merits
www.meritsusa.com

Owner's Manual

P327

Table of Contents

Welcome aboard your new powerbase wheelchair, and thank you for choosing our product. Please read this manual carefully, and follow all instructions before attempting to operate your powerbase wheelchair for the first time. If there is anything in this manual that you do not understand, or if you require additional assistance for setting up your powerbase wheelchair, please contact your local dealer.

This latest model is designed for specific practical user needs, combining solid, rugged construction, and modern high-tech electronics, to enhance safety and performance.

With a state-of-the-art, programmable electronic control system, your powerbase wheelchair can be programmed and adjust within a given range of its performance characteristics, to suit your individual needs. The controller is set up at the factory to give the powerbase wheelchair nominal operating performance characteristics.

After becoming familiar with the basic operation of the powerbase wheelchair, you may wish to customize the settings to fit your own personal preferences. A wide range of customization options can be adjusted such as acceleration, deceleration, maximum speed, turning speed, safety controls, better maneuverability of the joystick, and so on. Contact your local dealer for advice on additional equipment you may need.

Having your powerbase wheelchair checked regularly by your local dealer is the best way to ensure smooth operation, and safety.

This manual provides users practical tips and information on safety issues, operation, and maintenance. Please read it very carefully to ensure your maximum enjoyment and to fully benefit from your independence and mobility.

Whenever special advice or attention is needed, please do not hesitate to contact your local dealer, who has the tools and know-how to provide expert servicing for your powerbase wheelchair.

Your satisfaction and opinions are highly valued by both your local dealer and our company. Please be sure to fill out the enclosed guarantee form, and return it to your local dealer. The information is necessary for providing you with the best service, and to be sure all of your needs are met.

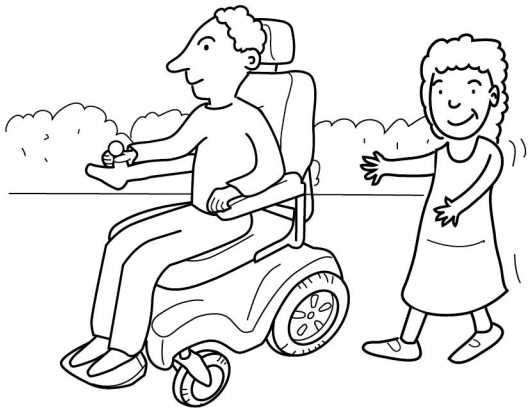
Failure to follow these instructions may result in damage to the powerbase wheelchair or serious injury.

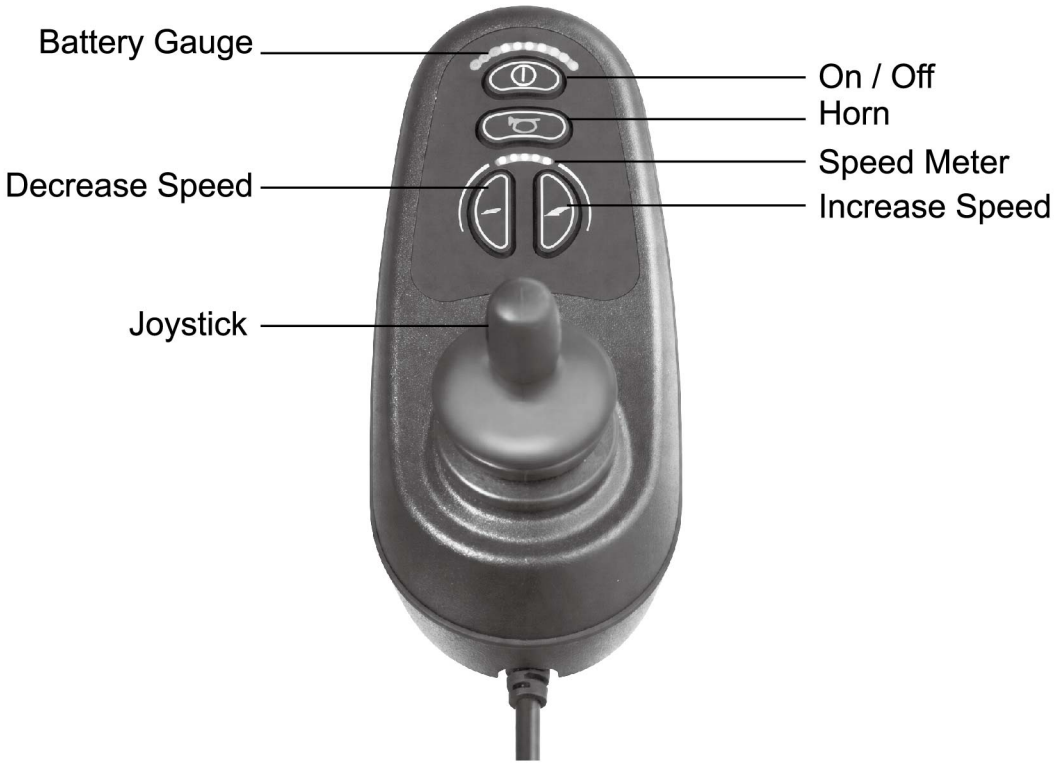
Practice Before Operating

Find an open area such as a park and have an assistant to help you practice until you have confidence operating this vehicle.

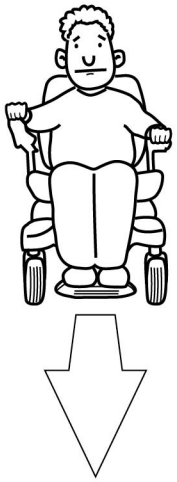
Make sure that the power is off before getting in or out of the seat. Set the speed control button according to your driving ability.

We recommend that you keep the speed control at the slowest position until you are familiar with the driving characteristics of this vehicle.

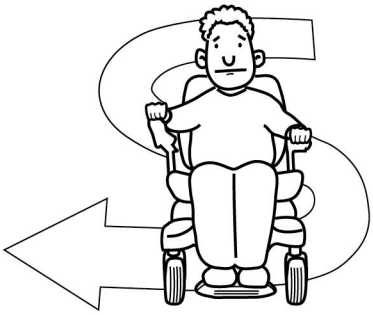




Getting familiar with this vehicle



First, practice moving forward.
Be sure to set the speed to the lowest setting.



After becoming familiar with moving forward, practice marking "S" turns.

Once you are familiar with "S" turns, practice moving in reverse. Note that any speed control setting, the vehicle moves more slowly in reverse than forward

Safety Considerations

DO NOT do any of the following

NO!

Do not carry any passengers

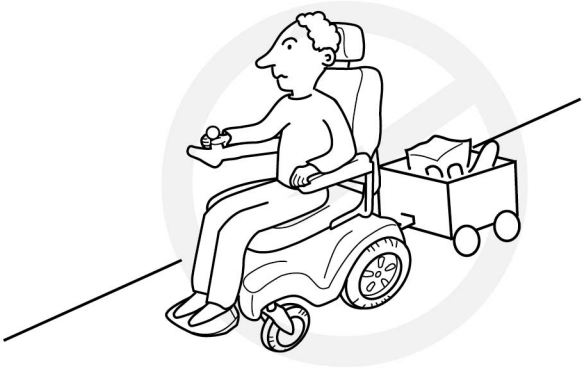
NO!

Do not drive across a slope

NO!

Do not drink and drive

Consult your physician to determine if your medications impair your ability to control this vehicle



NO!

Do not tow a trailer

NO!

