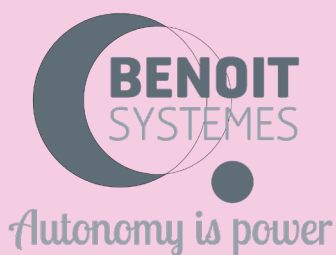


BENOIT SYSTEMES
autonomy is power

 
MADE IN FRANCE

User's manual Light Assist²



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V 18.07

USER'S INFORMATION

The Light Assist² is a power add-on that helps 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 Assist² 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 Assist² 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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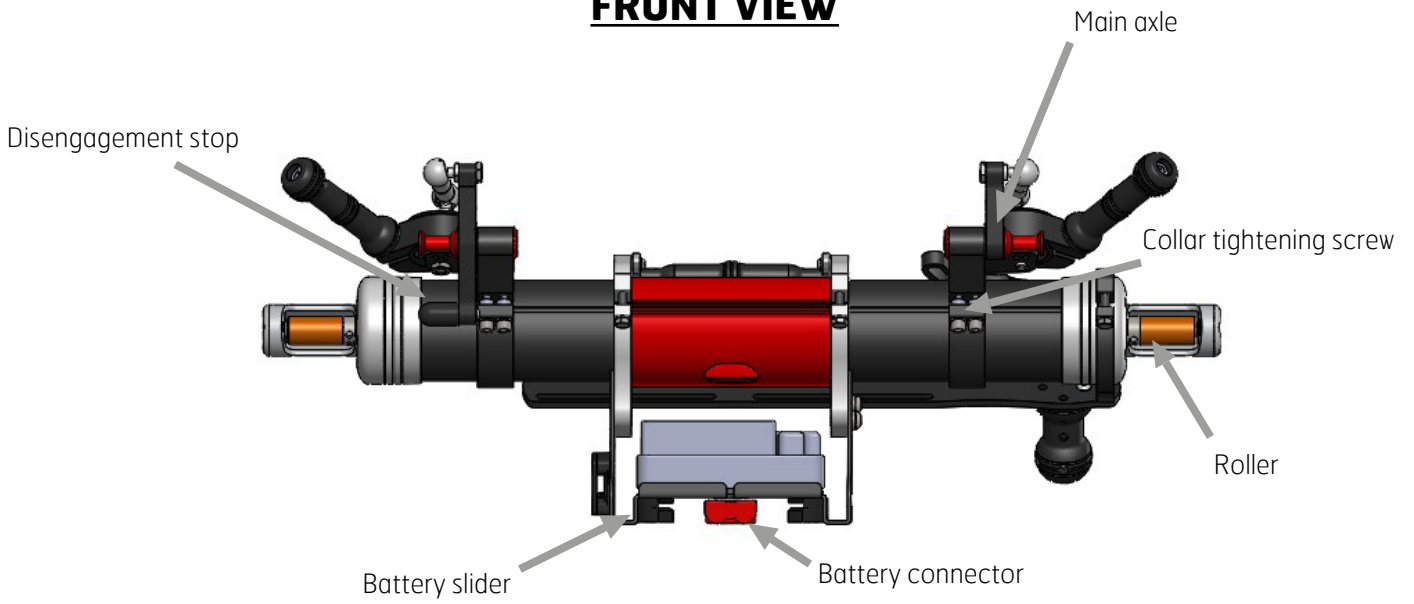


