

User's manual



MADE IN
FRANCE

USER'S INFORMATION

The LIGHT ASSIST is a power add-on that help the third party push the user of the wheelchair.
This power add-on is for people who can't drive by themselves.
It is designed as an aid to your daily movements indoors, and outdoors on pavements and paths.
It is not designed to transform your wheelchair into an all-terrain or sports chair.

■ **Warning:** All modifications are prohibited unless written authorization is obtained from the manufacturer.

FIELD OF APPLICATION

The Light ASSIST is compatible with most manual wheelchairs on the market and suits people with inability to walk or with restricted mobility due to:

- Paralysis
- Limb loss (e.g. leg amputation)
- Limb problem or deformity
- Articulations contractures or injuries
- Strokes and cerebral lesions
- Neurological disorders (e.g. multiple sclerosis, Parkinson's disease)
- Illnesses like heart and circulatory defects, balance disorder or cachexia
- Elderly people with enough upper body strength
- People physically and mentally able to safely use a power-operated wheelchair

Everyone at BENOIT SYSTEMES would like you to fully enjoy your LIGHT Assist power add-on.

This user's manual will allow you to discover your power add-on and its characteristics. You will find some tips for everyday use, maintenance as well as the warranty conditions.

For any question regarding use, maintenance or safety, please contact your distributor. If you have any further questions, you can write us:

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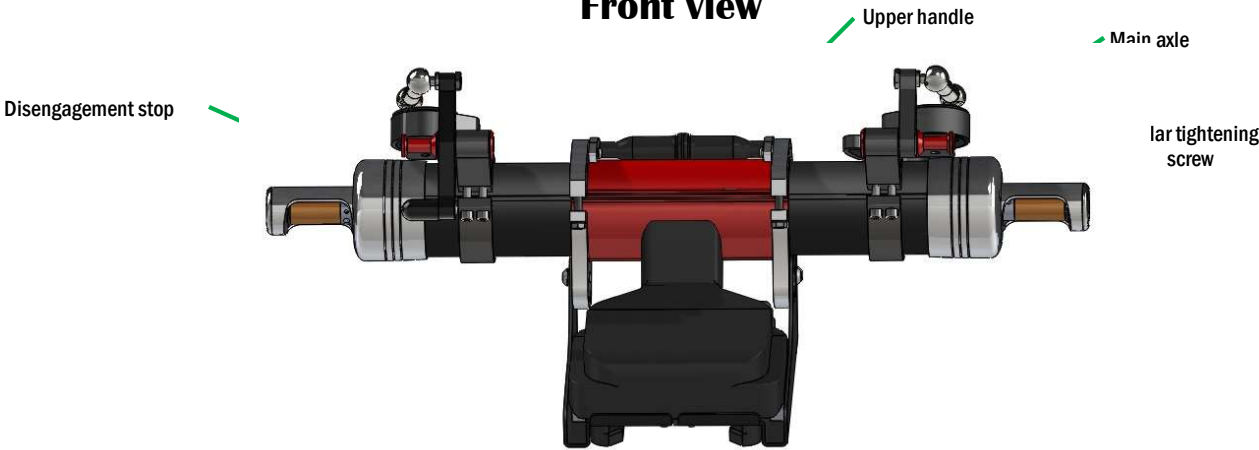


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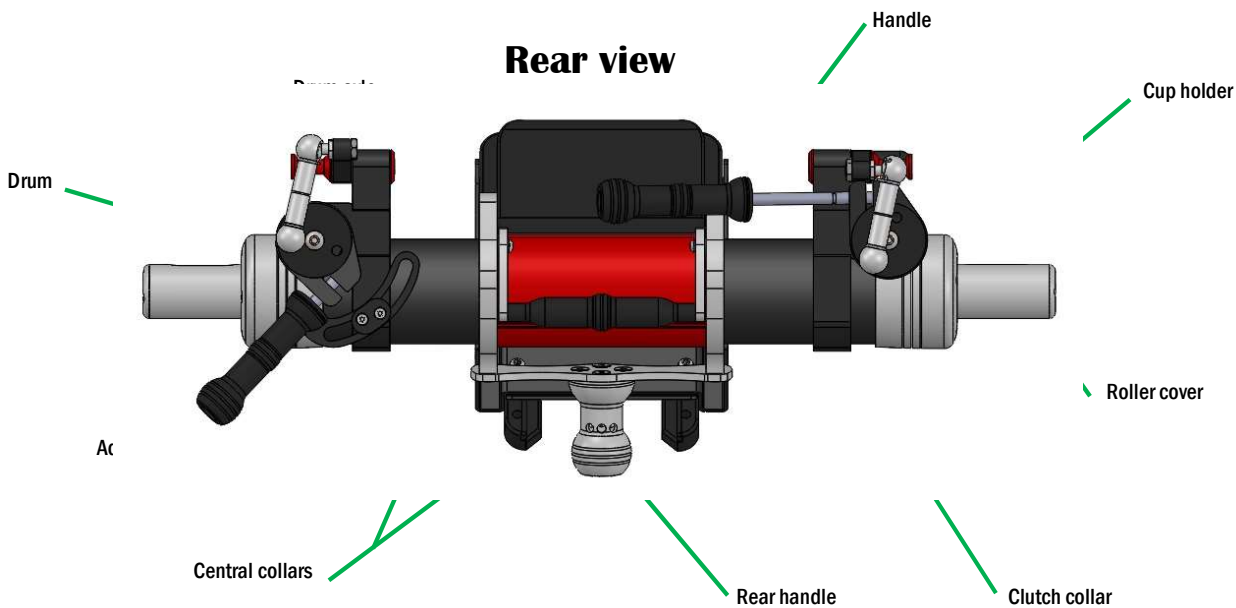
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FRONT AND REAR VIEWS

