000X  
  
P00000147 - SN00000X  
BENOIT SYSTEMES  
7 rue du Pont - 21450 Billy-lès-Chanceaux - FRANCE  
+33 333 80 98 24 25 - www.benoitsystemes.com

**BENOIT SYSTEMES**

 **Ne pas percer ni tarauder**  
Do not drill and no thread

 **Ne pas utiliser d'autres vis que celles fournies**  
Do not use others screws than those supplied

Ne pas **immerger** la batterie dans un liquide  
Do not immerse in any liquid

Ne pas exposer à des flammes ou à une **température supérieure à 50°C**  
Do not expose to flames or temperatures exceeding 50°C / 122°F

 Utiliser uniquement le chargeur Benoit Systemes  
Only use the Benoit Systemes Charger

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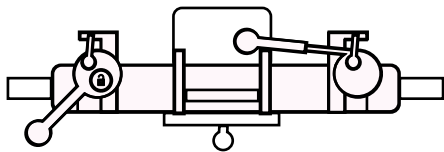
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# SPECIFICATIONS OF THE LIGHT DRIVE RANGE

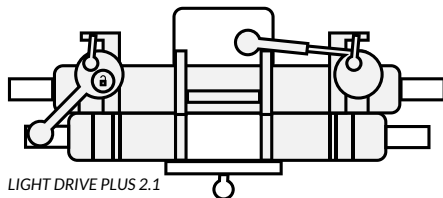
## WARNING

It is prohibited to modify the equipments without the producer's authorisation.

## GENERAL ASSEMBLY VIEW OF THE POWER UNITS



LIGHT DRIVE MINI 2.1 and LIGHT DRIVE 2.1



LIGHT DRIVE PLUS 2.1

## TECHNICAL SPECIFICATIONS

### Weight of the power unit

8.8 kg (Light Drive Mini and Light Drive) or  
16 kg (Light Drive Plus)

### Minimum dimensions

Light Drive and Light Drive Mini: 510 x 300 x  
275 mm

Light Drive Plus: 510 x 345 x 300 mm  
(the height varies depending on the clutch  
handle)

### Maximum weight of the user\*

120 kg (Light Drive Mini and Light Drive) or  
240 kg (Light Drive Plus)

Maximum permitted weight for the equipment  
(weight of wheelchair + weight of user,  
excluding weight of the equipment)

150 kg (Light Drive Mini and Light Drive) or  
260 kg (Light Drive Plus)

### Maximum speed

10 kph

### Maximum safe slope

6° (11%)

### Maximum crossable obstacle height

6 cm (with and without run-up)

### Suitable wheelchairs\*\*

Compatible with most manual wheelchairs

*\* If you exceed this limit, you might damage the frame or fastenings of your equipment, which could cause serious injuries for you or someone else.*

*\*\* A compatibility guide is available on our website to know the wheelchair models on which the Light Drive 2.1 can be installed, in compliance with the general safety and performance requirements set out in European Regulation 2017/745 on medical devices.*

## COMPONENTS

Power add-ons consists or four of several components :

### THE MOTOR ASSMBLY

Consisting of two or four electric motors fitted with rollers, clutching mecanisms and the battery holder.

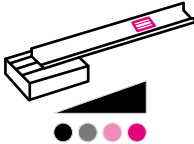
## POWER SUPPLY

The power supply consists of :

- a 11.4 Ah lithium-ion battery or
- a 18 Ah lithium-ion battery or
- a 19 Ah lithium-ion battery

It varies depending on the motorisation model.

The battery is mounted on a rack, which enables it to be installed and connected automatically to the motor assembly. It is delivered charged.



A charge indicator is built into the 11.4Ah and 19Ah batteries. Each of the 4 LEDs represents 25% of the total capacity. When the red LED starts flashing, there is approximately 10% of battery life remaining. The battery must be recharged after each day of use.

### 11.4Ah battery

Lithium-ion battery	11.4 Ah, 292Wh
Weight	3.85 kg
Range*	up to 15 km
Charging time	5-6 h When the battery is empty
Service life	1000 cycles

### 18Ah battery

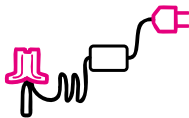
Lithium-ion battery	18 Ah, 446Wh
Weight	4.85 kg
Range*	up to 20 km
Charging time	5-6 h When the battery is empty
Service life	1000 cycles

### 19Ah battery

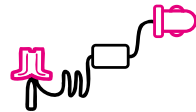
Lithium-ion battery	19 Ah, 490Wh
Weight	3.62 kg
Range*	up to 20 km
Charging time	7-8 h When the battery is empty
Service life	1000 cycles

\* Battery life can vary depending on the temperature, the person's weight on the type of ground.

**i** Only use original batteries. We decline all liability for damage caused by using other batteries not supplied by us.

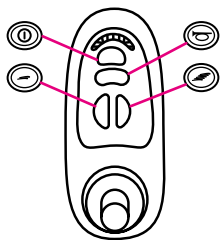


A 24 V charger is supplied with the battery. You can recharge 11.4 Ah, 18 Ah and 19 Ah batteries with the same charger.