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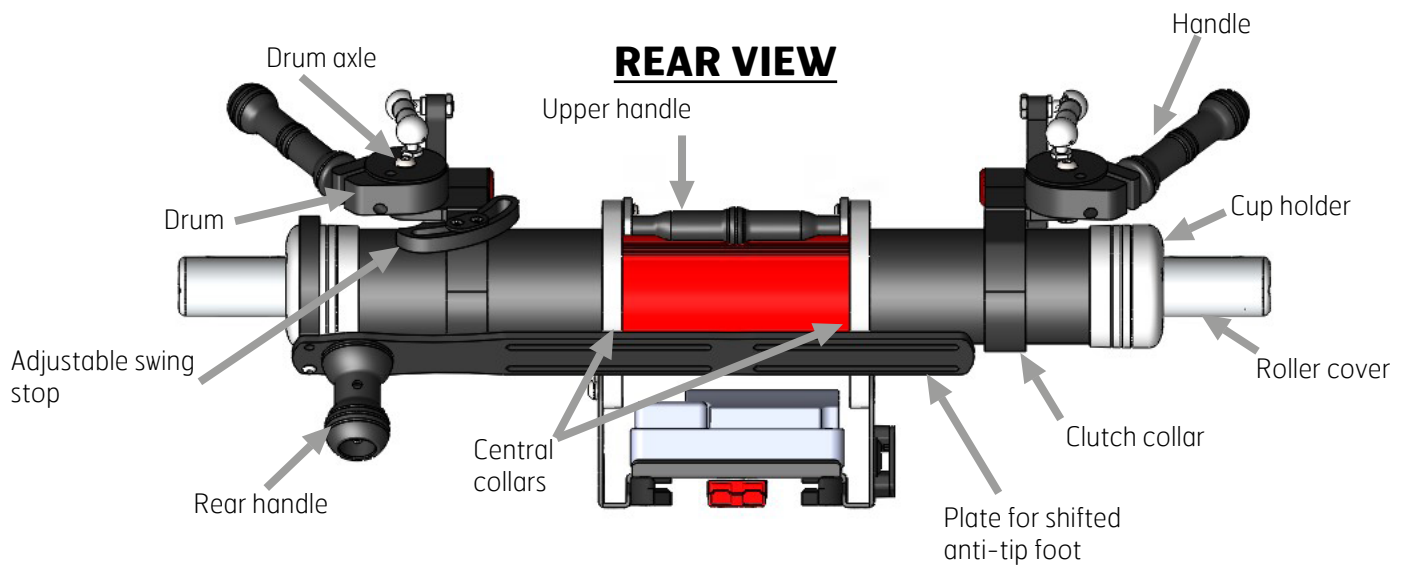
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FRONT AND REAR VIEWS