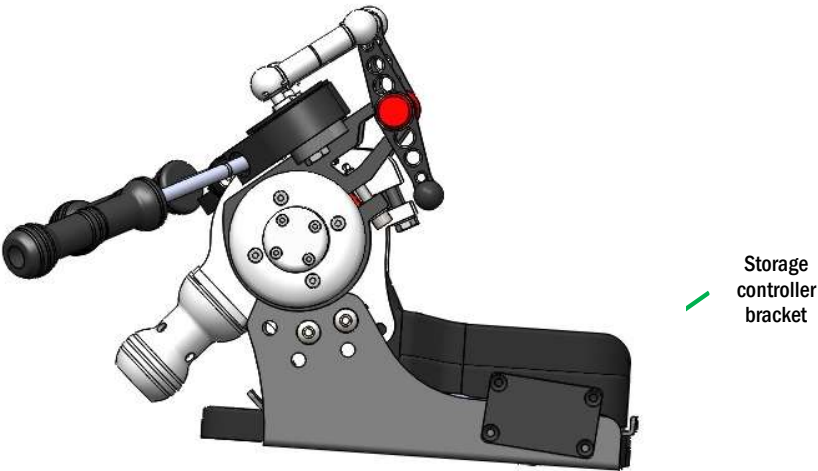
Front view



Rear view



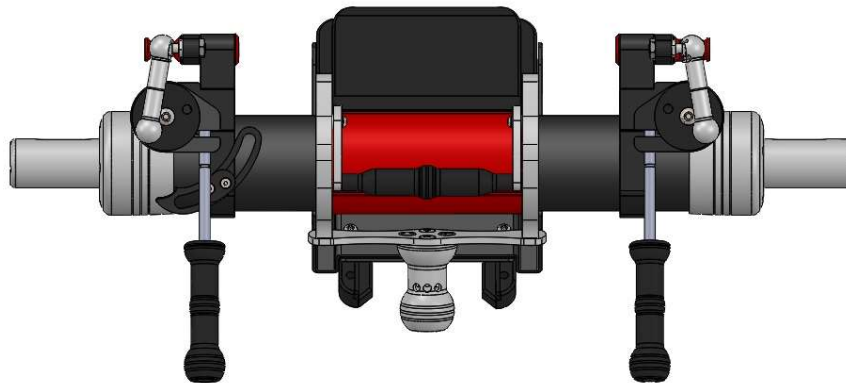
Side View



THE 3 IMPORTANT POSITIONS

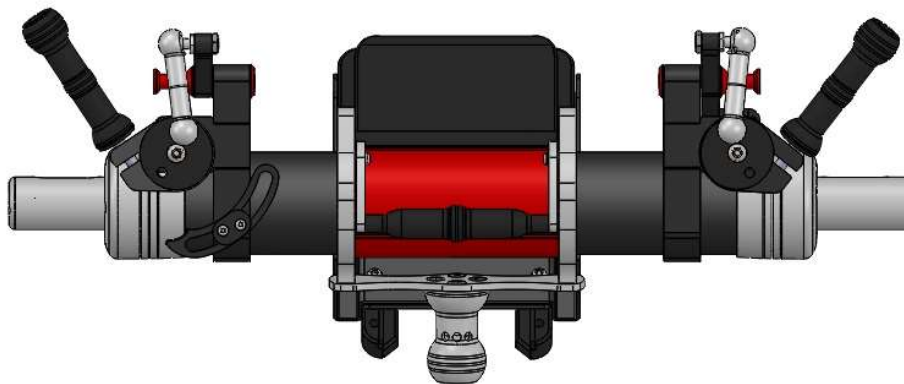
NEUTRAL POSITION

To attach and remove the power add-on



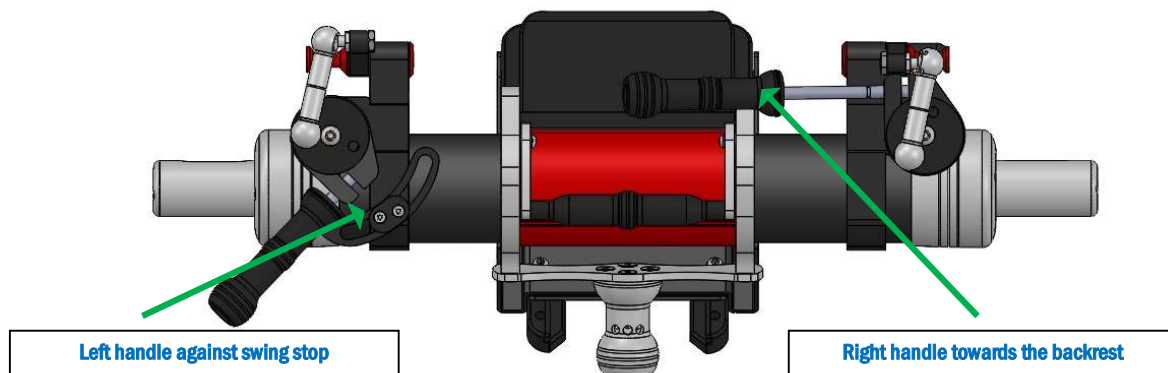
ENGAGED POSITION

To get into driving mode