Do not turn on or use hand-held personal communication devices such as citizens band(CB) radios and cellular phones

This vehicle has an immunity level of 30 v/m which should protect it from Electromagnetic Interference(EMI) from radio wave sources. The rapid development of electronics, especially in the area of communications, has saturated our environment with electromagnetic (radio) waves that are emitted by television, radio and communication signals. These EM waves are invisible and their strength increases as one approaches the source. All electrical conductors act as antennas to the EM signals and, to varying degrees, all power wheelchairs and power scooters are susceptible to electromagnetic interference (EMI). This interference could result in abnormal, unintentional movement and/or erratic control of the vehicle. The United Statement be incorporated to the user's manual for all electric power wheelchairs.

Powered wheelchairs and electric power scooters (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself or move in unintended directions. It can also permanently damage the powered wheelchair's control system. The intensity of the EM energy can be measured in volts per meter(V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called the "immunity level." The highedr the immunity level, the greater the protection. At this time, current technology is capable of providing at least 30 V/m of immunity level which would provide useful protection against common sources of radiated EMI.
Following the warnings listed below should reduce the chance of unintended brake release or powered wheelchair movement that could result in serious injury:

1) Do not turn on hand-held personal communucation devices such as citizens band (CB) radios and cellular phones while the powered wheelchair is turned on.

2) Be aware of nearby transmitters such as radio or TV stations and try to avoid coming close to them.

3) If unintended movement or brake release occurs, turn the powered wheelchair off as soon as it is safe.

4) Be aware that adding accessories or components, or modifying the powered wheelchair, may make it more susceptible to interference from radio wave sources. (Note: there is no easy way to evaluate their effect on the overall immunity of the powered wheelchair).

5) Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and note whether there is a radio wave source nearby.

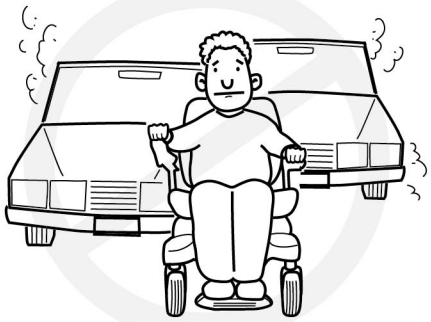
TURN OFF YOUR POWER WHEELCHAIR AS SOON AS POSSIBLE WHEN EXPERIENCING ANY OF THE FOLLOWEING:

1. Unintentional motions.
2. Unintended or uncontrollable direction.
3. Unexpected brake release.

The FDA has written to the manufacturers of power wheelchairs, asking them to test their new products to be sure they provide a reasonable degree of immunity against EMI. The letter says that powered wheelchairs should have an immunity level of at least 30 V/m, which provide a reasonable degree of protection against the more common sources of EMI. The higher the level, the greater the protection.

Driving Outdoors

When you are on the road, please pay attention to the following:



NO!

Do not drive in traffic.

NO!

Do not drive beside a river, port, or lake without a fence or railing.

NO!

If possible, do not drive during the rain.

NO!

If possible, do not drive during or on snow.

NO!

Do not drive off-road or on any uneven surfaced roads.

NO!

If possible, do not drive at night.

NO!

Make sure that there are no obstacles behind you when in reverse.

We recommend to set up the speed at the lowest setting for reversing.

NO!

Do not make sudden stops, weave erratically, or make sharp turns.

NO!

Keep your arms on or inside the armrests and feet on the footrest at all times.

NO!

Do not attempt to climb curbs greater that 1½"(4cm).

NO!

Do not attempt to cross over a gap greater that 3"(7.5cm).

Driving on Various Terrains

Driving on hills is more dangerous than on level surfaces. If you fail to heed these warnings, a fall, tip-over or loss of control may occur and cause severe injury to the vehicle user or others.

NO!

Do not attempt to climb a hill greater than 6˚

NO!

Do not reverse while driving up a hill.

Forward only. If you reverse while moving up a hill, it may cause the vehicle to tip over.

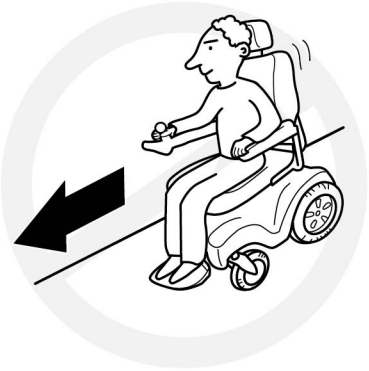
NO!

Do not attempt to drive across a sloping surface greater that 3˚

Driving across a slope greater than 3˚ is very dangerous and may cause the vehicle to tip over.

NO!

Do not drive over soft, uneven or unprotected surfaces such as grass, gravel and decks.



NO!

Use low speed while driving down hill.

When braking while moving down hill, the wheelchair will take longer to come to a complete stop.

NO!

Do not get on and off on a hill.

Always stop on the level surface to get in and get out of the vehicle.

YES!

Always climb or descend gradients perpendicular to the slope or ramp.

Warnings

- **WARNING!** YOUR AUTHORIZED DEALER, PROVIDER, THERAPIST(S), AND/OR OTHER HEALTHCARE PROFESSIONALS ARE RESPONSIBLE FOR DETERMINING YOUR REQUIREMENT FOR A SEAT BELT FOR SAFE OPERATION OF YOUR MOBILITY DEVICE.
  WARNING! YOU REQUIRE A SEAT BELT TO SAFELY OPERATE YOUR MOBILITY PRODUCT. MAKE SURE IT IS FASTENED SECURELY IN ORDER TO REDUCE THE POSSIBITY OF A FALL FROM THE MOBILITY PRODUCT.
- **WARNING!** NEVER ATTEMPT TO GET ONTO OR OFF OF YOUR MOBILITY PRODUCT WITHOUT FIRST ENSURING THE UNIT IS POWERED OFF.
- **WARNING!** IF YOUR POWER CHAIR IS EQUIPPED WITH A POWER ELEVATING SEAT FUNCTION, PLEASE ENSURE THAT YOUR SEAT IS IN THE LOWEST POSITION BEFORE TRAVELLING A SLOPED INCLINE. DO NOT USE THIS LIFT FUNCTION WHILE TRAVELING UP/DOWN THE SLOPE.
- **WARNING!** WHEN TRAVELING UP OR DOWN AN INCLINE, DRIVE YOUR POWER CHAIR SLOWLY TO ENSURE A SAFELY CONTROLLED ASCENT OR DESCENT

Feature Diagram

In this section, we will acquaint you with the many features of your powerbase wheelchair and how they work. Upon receipt of your powerbase wheelchair, inspect it for any damage. Your powerbase wheelchair consists of the following components.

P327

Micro Compact Powerbase Wheelchair Specifications

P327

Model No.	P327, 4-Posts, Lift 400lbs	P327, 4-Posts 450lbs
Length	35.4”(90cm)	35.4”(90cm)
Width	27.2”(69cm)	27.2”(69cm)
Seat Width	20.5”(52cm)	22”(56cm)
Seat Height (from deck)	15”-18”(35-45.5cm)	16.9”-19.3”(43-49cm)
Seat Height (from ground)	25.2”-33.7”(64-85.6cm)	22”-23.2”(56-59cm)
Speed	5mph (8kph)	5mph (8kph)
Range up to	20mi (32km)	20mi (32km)
Weight Capacity	400lbs (182kg)	450lbs (205kg)
Total Weight (without battery)	189lbs (86kg)	167lbs (76kg)
Motor	DC24V / 200W	DC24V / 200W
Brake	Intelligent, regenerative, electromagnetic brakes	
Controller	P&G VR2 60A-A1	Dynamic LinX 50A P&G VR2 50A
Battery	12V,50AH / 22NF * 2pcs	
Charger	5A Off-board	
Gradient	6º	6º
Caster Wheel	F:6” / R:6” Solid Tire	F:6” / R:6” Solid Tire
Drive Wheel	12” Tire	12” Tire

Terminology

Joystick: The device used to "move" the powerbase wheelchair.