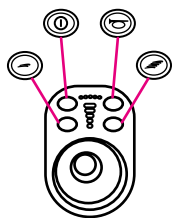


**As an option :** The 24 V car charger for lithium-ion batteries (with cigarette lighter socket)

## CONTROL UNIT



LARGE  
JOYSTICK



SMALL  
JOYSTICK

- Charge level indicator\*
- ⓪ Start/stop button
- ⓪ Horn
- ⓪⓪⓪ Power level indicator  
5 levels
- ⓪ Increase power
- ⓪ Reduce power
- ⓪ Joystick

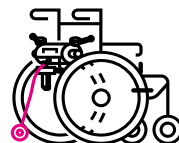
* If you have an 11.4 Ah lithium-ion battery	If you have an 18 Ah lithium-ion battery	If you have a 19 Ah lithium-ion battery
Please refer to the charge level indicator located on the battery.	When the first green LED (small joystick) or the first 2 LED (large joystick) disappear on the charge level indicator, there is 50% remaining range.	When the first green LED (small joystick) or the first 2 LED (large joystick) disappear on the charge level indicator, there is 30% remaining range.

## STORAGE BRACKET

A controller bracket is fitted to the side of the power unit, used to store the joystick when you take the power add-ons off the wheelchair.

## ANTI-TIP

The wheelchair fitted with a power add-on keeps its initial balance. But the power of the motors, if badly controlled on slopes, can make the wheelchair tip over. The anti-tip fulfils its role effectively while allowing obstacles to be crossed. It must always be fitted.



⚠ Benoit Systemes waives all liability if an accident occurs while the anti-tip is not fitted.

## MUDGUARDS (as an option)

The mudguards are fitted on the roller covers and become an essential accessory for outdoor trips in bad weather.



# DRIVING PRACTICES

Before making your first journey, you should familiarise yourself with operation of the motorised vehicle and all the accessories. Take your time to test all the functions and driving modes.

## PROPERLY SEATED = SAFE DRIVING

Before each journey, check that:

- You are seated so as to have access to all the controls.
- The battery is sufficiently charged for the journey you're planning to make.
- The safety anti-tip is clipped into the rear handle. Check the mounting direction (small wheel downwards) and that the locking pin is securely fitted.

### WARNING

Do not use any other motorised device or accessory at the same time as the power add-on. If you wish to use another device, please remove the power add-on from the wheelchair for your own safety.

### How to move about?



Start moving by pressing the 'Start/Stop' button on the control unit once. This turns the power on. Pressing this button again turns off and deactivates the control unit. Any problem is signalled by flashing indicator lights on the control unit, preventing movement of the wheelchair.

The direction and speed are controlled by the joystick. Although the control system is relatively easy to use, a little practice will be needed to control the wheelchair properly at different speeds.

To move, just push the joystick in the direction you want to go. The joystick's distance from its neutral position determines the speed and radius of curvature of movement.

When the joystick is released it returns to the neutral position (central) automatically, the wheelchair's movement stops and the brakes are applied.

The speed the wheelchair can reach is set by the speed regulator. The user can select one of 5 possible speeds.

The speed is adjusted using the  or  buttons: it is proportional to the number of LEDs lit (up to 5 for the maximum authorised value).

### How to tackle a short or long climb?

A short climb is often steeper than it seems. This is why slopes must be tackled with enough speed. If you stop while climbing, you must restart gently

to avoid tipping backwards. If necessary, lean forward to provide a counterweight and prevent the wheels slipping.

### How to tackle ground sloping sideways?

When the ground slopes sideways, the wheelchair is drawn naturally towards the lower side. For this reason, you should correct the direction using the joystick, particularly anticipating it as much as possible on steep climbs. In some difficult routes, another person's help may be useful.

### How to brake?

To prevent any uncontrolled movement of the motorised vehicle, the motors are fitted with automatic brakes that are applied under the following conditions:

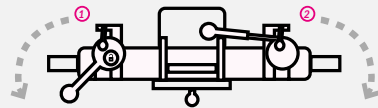
- The start/stop switch is in the 'stop' position.
- The start/stop switch is in the 'start' position and the joystick is in the neutral position.

The brake is released automatically as soon as the vehicle starts moving, as the joystick is out of the neutral position. The safest and simplest way to stop your equipment is to release the joystick. This will bring the wheelchair to a controlled stop. In the event of a power supply fault, the brakes are operated automatically.

When you need to push the motorised vehicle by hand, if it breaks down or in an emergency, the motors must be disengaged.



Disengage the power unit in a single movement and so restore conventional use of the wheelchair



- ① Disengage the left handle and bring it slightly forward.
- ② Disengage and bring the right handle against the seat back.

## SERVICING AND MAINTENANCE

FOR OPTIMUM USE OF THE PRODUCT,  
find our explanatory videos on [The Benoit Systemes YouTube channel](#)

### ⚠ CAUTION

It is important to follow the servicing and maintenance programme for the equipment to keep it in good condition.

### ⚠ WARNING

If you're not sure you can service your equipment yourself, contact your approved dealer.