FRONT VIEW



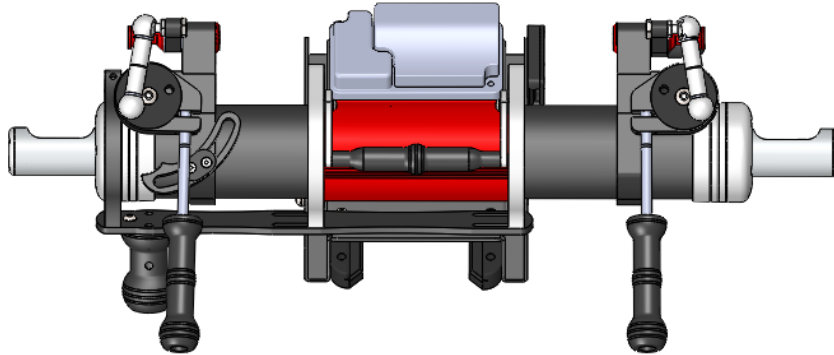
REAR VIEW



THE 3 IMPORTANT POSITIONS

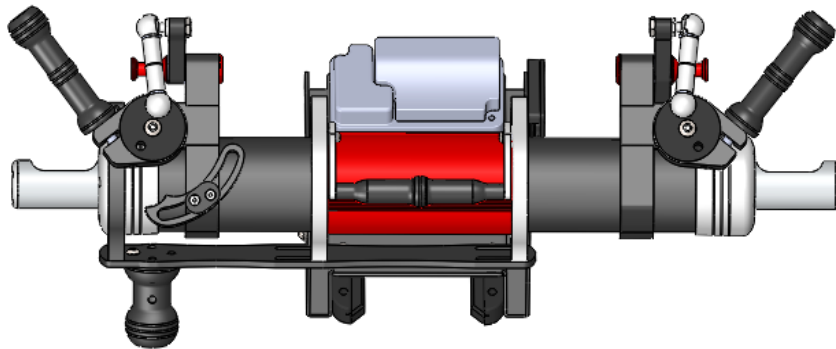
NEUTRAL POSITION

To attach and remove the power add-on



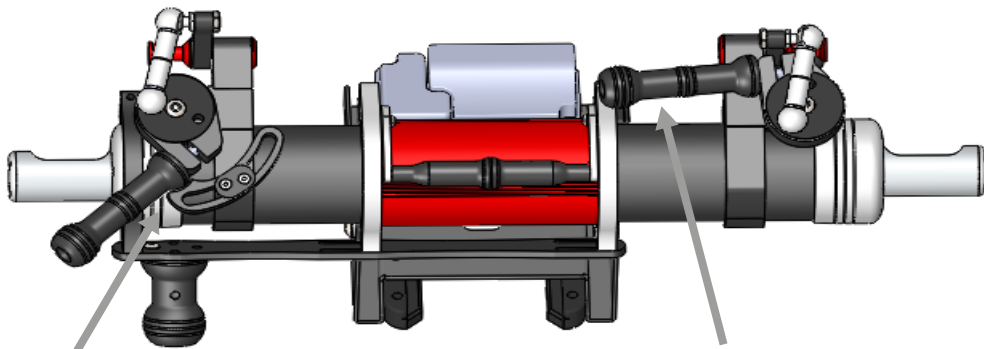
ENGAGED POSITION

To get into driving mode



DISENGAGED POSITION

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



Left handle against swing stop

Right handle towards the backrest

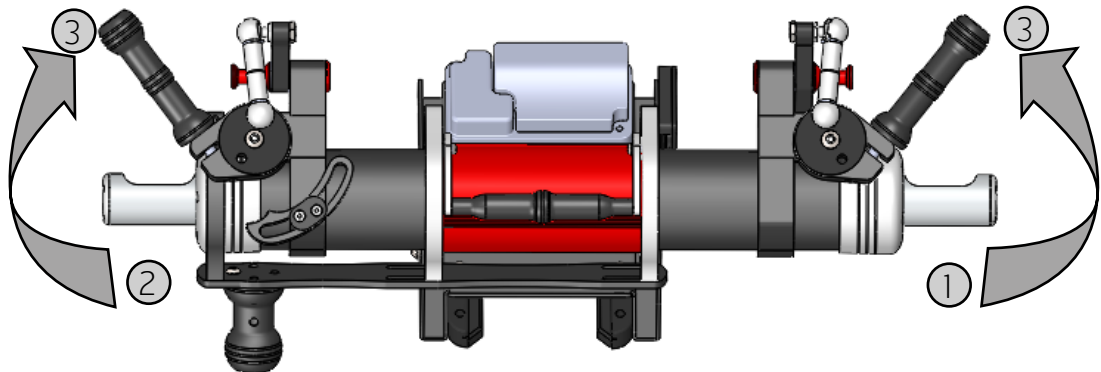
HOW TO ENGAGE THE DESIRED POSITION

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.