DISENGAGED POSITION

Allowing to drive in manual without removing the power add-on



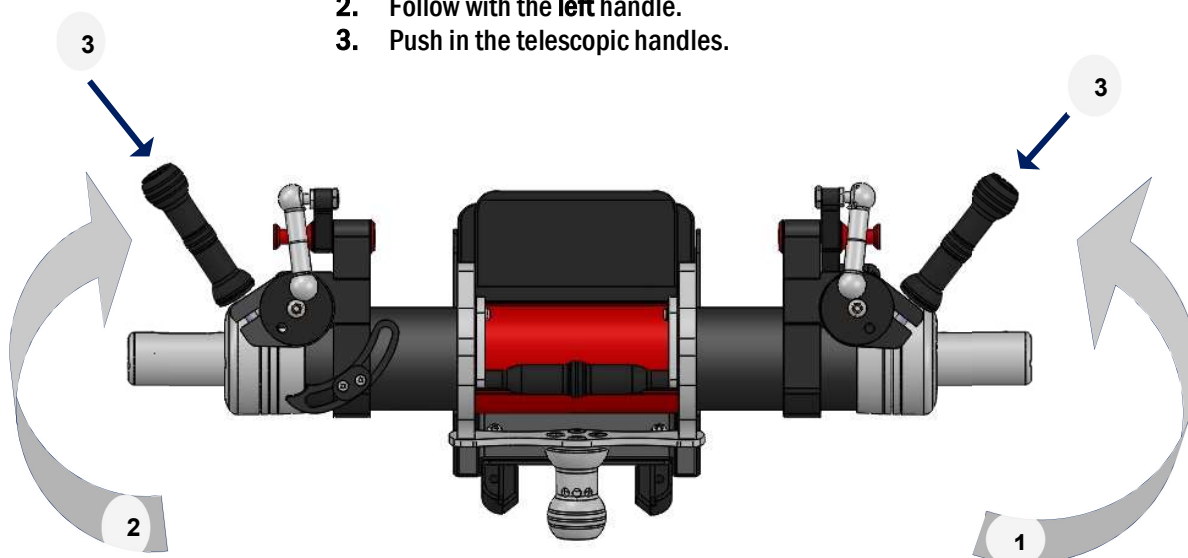
HOW TO ENGAGE THE DESIRED POSITION

TO ENGAGE FROM NEUTRAL POSITION

To put the power add-on into drive mode

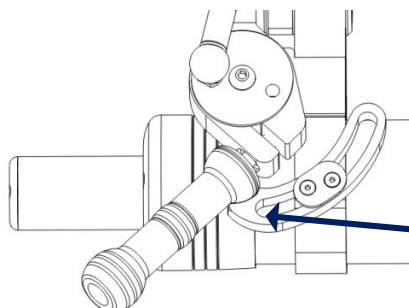
After attaching the power add-on on the hooks:

1. Fully engage the **right** handle first.
2. Follow with the **left** handle.
3. Push in the telescopic handles.



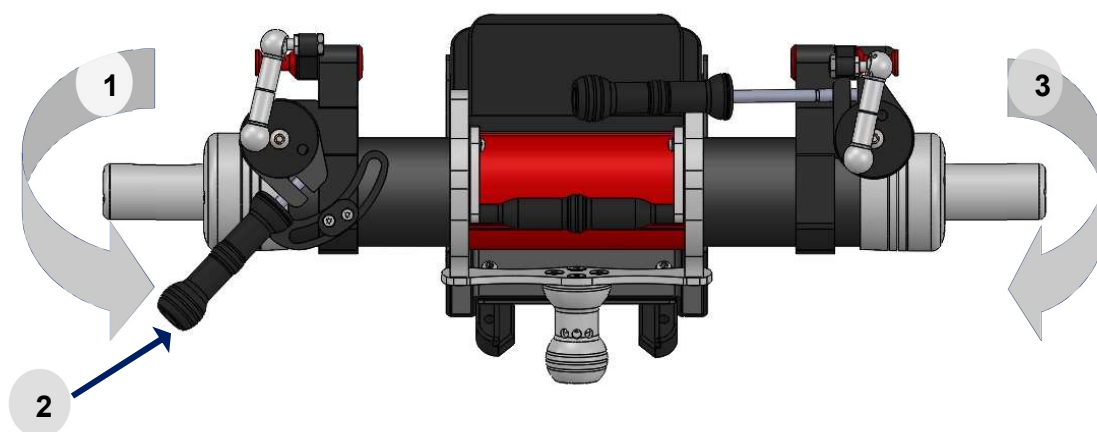
TO DISENGAGE FROM ENGAGED POSITION

Allowing to drive in manual without removing the power add-on



Open the telescopic handles

1. Disengage the **left** handle first and bring it in slightly.
2. Push the telescopic handle in so as to rest it against the stop (*see picture left*).
3. Fully disengage the right handle against the backrest.