## SERVICING THE EQUIPMENT

- Before undertaking any cleaning, ensure the equipment is turned off.
- Clean the rollers and their housing regularly with a screwdriver.
- Once a week, run a vacuum cleaner around the motor, to remove all accumulated dust.
- Clean the entire power unit with a damp (not wet) cloth.
- Clean the electrical components with clean, dry cloths that are neither wet nor damp.
- Clean the control unit using a cloth moistened with dilute detergent.
- Never use abrasive or alcohol-based detergents.
- Remember to wipe the equipment if it is wet or damp, after having cleaned it or if it has picked up water or moisture while you were using it.

### ⚠ WARNING

Never wash your wheelchair using a hose or pressure washer. Only use common household cleaning and disinfection products.

### ⚠ WARNING

#### Inflate the tyres to 8 bar

Check tyre pressure regularly to ensure that it is always as close as possible to the recommended value. Keep your wheelchair fitted with good quality tyres. Contact your dealer if you cannot find the same tyres as those we recommend (SCHWALBE Marathon Plus or PRIMO Sentinel).

Never replace the pneumatic tyres with solid tyres.

A video is available on the Benoit Systemes YouTube channel under the name "[Les pneus](#)".

## PERFORMANCE CHECKS

The user should regularly check the condition of the equipment to ensure it is used safely. After having cleaned or repaired the vehicle, you must always check it is working correctly before using it.

- Turn on the controller – Do the indicator lights flash? If they do, this means there is a problem in the electronic system.
- Test the braking system on a flat surface with clear space of at least 1 m around the wheelchair: connect the control unit, check that the battery indicator remains lit or flashes slowly; after a second, push the joystick gently forward until you hear the parking brakes activate (it is possible that the vehicle will move forward), then immediately release the joystick.

- Repeat the test a further three times, pushing the joystick gently back, left and right.
- Activate all the electrical options, including the audible warning, to confirm they are working correctly.
- Use the vehicle in all driving modes to confirm that it operates as before.

### CAUTION

If in doubt about the performance of your vehicle, contact your approved dealer.

It is recommended that the items shown in the table are inspected at the stated intervals. Your approved dealer should repair or replace loose, worn, distorted or damaged parts before using your vehicle.

Servicing and inspection programme	Daily*	Monthly	Quarterly	Annually
Check the battery charge indicator and the charger	●			
Check that the joystick on the control unit is neither distorted nor damaged	●			
Check that all the parts and devices are firmly attached	●			
Test the braking system	●			
Inspect the condition of the tyres and wheel fastenings	●			
Check that the cables and connectors are in good condition, are not tangled and are not in the way.	●			
Inspect the condition of the seat you use		●		
Inspect all the bolts, nuts and fastenings to confirm they are not damaged or loose.		●		
Check that the battery terminals are tightened			●	
Perform a full inspection, safety check and service by a Benoit Systemes approved dealer				●

\* Every day, before each use

Correct servicing will improve your vehicle's performance and extend its service life, as well as reducing the risk of an accident.

## WASTE MANAGEMENT

- The equipment's packaging goes to recycled materials.
- The metal parts go to old metal recycling.
- The plastic parts go to plastic recycling.
- The electrical parts and printed circuits go to electronic waste.
- Worn out or damaged batteries are taken back by your medical equipment shop or by Benoit Systemes.
- Waste should be managed in accordance with the appropriate national legal requirements in force.
- Ask your local authority for information about suitable local firms.

## TROUBLESHOOTING

## The joystick dashboard is not lit or flashes

Possible causes	Solutions
Battery incorrectly locked in place	Remove the battery slightly and re-engage it
Joystick wire poorly connected	Check the connection
Red connectors damaged or loose	Check the connectors are in good condition and the contacts are in the correct position
Battery fault	Contact the dealer
Fault in a component of the power add-on	Count the number of LEDs flashing and contact your dealer
Power add-on was turned on when the joystick was not in the neutral position	Switch off and turn on again

## The dashboard lights up normally but the power add-on doesn't work

Possible causes	Solutions
The power add-on is in the disengaged position	Engage the two handles
The power setting is too low	Increase the power

## Rapid wear of the tyre treads

Possible causes	Solutions
Poor quality tyres	Fit recommended tyres
Tyres under-inflated	Inflate the tyres to 8 bar
Insufficient pressure of the rollers on the tyres	Adjust the pressure

## Tyre worn on the inner wall

Possible causes	Solutions
The roller cover is touching the tyre	Contact your dealer
The bracket for the wheelchair wheel is loose	Tighten this bracket correctly

## The wheelchair goes in a circle

Possible causes	Solutions
A manual brake of the wheelchair is on	Release it
A motor is faulty	Contact your dealer

## The power add-on is making noise

Possible causes	Solutions
Part of the wheelchair is touching a wheel	Visually check the condition of the wheelchair
A motor is faulty	Contact your dealer
A bearing is faulty	Contact your dealer
A roller cover is touching the tyre	Contact your dealer