Controller: The device that allow joysticks to function. Not all joysticks have a controller.

Armrests: Where arms can rest during time spent on powerbase wheelchair.

Footrest: Where feet rest during time spent on the powerbase wheelchair.

Drive Wheel: The wheels that move the powerbase wheelchair. These are the main wheels.

Caster Wheel: The front wheels and the rear wheels.

Controller Harness : Cable connecting the joystick to the controler.

Freewheel Lever: For convenience, your powerbase wheelchair is equipped with freewheel levers. These levers allow you to disengage the drive motors and maneuver the chair manually.

> **!** **WARNING: DO NOT** use the powerbase wheelchair without the presence of an attendant while the drive motors are disengaged! DO NOT disengage the drive motors when your powerbase wheelchair is on an incline, as the chair could roll down on its own, causing injury!

To engage or disengage the drive motors:

1. Turn the freewheel levers upward to disengage the drive motors.
2. Turn the freewheel levers downward the front of the powerbase wheelchair to engage the drive motors.

Note: It is important to remember that when the powerbase wheelchair is in the freewheel mode, the braking system is disengaged.

Disassembly of the Powerbase wheelchair

Seat Removal:

Fig C1

Fig C2

(1)Disconnect the controller connector from joystick. (Fig C1)
(2)Pull the backrest angle adjustment lever up, and push the backrest forward. (Fig C2)

Fig C3

Fig C4

(3)Push the locked-bar with left hand and lift the seat by right hand. (Fig C3)
(4)Lift the rear part of seat. (Fig C4)

Take off the seat vertically. (Fig C5)

Seat installation:

(1) Lift the seat vertically and insert the hook into front trapeze bar. (Fig C6)

(2) Lower the seat to a horizontal position, then ensure the securement pin is properly inserted into lock-device of power base directly. (Fig C4→C3)

Fig C5

Fig C6

Seat Height Adjustment:

(1) Take off the seat first.

(2) Remove the retaining clips. (Fig D1-1. D1-2)

Fig D1-1

Fig D1-2

(3) Pull the trapeze bar out as far as the required height until the correct hole appears in the seat tubes hole. (Fig D2-1. D2-2)

Fig D2-1

Fig D2-2

(4) Insert the pin into the hole. And repeat this action in other 3 pins.
(Fig D3, D4, D5)
(5) Install the seat. (Please refer to the **Seat installation** on Page 15)

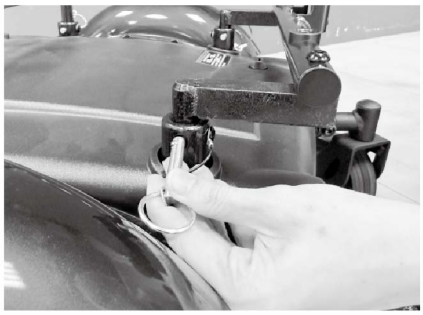


Fig D3

Fig D4

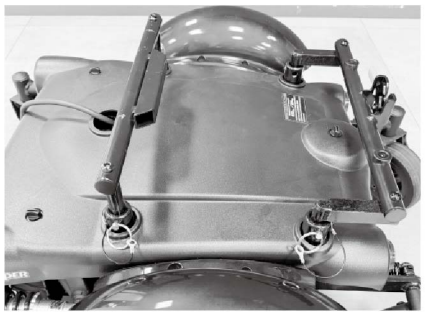


Fig D5

Removal Battery:

(1)Turn the four plastic lock pins then remove top shroud. (Fig E1,E2)
(2)Disconnet the battery wire. (Fig E3)

Fig E1

Fig E2

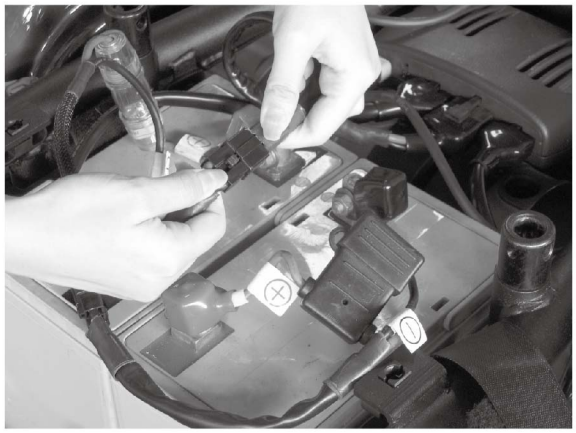


Fig E3

(3)Take apart the velcro. (Fig E4)

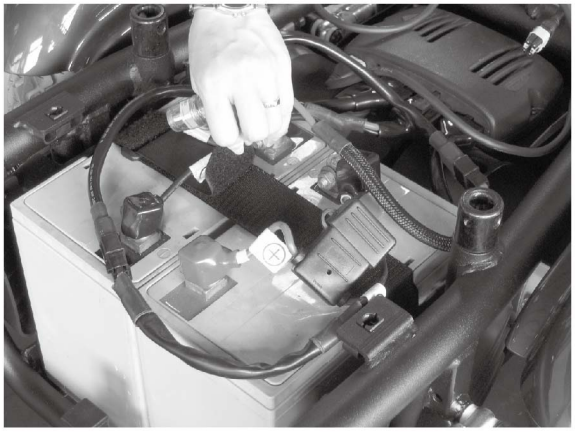


Fig E4

(4)Take off the batteries. (Fig E5)

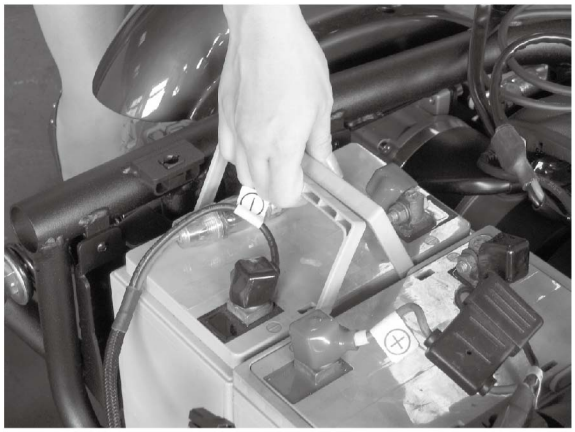


Fig E5

Backrest Angle Adjustment:

Turn backrest angle adjustment lever up. and adjust the lever to the right angle. then release the lever. (Fig F)

Fig F

Armrest width / height Adjustment:

Fig G1

Fig G2

(1)Width adjustment. (Fig G1)
Loosen the set screw with allen key and adjust to the right width, then tighten the set screw.
(2)Height adjustment. (Fig G2)
Loosen the knob and adjust the armrest to right height then tighten knob.

Armrest Angle Adjustment:

1. Flip up the armrest for easy access.
2. Turn the set screw counter-clockwise to raise the armrest and clockwise to lower the front of armrest (Fig. H).

Fig H

Footrest Angle Adjustment:

1. Flip-up the footplate for easy access (Fig. I).
2. With an Allen wrench, simply turn the bolt clockwise to increase the angle or counter-clockwise to decrease it (Fig.I).
   (1)Hold hexagonal bolt (RH) with wrench and loosen the nut (LH). (Fig I)
   (2)Chooce the right angle and tighten the bolt.