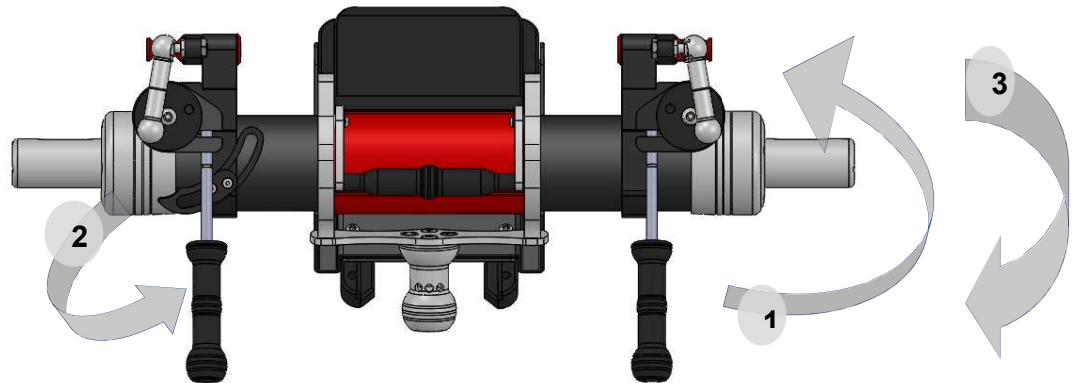


FROM DISENGAGE TO NEUTRAL POSITION

To remove the power add-on

First remove anti-tip foot and battery

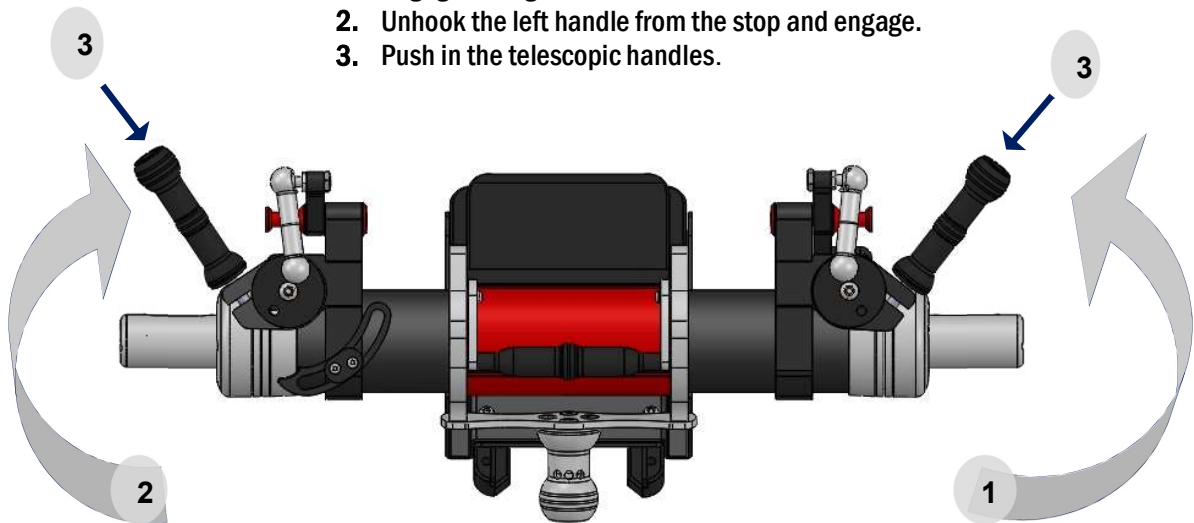
1. Engage the right handle.
2. Unhook the left handle from the stop and place in neutral position.
3. Place the right handle in neutral.



FROM DISENGAGED TO ENGAGED

To get into drive mode from free wheel mode

1. Engage the right handle.
2. Unhook the left handle from the stop and engage.
3. Push in the telescopic handles.

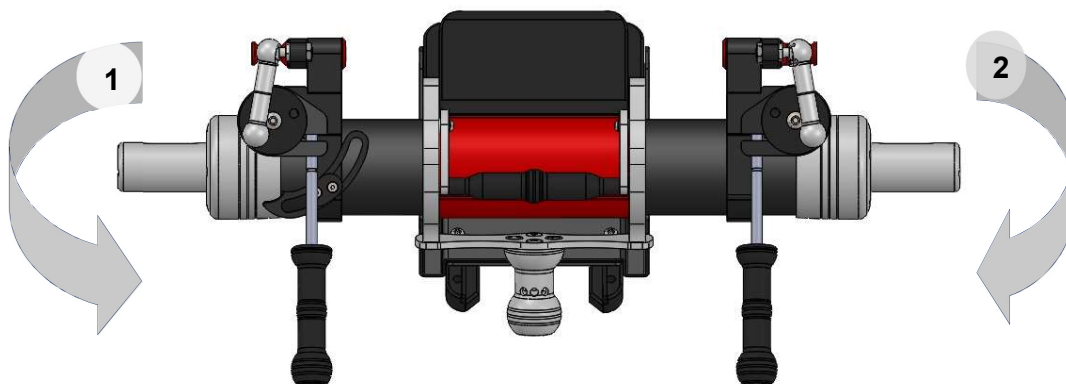


FROM ENGAGED TO NEUTRAL POSITION

To remove the power pack after use

Remove anti tip foot and battery.
Open the telescopic handles.

1. First place the **left** handle in neutral.
2. Follow with the right.



ATTACHING THE LIGHT ASSIST

Your wheelchair is now equipped with bars and hooks to allow you to attach your power add-on instantly.



The motor



Picture 1



Picture 2



Picture 3

In order to place the motor onto the hooks, the telescopic handles need to be pointing to the rear in neutral position. You can attach the power add-on whether the wheelchair is occupied or not.

- Hold the motor with the upper handle (see pictures 1 and 2) and position the main axles correctly onto the hooks (picture 3).



- Make sure the red parts are properly aligned

- Extend the telescopic handles fully to gain more force



- Engage the telescopic handles, right side **first**.
- Slide down the handles after.