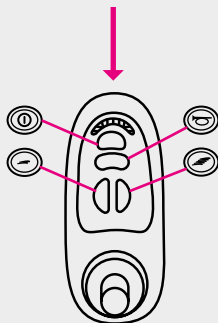
## A clutch handle is not staying engaged

Possible causes	Solutions
Incorrect adjustment of the ball joints	Contact your dealer
Distortion (following an impact for example)	Contact your dealer

# JOYSTICK FAULT CODE INDICATOR

## LARGE JOYSTICK FAULT CODE

to diagnose the fault look **HERE**



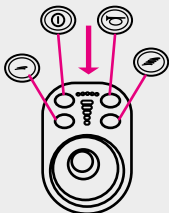
1 speed LED



1 LED	●	Low battery voltage
2 LED	● ●	Left motor faulty
3 LED	● ● ●	Left motor wiring fault
4 LED	● ● ● ●	Right motor faulty
5 LED	● ● ● ● ●	Right engine wiring fault
6 LED	● ● ● ● ● ●	Charger connected
7 LED	● ● ● ● ● ● ●	Possible fault in joystick
8 LED	● ● ● ● ● ● ● ●	Possible fault in control system
9 LED	● ● ● ● ● ● ● ● ●	Possible brake fault
10 LED	● ● ● ● ● ● ● ● ● ●	Battery voltage high
7 LED + speed		Communications fault

## SMALL JOYSTICK FAULT CODE

to diagnose the fault, look **flashing** **HERE**



2 times	● ● ● ● ● ●	Left motor faulty
3 times	● ● ● ● ● ●	Problem in left motor wiring
4 times	● ● ● ● ● ●	Right motor faulty
5 times	● ● ● ● ● ●	Problem in right motor wiring
7 times	● ● ● ● ● ● ●	Possible joystick problem
8 times	● ● ● ● ● ● ●	Possible problem in control system
9 times	● ● ● ● ● ● ●	Possible brake problem

This diagnosis is only for guidance. Once the fault code is seen, please contact your Benoit Systemes approved dealer or our after-sales team : [sav@benoitssystemes.com](mailto:sav@benoitssystemes.com).

# TRANSPORT AND STORAGE

## TRANSPORT

### By air

18 Ah and 19 Ah lithium-ion batteries are not compatible with air transport. Only 11.4 Ah lithium-ion battery meets the requirements of the current IATA regulations. If you have to travel by air, ensure you contact the airline. The battery certificate can be viewed on our website on the documentation page.

Recharging batteries in foreign countries:

- Ensure you have an adaptor to fit between the wall socket and the plug on your charger. Find out about the type you require.

### ⚠ CAUTION

Before making your journey, contact the carrier. The organiser will provide information about any specific conditions/instructions.

Check that the removable parts of the equipment are securely attached or separately packed and labelled to avoid them being mislaid during loading and unloading.

Take this manual with you.

### By car

For safety reasons, the power add-on will be put in the boot of the car. Benoit Systemes supplies a car charger as an option.

### ⚠ CAUTION

In case of accidents and/or damage on the wheelchair arising from failure to follow these instructions, and/or current requirements in your country, or that are attributed to the use of an unauthorised or unsuitable safety system, Benoit Systemes and its representatives refuses to accept any liability.

## STORAGE

If the motorised vehicle is not used for a prolonged period (more than a week), you should prepare it for storage in order to extend its service life and the battery lifetime.

Follow these instructions:

- Store the motorised vehicle at a temperature of 15°C and avoid extreme temperatures in order to extend the service life of the vehicle and batteries.

- The components are tested and approved for the temperature ranges below:

- \* The range of temperatures permitted for storing the motorised vehicle is between -40°C and +65°C.

- \* The range of temperatures permitted for storing the batteries is between -20°C and +50°C.

Nonetheless, to guarantee long battery life, we recommend storing them at a temperature of 15°C

- The batteries must always be fully charged before being put into storage.
- For prolonged storage, the battery rack must be connected to the supplied charger every 3 months and must be fully recharged, to guarantee the operating capacity of the equipment.
- Store them in a dry, well-ventilated environment protected from outside influences.

### ⚠ WARNING

Never store your equipment:

- Outdoors.
- In direct light (the plastic components can discolour).
- Close to a source of direct heat.
- In a damp environment.
- In a cold environment.
- With the batteries/battery units connected (even if the control unit is turned off).

### ⚠ CAUTION

After an extended storage period at low temperature (-25°C), it is possible for the power add-on to turn itself off after being turned on; this situation may persist for about 2 minutes.

By following the instructions above, you will avoid deep discharge of the batteries and extend their life.

# SAFETY AND HAZARD INSTRUCTIONS

## GENERAL SAFETY INSTRUCTIONS

### WARNING

Risk of damage to the equipment or serious, even fatal, injury if the control unit is used incorrectly.

- Undertake a test session with a healthcare professional before using a joystick.
- If you are not used to control by using a joystick, travel slowly and first familiarise yourself with the driving and directional characteristics of the wheelchair on a flat, unobstructed route.

### DANGER

Risk of damage to the equipment or serious, even fatal, injury.