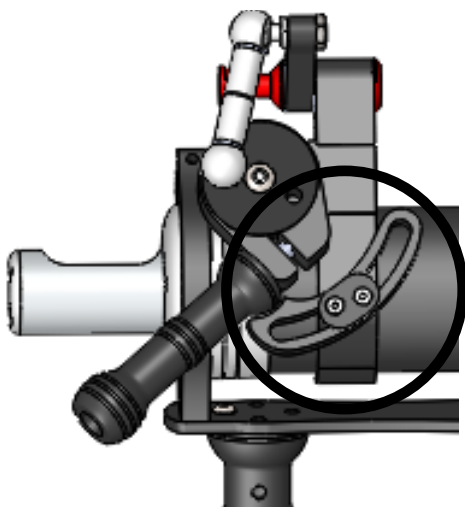


TO DISENGAGE FROM ENGAGED POSITION

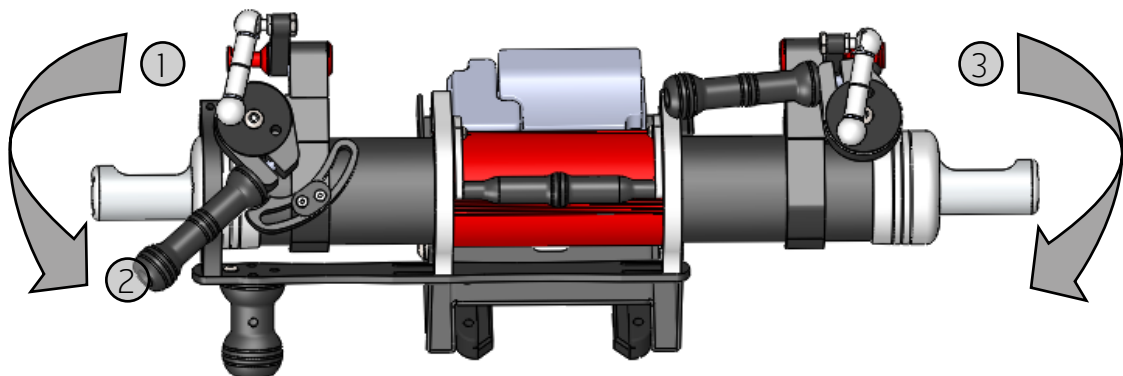
Allowing to drive in manual without removing the power add-on

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.



Anti swing stop

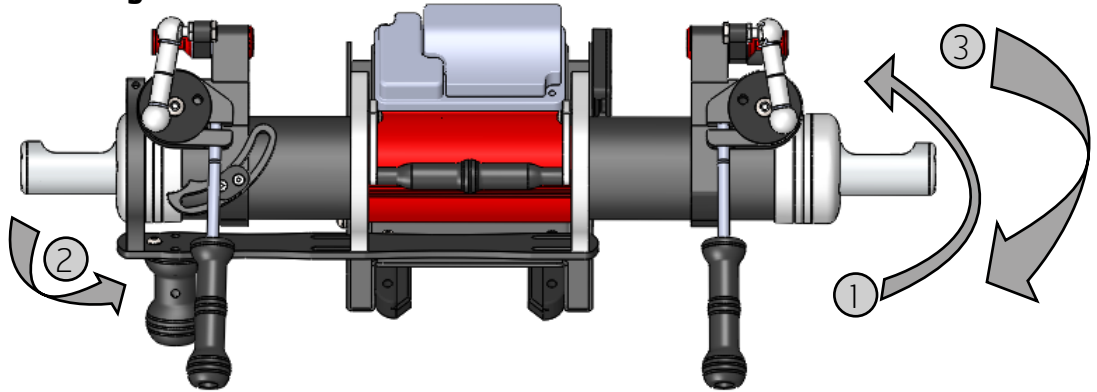


FROM DISENGAGE TO NEUTRAL POSITION

To remove the power add-on

First remove anti-tip foot and battery

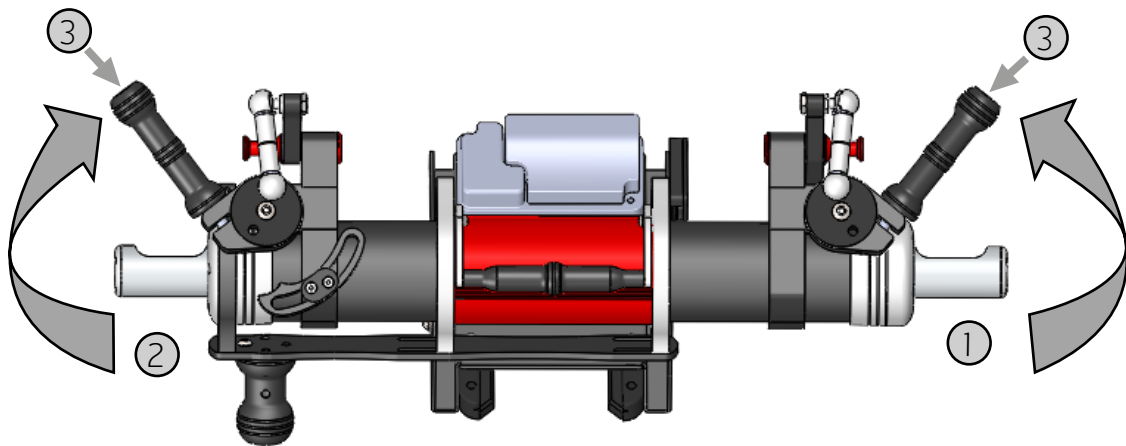
1. Engage the **right** handle.
2. Unhook the **left** handle from the stop and place in neutral position.
3. Place the **right** handle in neutral.