Setting up the battery

- Lithium Battery 13Ah : 2 x 6,5Ah

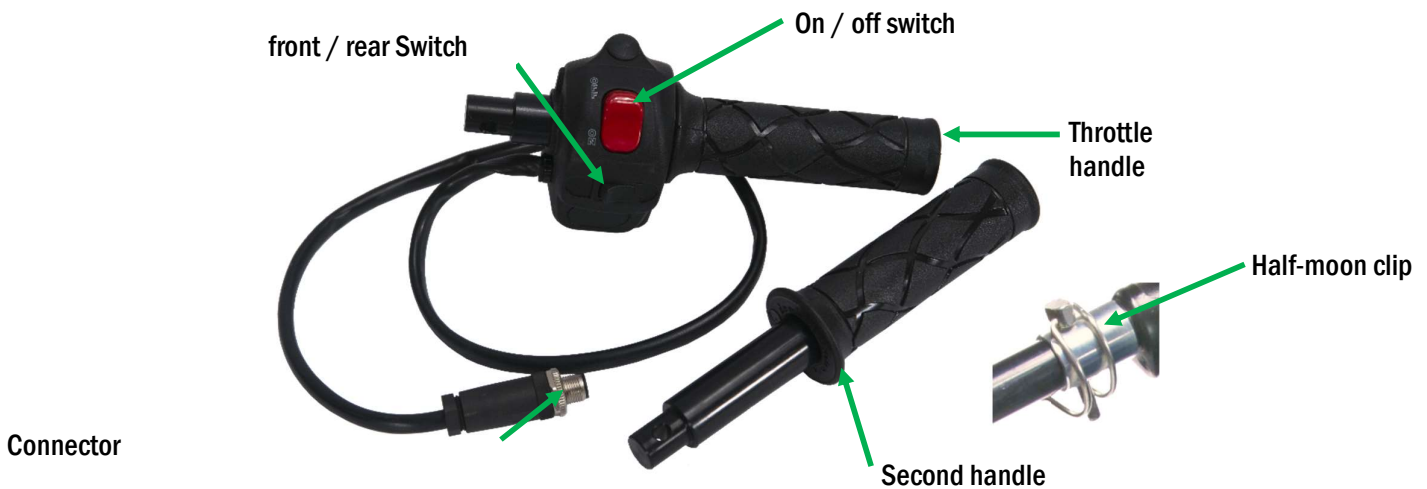


- Take the battery rack and line it up with the battery rack slide.



- Gently push it and let it slide into position. You should hear a click as the connectors slot together.

The throttle handle



The speed

Adjust the speed of the Light Assist using the throttle handle. Turn slowly until you reach the desired speed. For the ride to be pleasant, the third person adjusts the speed to its own pace.

The second handle

The second handle is used to extend the wheelchair handle to make both handles of the same length. The handful can be exchanged if the third party is right-handed or left-handed.

REMOVING THE LIGHT ASSIST

- Remove the anti-tip foot.
- Remove the battery rack by pulling on the handle.
- Remove the throttle handle and the handle.
- Point the telescopic handles towards the rear in **neutral position**.
- Grab the Light Assist with the upper handle. Push forwards to disengage the hooks and lift it up.

LIGHT ASSIST COMPONENTS VIEW



Remark: When asking too much from the power add-on, a safety power cut can occur. Your motors will stop. You will need to wait for two minutes to power on the unit again.

BATTERY



BENOIT SYSTEMES power add-ons are delivered with **Lithium Iron Phosphate batteries (LiFePo4)** of 2 x 156Wh. These comply with IATA regulations for air travel. The main advantages of these batteries are:

- **Increased battery life:** around 5 times higher than a classic lead battery.
 - **Increased charging cycles:** These batteries can be charged around 1500 times. This will allow around 5 years of utility. They can be recharged without being completely discharged. **It is therefore recommended to charge after each use.** This method preserves the life of the battery and ensures you maximum autonomy for your next outing.
 - **Increased charging time:** these batteries accept higher intensities which allow higher power output and less charging time.
- **Battery Management System (BMS):** They can be fully discharged (100%) without risks or lifetime decrease. They can be recharged at any time.
 - **Ecological:** LiFePo4 batteries do not contain any hazardous or toxic materials. They are harmless to human health or the environment.
 - **No risk of fire or explosion.**

Technical data:

Lithium battery (LiFePo4) 2 x 6,5Ah-24v 2 x 156Wh	Weight 11 lbs (5 kg)	Autonomy* 12 to 16 km (7,4 to 9,9 mph)	Charging time 8 hours when empty	Lifetime 1500 cycles (around 5 years)
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* Autonomy can vary depending on temperature, user's weight and terrain.

Recommendation: To guarantee a maximum autonomy and optimize the lifetime of our batteries, they have to be recharged after each use and stocked in a temperate environment.
Only charge with provided charger.

THE CHARGER



The supplied MASCOT 24V charger is compatible with Lead and Lithium Iron Phosphate.

Recharge the battery through the red connector on the battery.

Battery charging phases:

- blinking yellow light while empty
- then turns orange
- then orange stops blinking
- it will turn green when cycle is completed

Error modes:

• Blinking green light:

- Unplugged battery
- Faulty battery cannot be charged

• Red light:

- If battery voltage is too low the charger will stop after 30 minutes.
- If battery has not completed its cycle during its normal recharging time lapse, the charger will stop.

Rebooting the charger after an error mode:

- Unplug from sector, wait for 10 seconds and plug again.