- Dropping lighted cigarettes onto a padded seating system can start a fire likely to cause damage to the equipment or serious, even fatal, injuries.
- The occupants of a motorised vehicle are more particularly exposed to a risk of serious or even fatal injury associated with such fires and the resulting smoke, as they are not always able to get away from the vehicle – Do not smoke when using this vehicle.

### WARNING

Risk of damage to the equipment or serious, even fatal, injury.

- Inappropriate supervision or servicing are likely to result in damage to the equipment or serious, even fatal, injuries, following breathlessness or ingestion of parts or materials.
- It is essential for children, pets or people with physical/learning disabilities to be supervised closely.
- Don't allow children or anyone else to use your equipment.

### WARNING

Risk of injury if the equipment is used for a purpose other than that described in this manual.

- The motorised vehicle must be used in accordance with the manufacturer's instructions. It must not be used for a purpose other than that for which it is designed. Pay special attention to the safety instructions.

### WARNING

Risk of damage or injury if the vehicle is started unintentionally.

- Do NOT sit on the vehicle during the adjustment phase.
- Disconnect the power supply from the vehicle before getting onto it, getting off it or handling objects.
- Do not push the vehicle by hand when the brakes are applied and when the power supply is disconnected.
- Don't forget to reengage the brakes before putting the vehicle back into use

### WARNING

Risk of falling from the vehicle

- Do not move forward on the seat, do not lean forward and do not stretch backwards beyond the top of the seat-back, such as to reach an object.

### WARNING

Risk of injury if driving under the influence of drugs or alcohol

- Never drive if you are under the influence of drugs or alcohol. If necessary, ask for help from someone else with appropriate physical and mental abilities.

### WARNING

Risk of injury if the contact is broken while the vehicle is moving, leading to the vehicle stopping suddenly and violently

- Never operate the stop button nor disconnect a cable while the vehicle is moving, except in an emergency.
- If you have to brake in an emergency, simply let go of the joystick to stop the vehicle.

### WARNING

Risk of damage to the equipment or serious injury

- Storing or using the vehicle close to a naked flame or flammable products can result in damage to the equipment or serious injuries.
- To ensure the equipment is reliable, avoid exposing it to extreme conditions, heat or humidity.
- Never store your electric vehicle outdoors.

### CAUTION

Risk of injury if the maximum permitted load is

exceeded

- Do not exceed the maximum permitted load (refer to the Technical Specifications section).
- The electric vehicle is only designed to accommodate a single occupant with a maximum weight not exceeding the maximum permitted load for this equipment. Never use the vehicle to transport several people.

#### CAUTION

Risk of injury in the event of inappropriate handling or fall of heavy parts

- During servicing and maintenance operations or when you are lifting certain parts of the equipment, consider the weight of each component, particularly the batteries. Ensure you always adopt the correct posture and don't hesitate to ask for help.

#### CAUTION

Risk of injury caused by moving parts

- Ensure that the moving parts of the motorised vehicle, such as the wheels or joystick, do not cause injuries, particularly when children are present.

#### CAUTION

Risk of fire or fault when connecting electrical equipment

- Do not connect your motorised vehicle to any equipment that has not been explicitly permitted by Benoit Systemes. Rely on your Benoit Systemes approved dealer for all electrical installations.
- Do not use any other motorised device or accessory at the same time as power add-ons. If you wish to use another device, please remove Light Drive from the wheelchair for your own safety.

## SAFETY INFORMATION ABOUT THE ELECTRICAL SYSTEM

#### WARNING

Risk of damage to the equipment or serious, even fatal, injury.

Inappropriate use of the motorised vehicle can result in the emission of smoke or sparks, and heat may be given off.

A fire is likely to cause damage to the equipment or serious, even fatal, injuries.

- The motorised vehicle must NOT be used for a purpose other than that for which it is

designed.

- If the vehicle begins to emit smoke, sparks or heat, stop using it and have it checked IMMEDIATELY.

#### WARNING

Risk of injury or damage associated with short-circuits

The pins of electrical connectors may remain live even when the system is switched off.

- Check that the cable insulation is sound and that the connectors are correctly plugged in, so that no live parts are accessible or in contact with conductive materials.
- Insulate the pins of the connectors when they are disconnected.

#### WARNING

Risk of damage to the equipment or serious, even fatal, injury.

Corrosion of electrical components due to exposure to water or liquids can result in damage to the equipment or serious, even fatal, injuries.

- Reduce the exposure of electrical components to water and/or liquids.
- Electrical components damaged by corrosion MUST be replaced immediately.
- Motorised vehicles frequently exposed to water/liquids can require electrical components to be replaced more frequently

#### WARNING

Risk of serious, even fatal, injury

Failure to take note of these warnings can cause an electrical discharge resulting in serious or fatal injuries, or damage to the electrical system.

- The (+) battery terminal (red or brown cable depending on the model) must be connected to the red (+) power supply cable on the control box.
- The (-) battery terminal (black or blue cable depending on the model) must be connected to the black (-) power supply cable on the electronics box.
- Take care never to touch the two poles of the battery (direct contact, tools or conductive material).
- Immediately replace cables with damaged insulation, frayed cables or cut cords.