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.



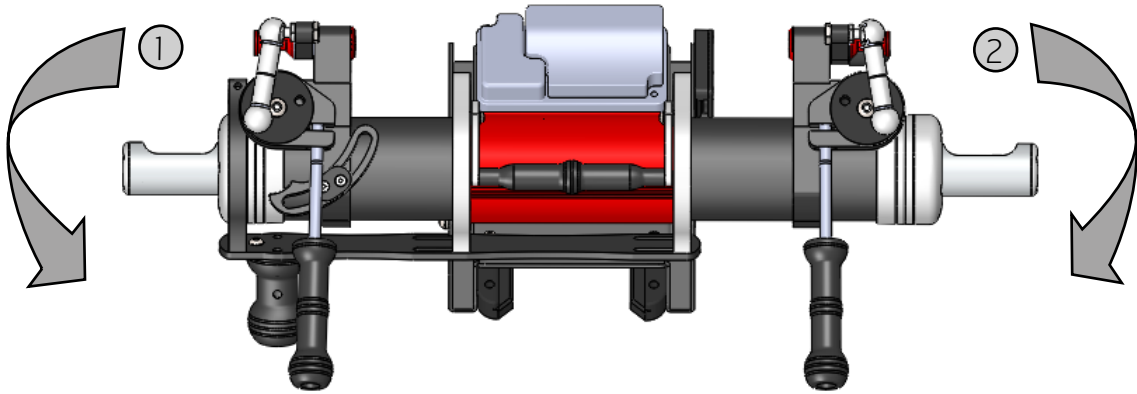
FROM ENGAGED TO NEUTRAL POSITION

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 AND REMOVING THE LIGHT ASSIST²

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



Tip: Put the brakes on the wheelchair to help attaching the Light Assist² along .

ATTACHING




PICTURE 1

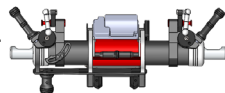


PICTURE 2



PICTURE 3

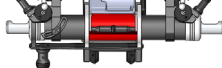
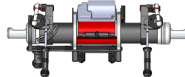
1. Both telescopic handles need to be pointing to the rear, 
2. Place the power pack on the hooks, as shown on the pictures above.
3. You can attach the power pack whether the wheelchair is occupied or not. Hold the power pack with the upper handle and position the main axes correctly on to the hooks.
4. Make sure the coloured parts are properly aligned.
5. Engage the telescopic handle right side first
6. Slide down the handles.



REMOVING THE LIGHT ASSIST



Tip: Put the brakes on the wheelchair to help removing the Light Assist² along .

1. Let the handle engaged on the wheelchair. 
2. Remove the throttle handle and the static handle.
3. Remove the battery rack by pulling on its handle.
4. Point the telescopic handles towards the rear in **neutral position**. 
5. Grab the Light Assist² with the upper handle. Push forwards to disengage the hooks and lift it up.

BATTERY



- 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.

ANTI-TIP FOOT



- Place the anti-tip foot in the rear handle .



- Lock with the pin-clip.

THE HANDLES

The LIGHT ASSIST² is equipped with two handles.