Maintenance:

This charger is for indoor use only and has to be protected against humidity.

Keep the charger away from heat sources in a well-ventilated area. Do not cover the charger.

In option: Car charger for Lithium battery (with cigarette lighter socket)



MAINTENANCE AND ADJUSTMENTS

Tyres

Ensure that the tyres are always well inflated.

Tyres–600 to 800 kPa (87 to 116 psi)

It is better to have inflated tyres without knowing the pressure than leaving the tyres deflated.

Continue to equip your chair with good quality tyres, not nylon tyres. Please contact your Light Assist supplier if you are unable to find the same tyres as the ones installed (SCHWALBE Marathon Plus).



Never replace with solid tyres.

The castors

If your castors are very small (less than 6"/15,24cm in diameter) or very hard, you may encounter certain maneuverability problems. The increased speed does not marry well with small castors and rough terrain or holes. If after a trial period you decide you would like them changed for bigger, softer castors please ensure that the fork can be adjusted to accommodate them and that they won't touch your heels when reversing.

With bigger castors you will find that you can get over poor terrain more easily and you can get over larger obstacles.

➤ **Our tip: 6" minimum castors**

Adjustments of the pressure of the rollers on the tyres

After having used the power add-on for the first few weeks, it may become necessary to adjust the pressure of the rollers on the wheels.

This adjustment is very important, but before adjusting you must check that the pressure is correct and identical in both tyres.

Once these checks have been made, the position of the rollers on the tyres can be verified. If the pressure is too low, the power of the power add-on may be weakened and the tyres will wear out too quickly.

If the rollers slip whilst climbing a hill or on a wet surface, you need to increase the pressure of the rollers by following the steps laid out below. If the roller slips on one side more than the other you need to check that the hooks are in the correct place.

How to check that the pressure is the same on both sides:

1. Remove the battery.
2. Put the telescopic handles in neutral position.
3. Make a visual check of the position of the rollers in relation to each tyre.
4. If one of the rollers is more than 0.0393"/1 mm away from the tyre: lower the hook by the corresponding amount by following the steps below.

Conversely, too high a pressure can reduce the autonomy.

Adjustments using the hooks

This procedure can be used after a tyre change or a wheelchair main axle adjustment, to lower or higher the seating.

How to adjust hook height:

1. Firstly make a mark with a pen or pencil noting the original position of the hook.
2. Lightly loosen both screws on the hook and gently tap the hook to move it by the desired amount.
3. Tighten firmly.



Adjustments using the ball and socket joint

When the adjustment is minimal, this method is best:

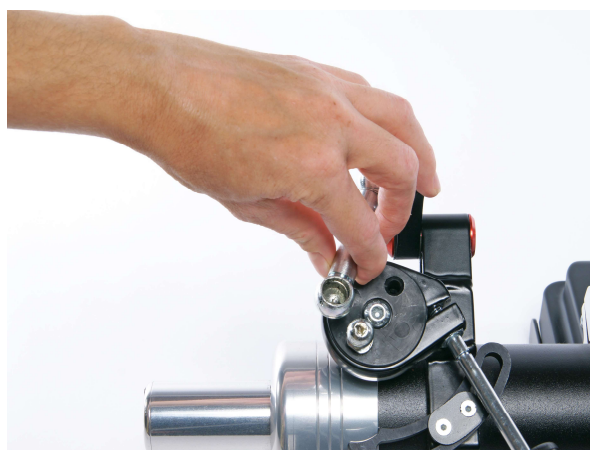
To increase the pressure:



- Remove the split pin from the ball and socket joint



- Lift up the upper part of the joint



- Turn anticlockwise once or twice
- Replace the joint
- Replace the split pin

Repeat the procedure on the other side if necessary.
Having the correct pressure avoids any slipping of the rollers whilst driving. Be aware that too much pressure can reduce autonomy.

General care and maintenance

Clean the rollers and the roller covers with a brush or a screwdriver.

Clean the power add-on with a damp cloth.

Check the tyre pressure.

Check the pressure of the rollers on the tyres.



Do not clean with high pressure cleaner nor flushed out.



TRAVELLING

By plane

Batteries used with our power add-on comply with IATA regulations:

2.3.4.7 Lithium Battery-Powered Electronic Devices

“Lithium-ion battery powered wheelchairs or other similar mobility aids for use by passengers whose mobility is restricted by either a disability, their health or age, or a temporary mobility problem (e.g. broken leg), are permitted in air transport but subject to the following conditions: a maximum of one spare battery not exceeding 300 Wh or two spares each not exceeding 160 Wh may be carried.”