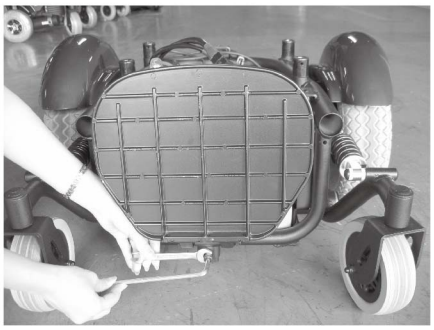


Fig I

Headrest Height Adjustment:

Depress then release the clamp on the left of backrest while pulling headrest up or pushing down until you reach the desired comfort position (one of three). (Fig J)

Fig J

Joystick Position Adjustment:

Loosen the set screw with alley key and adjust the joystic bar to right position. then tighten. (Fig K)

Fig K

Manual Freewheel Levers:

The powerbase wheelchair has a manual freewheel lever on each motor. Manual freewheel levers enable you to disengage the drive mptors from the gearboxes and maneuver the chair manually.

WARNING! Do not use the powerbase wheelchair while the drive motors are disengaged! Do not disengage the drive motors when the powerbase wheelchair is on an incline, as the unit could roll on its own, causing injury!

To engage or disengage the drive motos:
1. Locate the lever on top of each motor.
2. Push the two levers down ward to engage the drive motors.(Fig L1)
3. Pull the two levers up ward to disengage the drive motors.(Fig L2)

If a lever is difficult to move in either direction, slightly rock the powerbase wheelchair back and forth. The lever should then move to the desired position.

WARNING! It is important to remember that when your powerbase wheelchair is in freewheel mode, the braking system is disengaged.

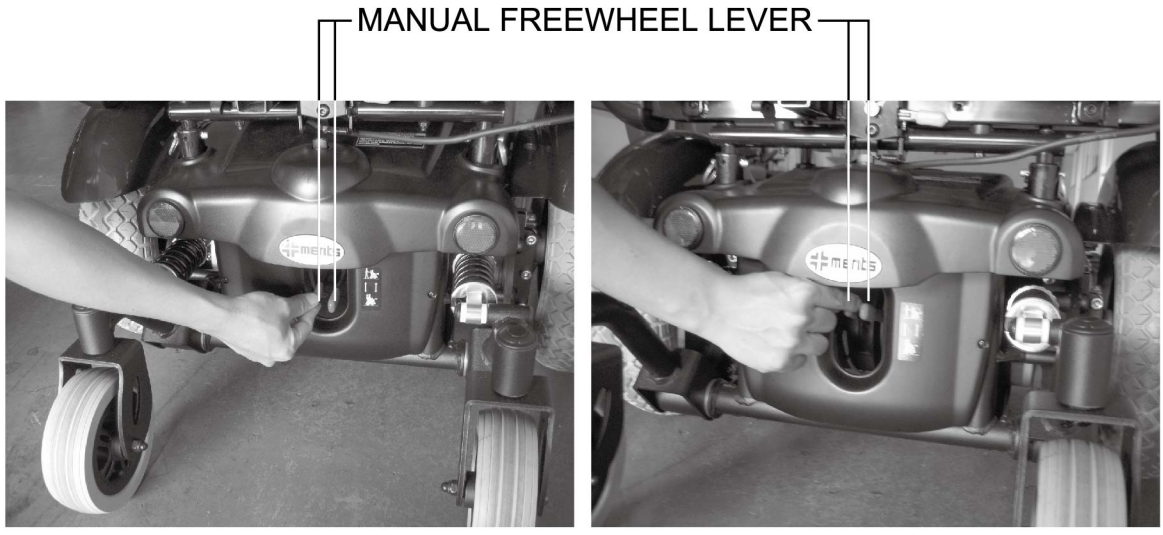


Fig L1. Drive Mode (Drive Engaged)

Fig L2. Freewheel Mode (Drive disenaged)

LiNX Controller Operation

The Remote

There are two versions of the LiNX LE System Remote, namely the REM050, and REM060. Figure 1, and Figure 2, show the main features of these Remotes. These features are described in more detail in the following section.

Warning:
Users should be aware that the surface of the Remote can potentially get hot when it is exposed to strong sunlight for long periods.

Figure 1: The Remote REM050: user interface and connectors

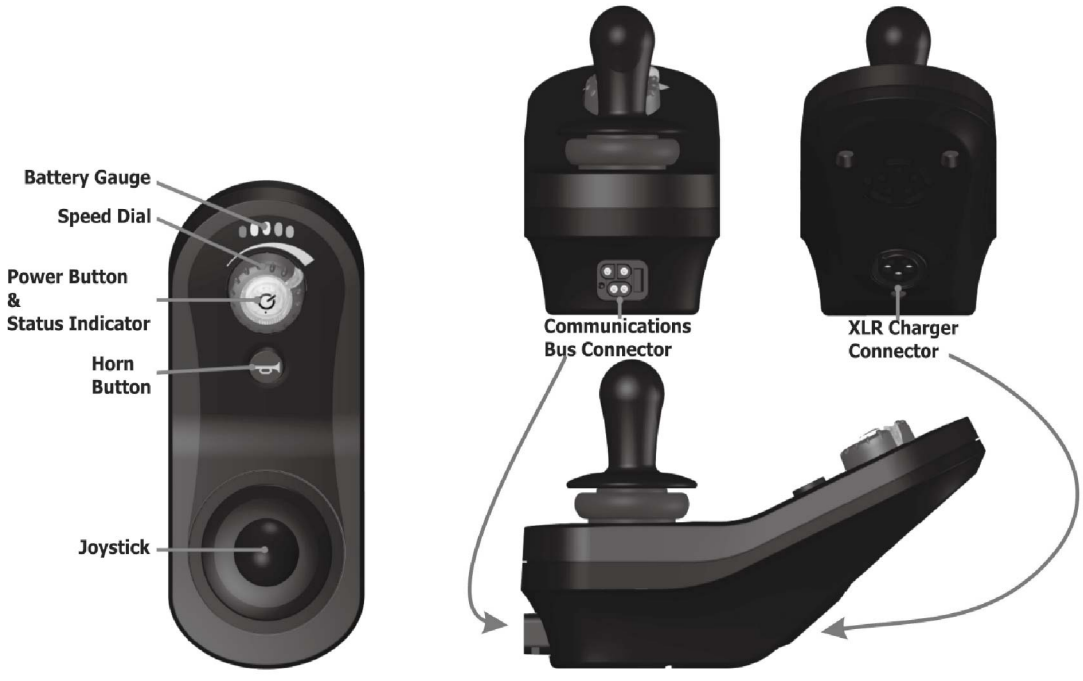


Figure 2: The Remote REM060: user interface and connectors

Power up / down

Figure 3: Power OFF

To switch **ON** the LiNX LE System, press the Power button. The Power button is the only user input that can activate the system.

If there is no fault with the system, the Status indicator (through the Power button) will light up green, and the Battery Gauge will display the current battery status.

If there is a fault with the system when powering up, the status indicator will indicate the fault with a series of red flashes (see section 10 Diagnostics). If the fault is one that prevents the system from driving, then the battery gauge will flash continuously.

Figure 4: Power ON

To switch **OFF** the system, press the Power button; the system will power down and the Status indicator will switch off.

The Power button is also used to perform an EMERGENCY STOP. See next section.

The Power button is also used to lock the system.

Emergency stop

If the user needs to stop the wheelchair quickly, the Power button can be pressed to perform an EMERGENCY STOP. The wheelchair will come to a halt quickly.