- ▶ the throttle handle
- ▶ the static handle

Both can be put on the right or left rear handle of the wheelchair and are locked with a pin clip

The throttle handle



On / off switch



Front/rear switch



Pin clip



Speed limiter



New

Speed limiter

the speed limiter prevents the LIGHT ASSIST² to exceed the maximum speed you set.

The speed

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 static handle

The static handle is used to extend the wheelchair handle to make both handles of the same length.



BATTERY

LITHIUM BATTERY OF 297,6 WH – 12 AH



BENOIT SYSTEMES power add-on are delivered with **1 Lithium battery of 297,6 Wh – 12 Ah**. This complies with IATA regulations for air travel. The main advantages of this battery are:

- **Increased battery life:** around 5 times higher than a classic lead battery.
- **Increased charging cycles:** This battery can be charged around 1000 times. This will allow around 4 years of utility. It 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.

Lithium battery	Weight	Autonomy*	Charging time	Lifetime
12 Ah 297W	3.85 kg (8,5 lbs)	12 to 16 Km (7,4 to 9,9 mph)	5-6h when empty	1500 cycles (around 5 years)

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.**

*Autonomy can vary depending on temperature, user's weight and terrain.

THE CHARGER



Two ways of recharging the battery:

1. Through the joystick
2. 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.

In option:

Car Charger for Lithium battery (with cigarette lighter socket)



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.

MAINTENANCE AND ADJUSTMENTS

Tyres

Ensure that the tyres are always well inflated.

Tyres – 6 to 8 bars (72 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 Drive 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 12cm/6" in diameter) or very hard, you may encounter certain manoeuvrability 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

Adjusting the anti-tip foot

The anti-tip foot works very well when adjusted high off the ground (approx 7 cm). The higher it is adjusted, the higher the obstacles you can pass, both forwards and backwards.

For people who do not feel safe tipping too far back, you can adjust the foot nearer the to ground.



Benoit Systemes will not be held liable in case an accident occurs with no properly installed anti-tip foot.

General care and maintenance

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

Clean the power pack 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.

Adjustments to the pressure of the rollers on the tyres

After having used the power pack 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 pack 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 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 hook

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



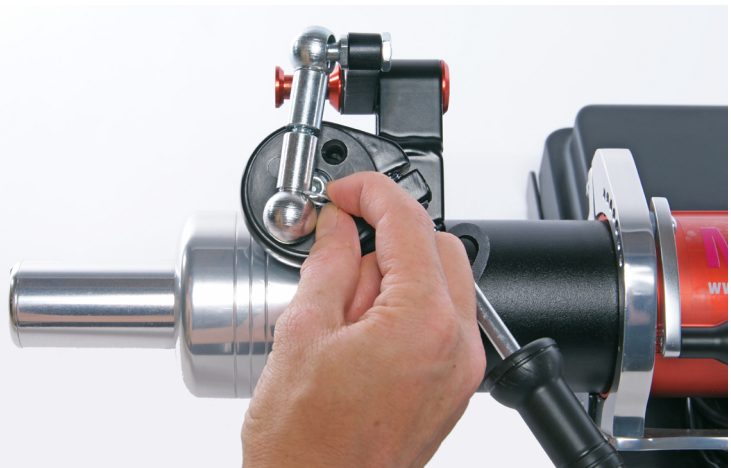
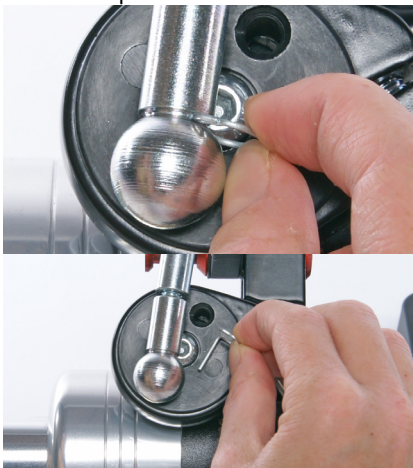
Adjustments using the ball and socket joint

When the adjustment is minimal, this method is best:

After a few week use, you may need to adjust the pressure of the roller on the type.