#### CAUTION

Risk of damage to the motorised vehicle

A fault in the electrical system can cause unusual behaviour.

- In the event of a fault, turn the control unit off and back on again.



- If the problem persists, disconnect or remove the battery rack.
- If in doubt or for any question, don't hesitate to contact your dealer.

## SAFETY RECOMMENDATIONS ABOUT ELECTROMAGNETIC COMPATIBILITY

Electromagnetic fields, may have an influence on the operation of the vehicle. The electronic device used in this device can also cause weak electromagnetic disturbances, however these are below the legal limit. Therefore please consider the following comments:

### WARNING

Risk of incorrect operation following electromagnetic emissions

- Do not use a portable transmitter nor communication devices while the electric vehicle is in use (radio devices or mobile telephones).
- Avoid going near powerful radio or television transmitters.
- If your vehicle should start moving by itself, or if the brakes happen to be released, turn the equipment off.
- Report to your dealer of BENOIT SYSTEMES all undesirable movements of the vehicle that occur, even the electric brakes being released.
- Do not add any electrical or electronic accessories to the appliance.

## SAFETY INFORMATION ABOUT INSTALLATION

### WARNING

Risk of damage to the equipment or serious, even fatal, injury.

Prolonged use of an electric vehicle with settings not complying with the specifications risk causing the vehicle to become unstable and causing damage to the equipment or serious, even fatal, injuries.

- Performance adjustments must only be made by healthcare professionals or people who fully understand this process and the user's capabilities.
- After adjusting the electric vehicle, ensure that it operates according to the parameters defined during the installation procedure. Otherwise, turn it off IMMEDIATELY and

re-enter the installation parameters. If the vehicle still doesn't operate, contact Benoit Systemes.

### WARNING

Risk of damage to the equipment or serious, even fatal, injury

Inadequately tightened or missing fastenings can cause the vehicle to become unstable, resulting in damage to the equipment or serious, even fatal, injuries.

- After ANY adjustment, repair or servicing and before use, ensure that all the fastenings are fitted and suitably tightened.

### CAUTION

Risk of damage to the equipment or serious injury

- When adjusting the position of the control unit, always ensure to tighten all the screws correctly.
- In the event of a problem adjusting the control unit, immediately turn off the electric vehicle's electronic system.

### CAUTION

Pinch points can arise when making adjustments  
Be careful of your fingers.

### CAUTION

Check all the cables

Damage caused to the cables of the wheelchair can cause safety problems and must be reported immediately to an approved service technician.

## SAFETY INFORMATION ABOUT DRIVING

### DANGER

Risk of damage to the equipment or serious, even fatal, injury.

- Adapt your speed to the environment in which you are travelling. To control handling of the equipment, it is better to start on flat ground.
- Always ensure you can be seen from afar, especially if you use your motorised wheelchair at night.
- Pay close attention to traffic on the road.
- Don't forget that car or lorry drivers do not expect to see a manual wheelchair running at a speed greater than that achieved by propulsion. If there is the least danger, don't take the risk of crossing the road.
- Remember that the motorised vehicle can stop operating suddenly if you completely

discharge the battery: we recommend using a lap seat belt when you use the power add-on.

- Never approach steps or ditches at maximum speed.

Any malfunction of the control unit is liable to result in unexpected/erratic movements leading to damage to the equipment or serious, even fatal, injuries.

- If an unexpected/erratic movement occurs, stop using the motorised vehicle immediately and contact a qualified technician.
- It is important that the joystick is replaced if it is damaged or weakened, as this could damage the control unit.

### WARNING

Risk of injury if the motorised vehicle tips over.

- Refer to the technical specifications (maximum safe slope)
- As far as possible, avoid driving on slippery, icy or oily surfaces when there is a risk of losing control of the vehicle. If you cannot avoid travelling over such surfaces, drive slowly and with the greatest care.
- Ensure that there are no objects in your path likely to damage the mechanism of your vehicle.
- Do not cross an obstacle while moving forward.
- Avoid passing over thresholds more than 10 cm high while moving forward so as not to threaten your stability, and remember to arrange for a slope, if necessary.
- When you cross obstacles, always stay within the maximum obstacle height (refer to the Technical Specifications section).
- Never try to go down a series of steps with your motorised vehicle.
- Avoid making sudden movements of the control unit or sudden changes of direction while the motorised vehicle is moving.
- Never use the motorised vehicle to transport several people.
- Do not exceed the maximum total permitted load (refer to the Technical Specifications section).
- Remember that the motorised vehicle brakes or accelerates when you change the speed of travel while the vehicle is moving.
- The anti-tip must be used.

### WARNING

Risk of injury if you collide with an obstacle while passing through narrow passageways.

- Pass through narrow passageways at the slowest speed of travel and with the greatest care.

## SAFETY INFORMATION ABOUT SERVICING AND MAINTENANCE

### DANGER

Risk of damage to the equipment or serious, even fatal, injury.

Incorrect repair and/or maintenance of this motorised vehicle by users/carers or by unqualified technicians are liable to result in damage to the equipment or serious, even fatal, injuries.