Drive inhibit indication

Drive inhibit mode is indicated by the battery gauge with a right-to-left chase sequence.

The chase sequence starts with the green LED on the right-hand side, and one-by-one, each LED will switch on and then off. When the sequence completes at the left-most red LED, it begins again at the right-hand side.

The chase sequence continues until the error condition has been cleared.

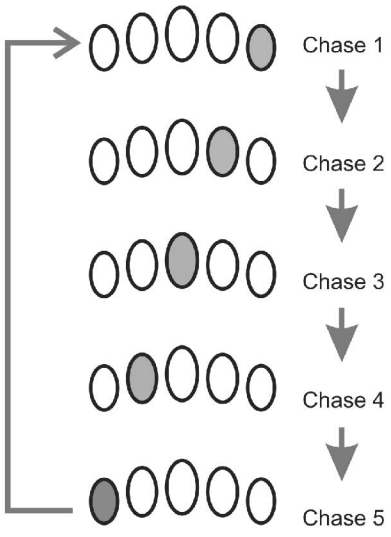


Figure 5: Drive inhibit chase sequence

OONAPU

OONAPU ("**Out Of Neutral At Power Up**") is a safety feature that prevents accidental movement of the wheelchair, either when powering up, or when the wheelchair comes out of an inhibit state.

If the LiNX LE System is turned on (or comes out of an inhibit state) while the joystick is not in the centre position, an OONAPU **warning** is displayed. During an OONAPU warning, the battery gauge LEDs will flash continually to alert the user, and the chair will not drive. If the joystick is returned to the centre position within five seconds, the warning will clear and the wheelchair will drive normally.

However, if the joystick remains out of neutral for longer than five seconds, an OONAPU **error** will occur; the error is displayed by the Status indicator flashing red, and the chair will not drive. To clear the error, return the joystick to the neutral position and power the unit off and then on again.

The joystick

The joystick controls the direction and speed of the wheelchair.

When the joystick is deflected from the centre position, the wheelchair will move in the direction of the joystick movement.

The speed of the wheelchair is proportional to the joystick deflection, so that the further the joystick is moved from the centre position, the faster the wheelchair will travel.

Figure 6: The joystick

Controlling maximum speed

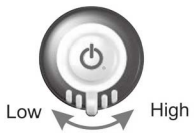


Figure 7: The speed dial

The speed dial allows the user to limit the maximum speed of the wheelchair (that is, the speed when the joystick is fully deflected) to suit their preference and environment.

The dial offers 10 discrete steps between the lowest speed (dial set to the left) and the highest speed (dial set to the right).

As a visual reminder, a speed symbol (shown left) is positioned just below the speed dial to indicate the low and high positions of the speed dial.

Figure 8: The speed symbol

The horn

Figure 9: The horn button (REM050 top, REM060 button)

The REM050's Horn button is located above the Power button. The REM060's Horn button is located below the Power button. Press the Horn button to sound the horn. The horn will sound for as long as the Horn button is pressed.

The Horn button is also used for unlocking a locked system - see below for more details.

The lock function

The lock function is used, primarily, to restrict who can use the system, but also can help prevent unintentional use of the controls for when the system is not required for any length of time.

When a system is locked (see below), the system is powered down, and the user controls are not responsive. If the power button is pressed when the system is locked, the locked status is displayed to the user by the Battery Gauge.

To unlock the system, an unlock sequence must be performed (see below) by the user within a specific timeframe. If the sequence is not performed correctly, within the timeframe, the system remains locked.

Figure 10: Power OFF

To **lock** the system, press and hold the Power button for 4 seconds.

When entering the locked state, the battery gauge will indicate the transition by flashing LEDs 1, 3, and 5 (far left, middle, and far right) 3 times.

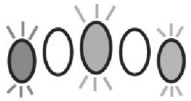
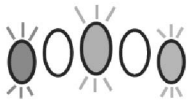


Figure 11: Power ON

To **unlock** the system, press the Power button once, and then, press the Horn button twice — the Horn button must be pressed twice within 10 seconds of pressing the Power button.

If the user implements the unlock sequence incorrectly, or the Power button is pressed again before the unlock sequence is complete, the system will return to the locked state.

During an unlock attempt, the battery gauge will indicate the system is in a Locked state by flashing LEDs 1, 3, and 5 (far left, middle, and far right) until either the system is powered off, unlocked, or the Sequence Timeout is reached.



The battery gauge

The battery gauge comprises five different LEDs (1 x RED, 2 x AMBER, 2 x GREEN), situated above the Remote's Horn button. The number of LEDs lit depends on the status of the battery, as shown below.

The battery gauge LEDs are also used to display charging information. See Battery charging for more details.

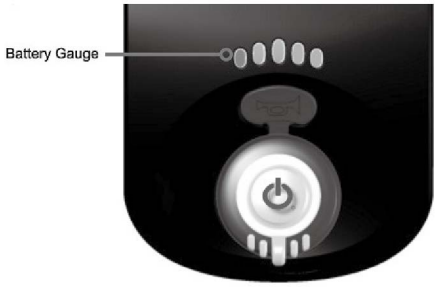


Figure 12: The battery gauge

Normal operation

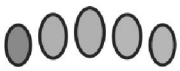
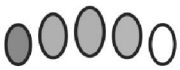
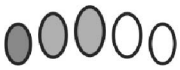
Battery Gauge	Battery Level
	Fully charged
	
	
	Consider charging battery
	Battery needs charging

Figure 13: Battery gauge operation

High voltage warning

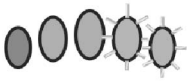


Figure 14: High voltage warning

A high voltage warning is indicated by all LEDs on, and the green LEDs flashing. This occurs when the battery voltage level has risen above the high voltage warning set-point.

Low voltage warning

Figure 15: Low voltage warning

A low voltage warning is indicated with the left-most LED flashing. This occurs when the battery voltage level has decreased below its low voltage warning set-point.

Charge the battery immediately - it is being damaged.

Cut-off voltage

Figure 16: Cut-off voltage

When the battery voltage decreases below the battery cut-off voltage:

- the status indicator will flash (Flash code 2)
- the first (red) LED will flash on the battery gauge
- the horn will sound once every 10 seconds

The status indicator

The status indicator is located underneath the power button. When the LiNX LE System is not powered up, the status indicator is not lit.

When the LiNX LE System is powered up, and there are no faults with the system, the status indicator will be lit green.

If, when powered up, there is a fault with the system, then the status indicator will flash red. The number of flashes will indicate the type of error. For flash codes, see section 10 Diagnostics.

Figure 17: The status indicator

Battery charging

The battery charging socket of the LiNX System is a 3-pin XLR type, located on the LiNX Remote.

To charge the wheelchair's battery, plug the battery charger into the Remote's XLR socket.

The Battery Gauge will indicate the system is connected to the charger by cycling between a left-to-right chase sequence, and then displaying the approximate battery charge state at the end of the chase sequence.

The LE system does not have to be powered up when charging the battery, however, if it is not powered up, then the battery gauge will not display the charging state/ chase sequence.

The battery charger's connector plug must be wired with a Drive Inhibit connection, as shown below.