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.

DRIVING ADVICE

PASSING A SIDEWALK



When approaching a side walk, do not stop in front of the step and do not attempt to lift the chair.

The third person approaches the sidewalk, tilts the chair (castors on the sidewalk) and goes on driving.



DRIVING IN SMALL SPACES



When entering a small space (lift, toilets ...) there is 2 possibilities :

- Disengaged the power pack and use the free wheel mode ([See page 6 disengage from neutral position](#)).



- Use the speed limiter to set up a very low speed and drive with the throttle handle.

TROUBLESHOOTING

Tyres wearing out quickly	
Possible causes	Solution
Bad quality tyres	Replace with good quality tyres
Tyres not enough inflated	Inflate to 5 bar (72 psi) for 24x1 3/8 tyres and 5 to 8 bars 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 Drive 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 rollers is faulty	Contact your supplier
A roller protector 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.

TRAVELING

By plane

The Lithium-ion battery 12 Ah - 297.6Wh delivered with our power add-ons meets the requirements of the IATA regulations for the transport of lithium-ion battery in aircraft.

Legal reference from 58th edition of IATA Dangerous Goods Regulations effective 1 January – 31 December 2017:

“2.3.2.4 Wheelchairs/Mobility Aids with Lithium Batteries

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), subject to the following conditions:

[...]

(d) where a battery-powered wheelchair or other similar mobility aid is specifically designed to allow its battery(ies) to be removed by the user (e.g. collapsible):

1. the battery(ies) must be removed. The wheelchair/mobility aid may then be carried as checked baggage without restriction;
2. the battery(ies) must be protected from short circuit by insulating the terminals (e.g. by taping over exposed terminals);
3. the removed battery(ies) must be protected from damage (e.g.) by placing each battery in a protective pouch. The battery(ies) must be carried in the passenger cabin;
4. removal of the battery(ies) from the device must be performed by following the instructions of the manufacturer or device owner;
5. the battery must not exceed 300 Wh, or for a device that is fitted with two batteries required for operation, each battery must not exceed 160 Wh;
6. a maximum of one spare battery not exceeding 300 Wh or two spares each not exceeding 160 Wh may be carried.”

When you travel by plane, do not hesitate to tell airport personnel that your battery is less than 300 Wh and that it is removable.

The approval of the operator(s) is required and the pilot-in-command must be informed of the location of the battery.

Your battery must travel with you in the cabin.

Your power add-on and your wheelchair will travel in the hold.

In the car



For security reasons, place your power pack in the boot/trunk of the car.

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

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.

WARRANTY

Duration:

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

Conditions:

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

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

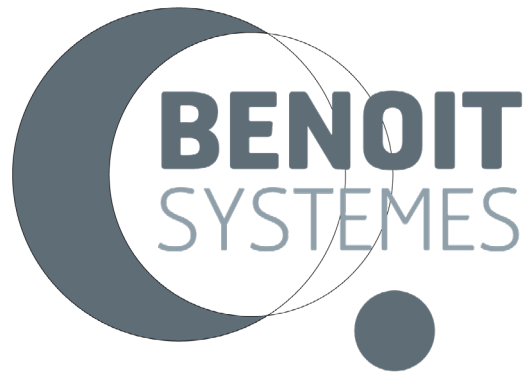
- a) The power pack or one of its parts has not been cared for following the manufacturer's recommendations, as written in the user's manual, or repaired using aftermarket spares.
- b) The power pack or one of its parts has been damaged due to negligence, accident or inadequate utilization.
- c) The power pack 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 pack 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 Drive has been designed and tested to be used on a maximum slope of 20%.

COMPLY WITH STANDARDS





Autonomy is power

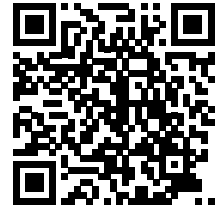
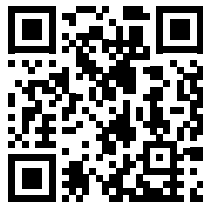
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