- Do NOT undertake ANY maintenance task other than those described in this user manual. These repairs and/or servicing **MUST** be carried out by a qualified technician. Contact a Benoit Systemes dealer or technician.

### CAUTION

Risk of accident if incorrect maintenance performed

- For safety reasons and to avoid accidents related to passive wear, it is vital that this motorised vehicle should be checked once a year under normal use conditions.

## SAFETY INFORMATION ABOUT MODIFICATIONS MADE TO THE EQUIPMENT

### CAUTION

Using unapproved components or accessories is liable to result in injuries or to damage the motorised vehicle.

Using accessories and parts not approved by Benoit Systemes may alter the stability of the motorised vehicle increase the risk of it tipping over.

- Use only accessories and parts approved by Benoit Systemes for this equipment.
- Electrical and electronic components not approved by Benoit Systemes for this motorised vehicle are liable to cause fires and electromagnetic damage.
- Use only electrical and electronic components approved by Benoit Systemes for this equipment.
- Ensure you always quote the serial number of

the equipment when you order spare parts.

Batteries not approved by Benoit Systemes for this motorised vehicle are liable to cause chemical burns.

- Use only batteries approved by Benoit Systemes for this equipment.

### Free wheel mode

- The free wheel mode is designed to manoeuvre the vehicle by hand, ideally over short distances and on flat ground. If necessary, the drive can be disengaged by a third party to secure the vehicle and prevent it from rolling away accidentally<sup>1</sup>.

## SAFETY INFORMATION ABOUT USING THE BATTERY AND CHARGER

**Only use original batteries. We decline all liability for damage caused by using other batteries not supplied by Benoit Systemes.**

### WARNING

Risk of explosion and destruction of batteries if the wrong charger is used.

- Only use the charger supplied by Benoit Systemes.
- Disconnect the charger once the battery is fully charged.

### WARNING

Risk of injury by electrocution and destruction of the charger if it is wet.

- The charger is designed for indoor use only and must be protected against moisture.
- Always charge in a dry environment. Do not expose the power add-on with the battery rack fitted to moisture (water, rain, snow) during charging. Never charge the battery in rooms exposed to moisture.
- To avoid overheating, the charger should be placed in a well-ventilated place where air can circulate and should not be covered.
- If condensation occurs, you should wait for the condensation to evaporate to use the charger.
- Do not use the charger plug and/or mains plug when they are wet or dirty. Clean the plugs with a dry cloth before plugging them in.

### WARNING

Risk of injury by short-circuit and electrocution if the charger is damaged.

- Do not use the charger if it has suffered an impact or if it is damaged. Contact your Benoit Systemes approved dealer.
- Do not dismantle and do not modify the charger.
- The charger must not be used by young children.
- Place the charger safely in a stable position on a flat surface.
- Protect the mains cable and charging cable to prevent someone treading on or tripping over them.
- When charging is finished, first ensure the charger plug is removed from the socket and then remove the charging plug from the battery rack.

### WARNING

Risk of damage to the charger

- Never carry the charger by its mains cable or its charging cable
- Never pull on the mains cable to unplug the charger.

### WARNING

Risk of electrical discharge and damage to the batteries.

- NEVER recharge the batteries by connecting the cables directly to the battery terminals.

### WARNING

Risk of fire and injury by electrocution if used incorrectly

- Only use an extension lead if it is absolutely essential. If so, first ensure that it is on perfect condition.
- Never charge the battery rack alongside or near flammable liquids or gases.
- Keep the battery rack away from fire.

### WARNING

Risk of injury if the wheelchair is used while charging batteries

- Do NOT recharge the batteries and use the wheelchair at the same time.
- Do NOT remain seated in the wheelchair while charging the batteries.

**⚠ CAUTION**

Risk of damage to the batteries

- Check the battery charge indicator. Put the batteries on charge when the battery charge indicator shows a low charge level. The discharge rate of the batteries depends on many factors such as ambient temperature, ground condition, the user's weight and driving style.
- Always try to charge the batteries before the red section of the indicator lights is reached.
- To avoid damaging the batteries, ensure they are never completely discharged.
- Never charge the battery rack at temperatures below 0°C or above 40°C.
- Do not immerse the battery rack in water.
- The more a battery operates under difficult conditions, the shorter its life expectancy.
- Store the battery rack in a cool dry place, away from moisture and dust. Avoid storing the battery rack in the boot of cars parked in the sun.

**⚠ CAUTION**

- **Do not use the battery when the outside temperature is below -20°C. The battery indicator light can fluctuate in value but stabilises after 2 to 3 minutes.**
- **Never charge the battery at temperatures below zero: wait for it to get warmer after returning from a winter stroll.**

**⚠ WARNING**

Risk of injury when handling batteries.

- Do not puncture or drill into the battery.

**CE marking**

- Conformity was assessed and CE marking applied in compliance with European Regulation 2017/745/EEC and only applies to the complete product.
- CE marking is invalidated if components or accessories are replaced or added without having been approved by Benoit Systemes for this product.