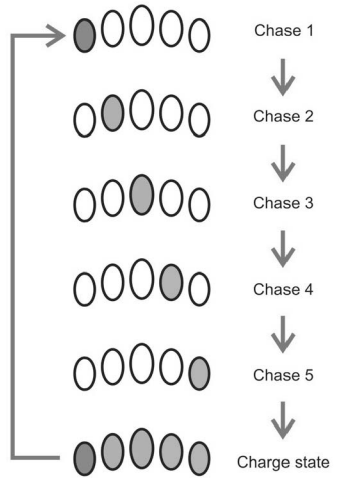
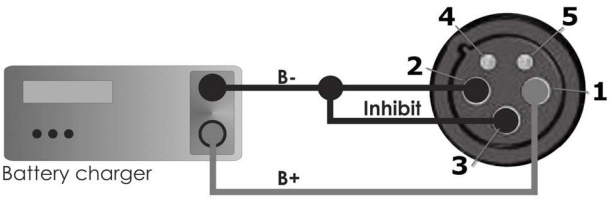


Figure 18: Battery charging chase sequence



Pin	Signal
1	Battery Positive (B+)
2	Battery Negative (B-)
3	Drive Inhibit
4	Communications Bus High
5	Communications Bus Low

The Drive Inhibit signal ensures that the wheelchair does not drive when connected to the charger. This signal must be provided within the battery charger plug as a connection between pin 2 and pin 3. Ensure that the battery charger is compatible with this configuration before connecting it to the charging socket.

Warning:
The maximum charging current for the LiNX LE System is 8 A.

Error indication

Figure 19: The status indicator

If there is an error with the system when it is powered up, then the status indicator will flash red; the number of flashes will indicate the type of error.

The table below describes the error indication, and a few possible actions that can be taken to rectify the problem. The actions listed are not in any particular order and are suggestions only; the intention is that one of the suggestions may help you clear the problem. If in doubt, consult your supplier.

Flash code	Error description	Possible action
1	Remote / joystick error	Check cables and connectors Replace Remote
2	Network or configuration error	Check cables and connectors Check Bluetooth pairing Reconfigure the system Recharge the battery Check charger Replace modules Contact supplier
3	Left motor error	Check cables and connectors Replace Power Module Check and/or replace left motor
4	Right motor error	Check cables and connectors Replace Power Module Check and/or replace right motor
5	Left park brake error	Check cables and connectors Check left park brake is released
6	Right park brake error	Check cables and connectors Check right park brake is released
7	Module error (other than Remote)	Check cables and connectors Check modules Replace LiNX Access Key Replace Power Module Recharge battery If the chair stalled, reverse away or remove obstacles, or if the chair was moved while turned off, cycle the power.

The error indicator may continue to flash after an error has been rectified. To clear the error indication, cycle the system's power.

Typical cabling installation

A typical LiNX LE installation will comprise the following:

- A 24V battery supply and circuit breaker connected to the battery connector
- A motor and park brake connected to the M1 connector
- A motor and park brake connected to the M2 connector
- A LiNX remote module connected to the communications bus connector

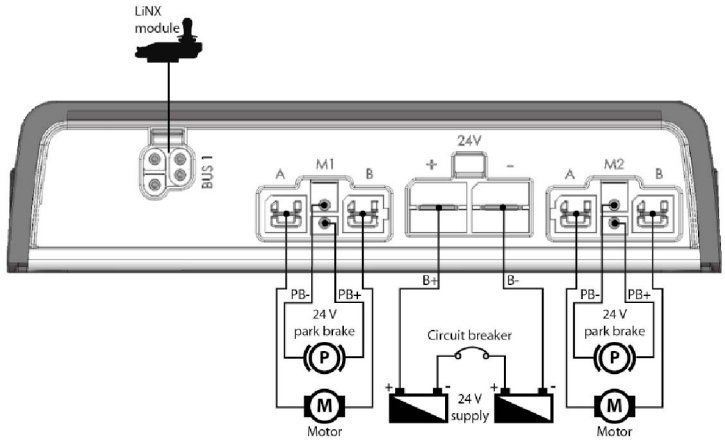
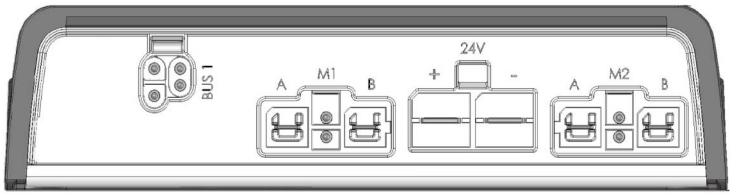
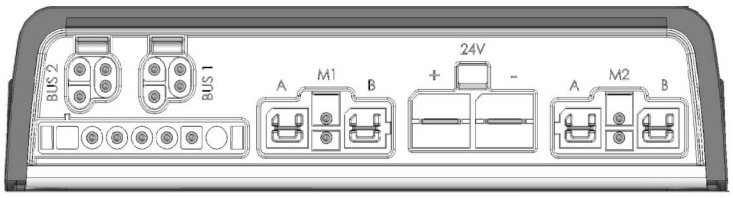


Figure 20: Typical cabling installation LiNX LE series

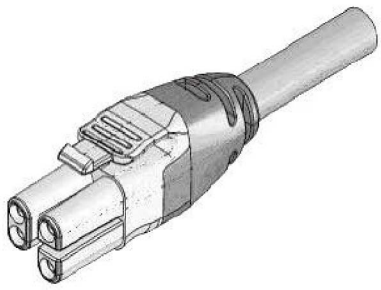
PM40
PM50



PM60



LiNX Communications Bus



The LiNX LE System Power module communicates with the Remote through the LiNX Communications Bus

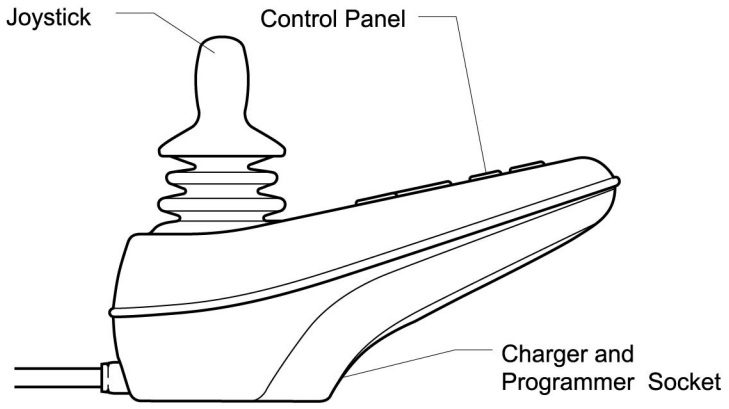
Figure 21: LiNX Communications Bus loom

LiNX Communications Bus Connector		
 Figure 22: LiNX Communications Bus connector	Pin	Function
	1	Battery Negative (B-)
	2	Communications Bus Low
	3	Communications Bus High
	4	Battery Positive (B+)

VR2 Controller Operation:

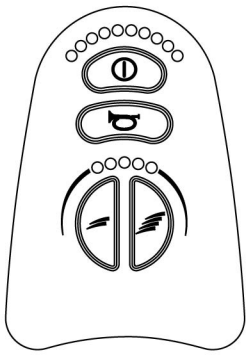
The VR2 control system has two versions of the front control panel - with and without actuator control. Most of the controls are common to both versions, however, the actuator buttons are only included on VR2 control systems with seat actuator control. Each of the controls is explained within this section.