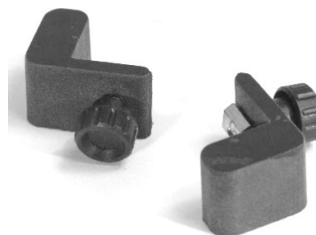
During your airline transport, you need to disconnect batteries. As below, before the security check you need to disconnect the connectors.



Once arrived and during your stay, re-connect the connectors and you will have the autonomy of the two batteries (16km)

Power add-on safety lock for the airline transport (optional)

These are wedges that come block the power add-on on the hooks, which prevents the aircrew to cause malfunction on your power add-on.



Steps to install the safety lock for the Light assist:

1. First remove the black covers:

Black covers



2. Insert the transport wedge on each hook bar as slide along the bar (do the same on the other side):

below,

Transport
wedge



3. Put the wedges against the red hooks as below:

Red hook



4. Do not forget to put back the black covers.
When your plane travel is over, you can take away the wedges or move them up onto the bars.

Recharging the batteries in other countries

There are 2 points to take into consideration

The type of plug: you will need an adapter for the charger's plug.

The voltage may be different in which case a transformer will be needed.

In the car

For security reasons, place your power add-on in the boot/trunk of the car.

➤ Our tip: It is always good to travel with a spare tyre inner tube and a pump.

TROUBLESHOOTING

Tyres wearing out quickly	
Possible causes	Solution
Bad quality tyres	Replace with good quality tyres
Tyres not enough inflated	Inflate to 500 kPa (72 psi) for 24x1 3/8 tyres and 500 to 800 kPa 24/1 tyres
Insufficient pressure of the rollers on the tyres	Adjust the pressure
Tyres wearing out on the inner side	
Possible causes	Solution
The roller cover is touching the tyre	Contact your supplier
Tyres incorrectly inserted	Re insert the tyres
The chair is going in circles	
Possible causes	Solution
One of the wheelchair brake is on	Loosen the brake
A motor is faulty	Contact your supplier
The Light Assist is making a noise	
Possible causes	Solution
Part of the chair is touching a wheel	Make a visual check that all is in its normal place
A roller bearing is faulty	Contact your supplier
One of the roller is faulty	Contact your supplier
A roller cover is touching the wheel	Contact your supplier
One of the telescopic handles won't stay in the engaged position	
Possible causes	Solution
Ball and socket joint badly adjusted	Contact your supplier
The system is deformed due to bad handling or dropping	Contact your supplier
No power from the battery	
Possible causes	Solution
Flat battery	Recharge it
Charger malfunction	Contact your supplier
Faulty connection	Check all the connections
Faulty fuse	Change the fuse
Battery is broken	Contact your supplier. Battery replacement required.

AFTER SALES CARE

WARRANTY

Duration:

Our power packs have a warranty of 24 months. (EU regulation)

Conditions:

The warranty is applicable, provided that the given specifications and good practice are followed.

The warranty is not applicable if the power add-on needs repair or parts replacement for one of the following reasons:

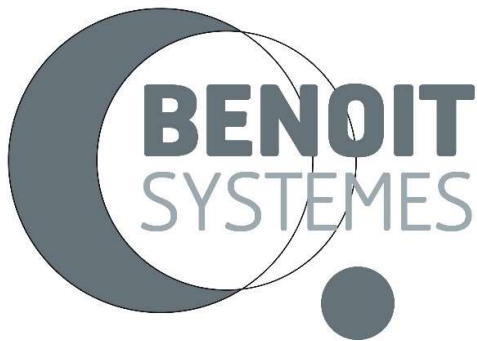
- a) The power add-on or one of its parts has not been cared for following the manufacturer's recommendations, as written in the user's manual, or repaired using aftermarket spares.
- b) The power add-on or one of its parts has been damaged due to negligence, accident or inadequate utilization.
- c) The power add-on or one of its parts has been modified or repaired by unauthorized after sales.

GENERAL SAFETY INSTRUCTIONS AND HANDLING TIPS

- Make sure to be visible from far away, especially if you use the power add-on at night.
- Pay close attention to traffic.
- Do not let children or anyone else use your wheelchair.
- If battery is fully discharged, the wheelchair can stop brutally. It is recommended to use a lap belt.
- Keep in mind that vehicles drivers don't expect to see a manual wheelchair driving faster than with manual propulsion. In case of a danger, do not take the risk to cross the road.
- Your wheelchair equipped with a Light Assist has been designed and tested to be used on a maximum slope of 20%.

COMPLY WITH STANDARDS





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