**IMPORTANT INFORMATION ABOUT THE MAINTENANCE TOOLS**

- Certain maintenance tasks described in the servicing logbook that can be performed by the user without problems require the

use of appropriate tools. If you don't have these tools, we advise you not to perform these maintenance tasks. If necessary, we recommend contacting your dealer or BENOIT SYSTEMES.

**IMPORTANT LEGAL NOTICE FOR THE USER OF THIS PRODUCT**

- Incidents due to device malfunctions and resulting in serious physical injuries must be reported to the producer and to the competent authority of the Member State where the user is located.

**IN FRANCE**

- Producer: BENOIT SYSTEMES, 7 rue du Pont 21450 BILLY-LÈS-CHANCEAUX
- Competent authority : ANSM, 143 Boulevard Anatole France 93 200 SAINT-DENIS

**IN THE MEMBER STATES OF THE EUROPEAN UNION, PLEASE INFORM :**

- Your distributor
- National authorities responsible for incidents with medical devices

You will find an overview of the responsible authorities by following the link: <http://ec.europa.eu/growth/sectors/medical-devices/contacts/>

# GUARANTEE

The guarantee period for the power add-on, battery and charger is **24 months from the invoice date**. To claim against the guarantee, just make a note of the **serial number of your equipment** shown on the first page of this manual and **contact your approved dealer**.

**You can also find the serial number right under the power add-on, in the place where you slide the battery.**

## TERMS & CONDITIONS

The guarantee is only valid if the product is used under the specified conditions and for the use for which it is designed.

The guarantee may not be applied if the product requires repair or replacement for one of the following reasons:

- a) The power add-on, or one of its parts, has not been maintained according to the manufacturer's recommendations, as stated in the User Manual, or parts other than those specified for this equipment are used.
- b) The power add-on, or one of its parts, was damaged as a result of negligence, an accident or inappropriate use.
- c) The power add-on, or one of its parts, has been converted or a repair made before having notified the after-sales service department

This guarantee is limited to the free-of-charge repair or replacement of parts recognised as faulty in the manufacturer's workshops or those of its representative (including labour and carriage). This repair may be performed using new parts or standard exchange parts, depending on the assessment made by the manufacturer or its representative.

Work carried out under the guarantee does not extend the guarantee.

## LIMITS OF LIABILITY

Benoit Systemes declines all liability for damaged related to:

- Failure to comply with the user manual
- Incorrect or improper use of the equipment
- Normal wear and tear
- Inappropriate storage of the equipment
- Incorrect assembly or dismantling by the purchaser or other parties
- Technical modifications on and in the equipment
- Unauthorised modifications and/or use of spare parts not manufactured or recommended by Benoit Systemes.

## CHECKS PERFORMED

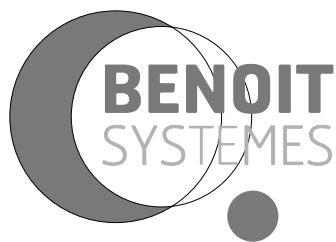
The purpose of this section is to help you maintain a log of servicing and repairs performed on your equipment.

In particular, this information can be used by your after-sales service agent; this manual should therefore be handed to the agent with the equipment at each service or repair.

The technician who performs the work will complete this section and return the manual to you. Our equipment undergoes the most rigorous testing to guarantee that it meets our requirements for comfort, safety and durability.







Ce dispositif médical est un produit de santé réglementé qui porte, au titre de cette réglementation, le marquage CE. En sa qualité de fabricant, BENOIT SYSTEMES déclare que ce produit est un dispositif de classe I, conforme aux exigences de sécurité et de performance du Règlement européen 2017/745/CEE relatif aux dispositifs médicaux.

This medical device is a regulated health product and bears the CE marking. As manufacturer, BENOIT SYSTEMES declares that this products is Class I medical devices and complies with EU Regulation 2017/745/CEE on medical devices.

Este producto sanitario es un dispositivo regulado y, como tal, lleva su correspondiente marcado CE. En su calidad de fabricante, BENOIT SYSTEMES declara que este equipo es un producto de clase I de conformidad con las exigencias de seguridad y de prestaciones del Reglamento Europeo 2017/745/CEE relativo a los productos sanitarios.

Questo dispositivo medico è un prodotto sanitario regolamentato che, in base a tali norme, reca il marchio CE. In qualità di produttore, BENOIT SYSTEMES dichiara che questo prodotto è un dispositivo di Classe I, conforme ai requisiti di sicurezza e prestazioni del Regolamento europeo 2017/745/CEE sui dispositivi medici.

Este dispositivo médico é um produto de saúde regulamentado e ostenta a marcação CE. Como fabricante, BENOIT SYSTEMES declara que este produto é um produto médico de Classe I e está em conformidade com o Regulamento da UE 2017/745/CEE sobre dispositivos médicos.

Dieses Medizinprodukt ist ein reguliertes Gesundheitsprodukt und trägt die CE-Kennzeichnung. Als Hersteller erklärt BENOIT SYSTEMES, dass dieses Produkt ein Medizinprodukt der Klasse I ist und der EU-Verordnung 2017/745/CEE über Medizinprodukte entspricht.



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