VR2 USER CONTROLS

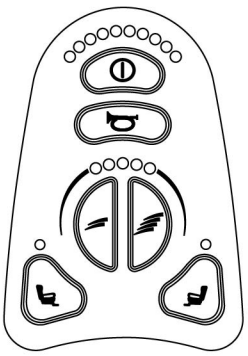


Front Control Panel Details

No Actuators

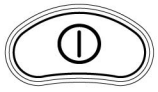


With Actuators



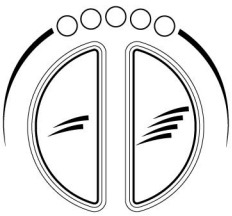
VR2 CONTROL BUTTONS

Battery Gauge



On/Off Button

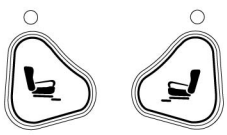
Horn Button



Maximum Speed / Profile Indicator

Speed / Profile Decrease Button

Speed / Profile Increase Button



Actuator Buttons

On/Off Button and Battery Gauge

The on/off button applies power to the control system electronics, which in turn supply power to the wheelchair's motors. Do not use the on/off button to stop the wheelchair unless there is an emergency. (If you do, you may shorten the life of the wheelchair drive components).

The battery gauge shows you that the wheelchair is switched on. It also indicates the operating status of the wheelchair. Details are given in section 1.

1 Control System Status indication

The battery gauge and maximum speed / profile indicator show the status of the control system.

> A number of supposedly defective control systems returned to us are subsequently found to operate correctly. This indicates that many reported faults are due to wheelchair problems rather than the control system.

1.1 Battery Gauge is Steady

This indicates that all is well.

1.2 Battery Gauge Flashes Slowly

The control system is functioning correctly, but you should charge the battery as soon as possible.

1.3 Battery Gauge steps Up

The wheelchair batteries are being charged. You will not be able to drive the wheelchair until the charger is disconnected and you have switched the control system off and on again.

1.4 Battery Gauge Flashes Rapidly (even with the joystick released)

The control system safety circuits have operated and the control system has been prevented from moving the wheelchair.
This indicates a system trip, i.e. the VR2 has detected a problem somewhere in the wheelchair's electrical system. Please follow this procedure.

- Switch off the control system.
- Make sure that all connectors on the wheelchair and the control system are mated securely.
- Check the condition of the battery.
- If you can't find the problem, try using the self-help guide given in section 1.6.
- Switch on the control system again and try to drive the wheelchair. If the safety circuits operate again, switch off and do not try to use the wheelchair.

Contact your service agent.

1.5 Self-Help Guide

If a system trip occurs, you can find out what has happened by counting the number of bars on the battery gauge that are flashing.

Below is a list of self-help actions. Try to use this list before you contact your service agent. Go to the number in the list which matches the number of flashing bars and follow the instructions.
If the problem persists after you made the checks described above contact your service agent.

* If the programmable parameter, Motor Swap has been enabled, then left and right hand references in this table will need transposing.

1 Bar 	The battery needs charging or there is a bad connection to the battery. Check the connections to the battery. If the connections are good, try charging the battery.
2 Bar 	The left hand motor* has a bad connection. Check the connections to the left hand motor.
3 Bar 	The left hand motor* has a short circuit to a battery connection. Contact your service agent.
4 Bar 	The right hand motor* has a bad connection. Check the connections to the right hand module.
5 Bar 	The right hand motor* has a short circuit to a battery connection. Contact your service agent.
6 Bar 	The wheelchair is being prevented from driving by an external signal. The exact cause will depend on the type of wheelchair you have, one possibility is the battery charger is connected.
7 Bar 	A joystick fault is indicated. Make sure that the joystick is in the center position before switching on the control system.
8 Bar 	A control system fault is indicated. Make sure that all connections are secure.
9 Bar 	The parking bakes have a bad connection. Check the parking brake and motor connections. Make sure the control system connections are secure.
10 Bar 	An excessive voltage has been applied to the control system. This is usually caused by a poor battery connection. Check the battery connections.
7 Bar + S 	A comunication fault is indicated. Make sure that joystick cable is securely connected and not damaged.
8 Bar + A 	An Actuator trip is indicated. If more than one actuator is fitted, check which actuator is not working correctly. Check the actuator wiring.

1.6 Slow or sluggish movement

If the wheelchair does not travel at full speed or does not respond quickly enough, and the battery condition is good, check the maximum speed setting. If adjusting the speed setting does not remedy the problem then there may be a non-hazardous fault. Contact your service agent.

1.7 Maximum Speed / Profile Indicator is Steady

The display will vary slightly depending on whether the control system is programmed to operate with drive profiles.

1.7.1 Maximum Speed Indication

The number of LEDs illuminated shows the maximum speed setting. For example, if the setting is speed level 4, then the four left hand LEDs will be illuminated.

1.7.2 Profile Indication

The LED illuminated shows the selected drive profile. For example, if drive profile 4 is selected, then the fourth LED from the left will be illuminated.

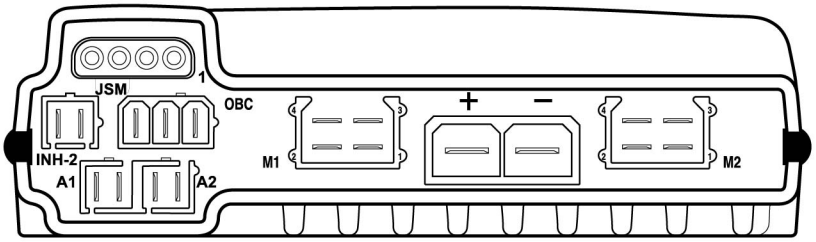
1.8 Maximum Speed / Profile Indicator Ripples Up and Down

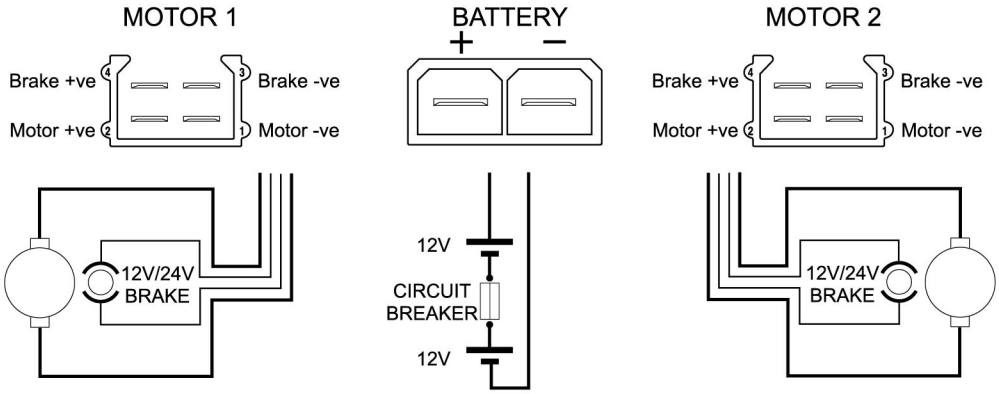
This indicates the control system is locked.

1.9 Maximum Speed / Profile Indicator Flashes

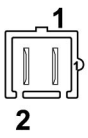
This indicates the speed of the wheelchair is being limited for safety reasons. The exact reason will depend on the type of wheelchair, however, the most common cause is that the seat is in the elevated position.

VR2 POWER MODULE CONNECTIONS



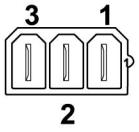


INHIBIT 2



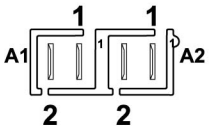
INH-2	Function
1	0V
2	Inhibit 2

ON-BOARD CHARGER



OBC	Function
1	Battery +ve
2	Inhibit 3
3	0V

ACTUATORS



Joystick Movement	Pin 1	Pin 2	Actuator Movement
Forward	+ve	-ve	Channel Up
Backward	-ve	+ve	Channel Down

▶ Operating your powerbase wheelchair ◀

Batteries and Charging

Your Power Wheelchair uses two long-lasting, 12-volt batteries. These batteries are sealed, maintenance free, deep-cycle batteries. Since they are sealed, there is no need to check the electrolyte (fluid) level. Deep-cycle batteries are designed to handle a deep discharge. Though they are similar in appearance to automotive batteries, they are not interchangeable. Automotive batteries are not designed to handle a long, deep discharge, and are also unsafe for use in power wheelchairs.

WARNING! Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

BATTERY BREAK-IN

To break in your power wheelchair new batteries for maximum efficiency:

1. Fully recharge any new battery prior to initial use. This will bring the battery up to about 90% of its peak performance level.
2. Run your power wheelchair about the house and yard. Move slowly at first, and do not stray too far until you become accustomed to the controls and break in the batteries.
3. Give the batteries another full charge of 8 to 14 hours and operate the power wheelchair again. The batteries should now perform at over 90% of their potential.
4. After four or five charging cycles, the batteries will top off at 100% charge and last for an extended period.

IMPORTANT INFORMATION ABOUT BATTERIES

A fully charged deep-cycle battery provides reliable performance and extended battery life. Keep your batteries fully charged whenever possible. Batteries that are regularly discharged, infrequently charged, or stored without a full charge may be permanently damaged, causing unreliable operation and limited battery life.

If you do not use your power wheelchair regularly, we recommend maintaining battery vitality by charging the batteries at least once a week.

Note: If you are storing a power wheelchair for an extended period of time, you may wish to block the unit up off the ground with several boards under the frame. This keeps the tires off the ground to prevent the possibility of flat spots developing.

If you intend to use public transportation while using your power wheelchair, you must contact in advance the transportation provider to determine their specific requirements.

Sealed Lead Acid and Gel Cell batteries are designed for application in wheelchairs and in other mobility vehicles. Generally, Sealed Lead Acid batteries that are marked as "Non-Spill" are safe for all forms of transportation such as aircraft, buses, and trains. We suggest that you contact your transportation provider to determine specific requirements of transportation and packaging.

If you wish to use a freight company to ship the power wheelchair to your final destination, repack the power wheelchair in the original shipping container and ship its batteries in separate boxes.

Charging Your Batteries

The battery charger is one of the most important parts of your power wheelchair. Optimize your power wheelchair performance by charging the batteries safely, quickly, and easily.Use only the charger supplied with the vehicle.

Charging Procedures

1. Keep charger output plug inserted into the charging socket in the front of the controller before having the charger input plugged into an electrical outlet.
2. Follow the instructions on the front panel of the charger for operating and learn the meanings of the different indicators accordingly.
3. Minimum charging time varies depending on battery condition and discharge level. It is recommended to charge the batteries overnight.

NOTE: The specially designed charger assures that excess power is not consumed regardless of how long it is switched on, and connected to the batteries.

4.Once charging is complete, disconnect the charger from the electrical outlet and then disconnect the charger from the controller socket. Do not leave the charger connected to controller when input power is disconnected.It is dangerous and will jeopardize the power charging to the batteries.

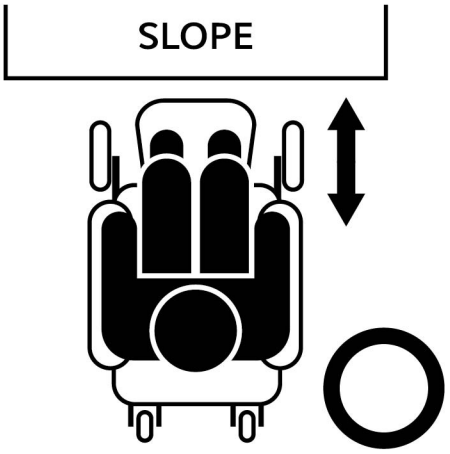
IEC SYMBOLS	
	**Caution, attention or consult accompanying documents.**
	**Alternating Current**
	**Type BF Equipment**
	**Double Insulation**
	**No Smoking or Naked Flames**

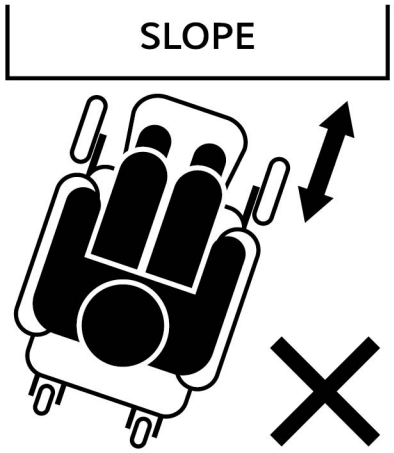
Degree of protection against ingress of water is rated as IPx0.

Serialization format for products

1	The first digit is the last one digit of the year for manufacture.
2	The second and third digits are the month for manufacture.
3	The fourth to seventh digits are counting of how many units were manufactured during the month.

WARNING! Always drive straight up or straight down an incline, ramp, or slope to reduce the possibility of a tip or a fall.





TROUBLESHOOTING TIPS

Figure 1

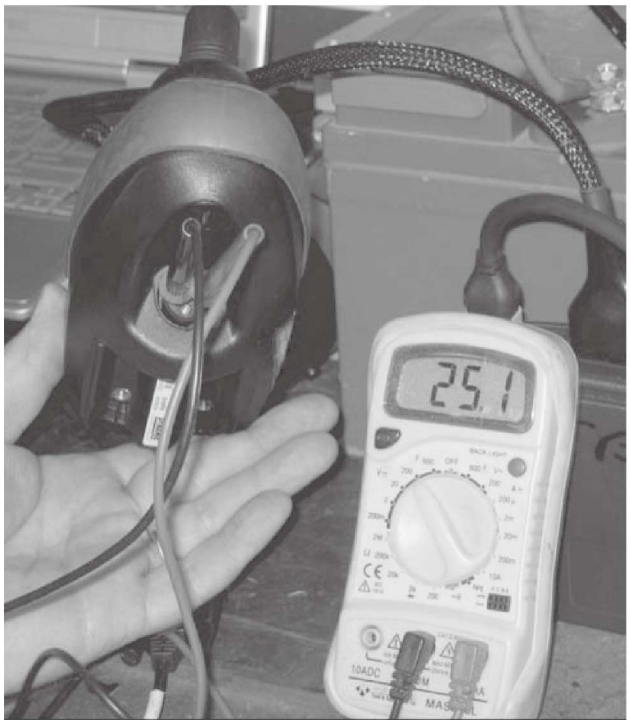


Figure 2

If your power chair or scooter is not operating properly, please take the following steps prior to calling Technical Support.

Load-test Batteries—See Figure 1

1. Attach Battery Load-tester to battery.
   Observe polarity: Red is Positive—Black is Negative

2. Hold load switch on for 10 seconds. A good reading is 11.2 Volts DC, or in the Green.

Note: A Voltmeter cannot load-test batteries.

Test Voltage—See Figure 2

Utilizing a Voltmeter, place meter leads in charging port. The voltage reading should be 25 Volts DC, plus or minus 2 volts.

Note: Batteries are connected in series.

If the above tests are successful, proceed with the following test.

1. For power chairs, place gearbox levers in Freewheel.

2. Turn on controller and run in all four quadrants.

3. If troubleshooting a scooter, elevate rear wheels and run in Forward and Reverse.

If any of the tests fail, call Technical Support for assistance: 1-800-963-7487.

merits

Enhancing life through mobility.

MERITS HEALTH PRODUCTS, INC.

4245 EVANS AVENUE | FORT MYERS FL 33901 | 239-772-0579
www.meritsusa.com

Rev. 10. 2026/03/10