

*drive*TM **CARBON TOUCHTM** POWER CHAIR

User's Manual item # CFPC17FS



INTRODUCTION

Thank you for choosing the CarbonTouch Power Chair for your portable wheelchair transportation needs. It is important to read through this manual before operating your CarbonTouch Power Chair to become familiar with its features as well as its limitations and safety information. All instructions and warnings in this manual should be followed to ensure safe operation.

Disclaimer: Drive DeVilbiss Healthcare shall not be held responsible for personal injury or property damage resulting from non-compliance with the warnings and instructions in this manual.

As part of our ongoing product improvement initiative, we reserve the right to change specifications and design without notice. As a result, there may be minor differences between your CarbonTouch Power Chair and accessories and the photos, illustration and instruction in this manual.



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SYMBOLS GLOSSARY

	Warning Beware of potential hazard		Attention, see instructions for use
	Refer to instructions for use - Mandatory Failure to read the instructions for use could introduce a hazard		Refer to instructions for use - Recommended Failure to read the instructions for use could introduce a hazard
	Manufacturer		Product fulfills WEEE directive
	Date of manufacture		Serial number
	Batch number		Type BF applied part
	Use until year & month Symbols(Expiration date)		Type B applied part
IPX-4	Water proof grade		CE mark
	Medical device		Distributor
	Store in clean & dry place protected from rain, snow, ice, salt and water.		Country of Manufacture
	Unique Device Identification		Keep dry
	Model Number		Foot Switch
	Package Number		Don't use when packing damaged
	Humidity limitation		Temperature limitation
	Danger of explosion		Protect from heat and radioactive sources
	Radio frequency fields beyond this point may exceed FCC general public exposure limit		

SYMBOLS GLOSSARY

	Equipotential		CF application part
	Switch		Fuse
	PCTB		Volume control
	Disposal and recycling only authorized recycling companies can recycle parts of this mobility wheelchair		Avoid contacting with rain, snow, ice, salt and keeping in water, keep under clean and dry ambience.
	Keep other metal related items or tools away from the negative and positive terminal end to avoid any short cut or electricity shock from happening.		Implication of flammable material. Do not expose under fire, fire sparkles and other heat sources conditions. Never transport batteries along with torch easy explosive items or flammable materials.
	Easy to be crashed, crashing spot		Brake warning
	With potential explosion		The product has passed electromagnetic test of 20 V/M.
Power	100~240VAC, 50~60 Hz		Battery contains anti-corrosion chemical substance.
DC output	+ 29.4V  2.0 A		Type 2 device
Frequency	500VA		

WARNINGS



Warning!

- Please read through and understand the contents of this manual fully for safety concern. Keep awareness at all times while driving your wheelchair to ensure your safety.
- Please be aware of and go through “Warnings” carefully to prevent damages or personal injury due to improper operation. Users are highly advised to take appropriate safety precautions. The manufacturer is not liable for any personal injury or damages resulting from improper operation. Obey local pedestrian traffic rules. It is necessary to apply safety equipment such as reflectors, reflective clothing, lights and safety signs for your safety.
- This electric wheelchair is suitable for traveling on good, leveled surfaces. Do not drive under heavy rain, in snow, on mud, on rough, on loose, in narrow, on icy surfaces, on treacherous roads or waterways without guardrails, on poor roads, or under icy conditions. Water or excessive moisture can cause electrical parts to malfunction. Do not use when the ambient temperature is **below -10°C (14° F) or above 45°C (113° F)**.
- This electric wheelchair is suitable for use on flat pathway within living rooms, in hospitals, nursing homes and nearby buildings. Do not use on grass, gravel, slopes greater than 8°, or motorways. Do not drive in the rain or snow. Never drive on roads.
- Do not operate wheelchair under the influence of alcohol. Consumption of alcohol significant affects safe operation of the power wheelchair. Every wheelchair is different, please familiarize yourself with your new chair before driving and review the instructions in this manual prior to operating your power chair for the first time. It may take some time and practice to get used to the operation of your new power chair.
- Do not operate the wheelchair on other paths that are not recommended in this manual. Do not use the wheelchair for other purposes, such as weight training, sports and track and field towing, etc.
- Make sure the power of the wheelchair is switched off before charging. **Do not charge the powerchair below 0°C (32°F)**, charge under an ambient temperature between 0°C (32°F) ~ 45°C (104°F). Do not charge when the joystick is powered on to prevent malfunction. Keep the battery from freezing and do not charge a frozen battery, it may cause personal injury and battery damage. Keep all charger power cable terminals clean, dry and away from moisture to prevent damage to the electrical system and personal injury.
- The wheelchair is not waterproof; avoid showers, bathtubs, pools, saunas, rain, snow, salt, fog, waterways and slippery surfaces to prevent rust and corrosion. Do not use near water sources like rivers, lakes, or the sea.
- Prolonged exposure to extreme heat or cold can damage parts and batteries.
- Keep away from flames.
- Do not alter the controller settings on your own. If there is any issue with the controller, please contact your service provider. Adding accessories may alter the specification of the wheelchair such as the total weight, dimensions or the centre of gravity. Changes may damage some aspects around you. Do not alter the specification of seat. Do not drive the wheelchair with any additional cushions or pillows stacked on the seat. Driving in an unstable seat position may result in personal injury.
- Do not leave the powerchair under low or high temperature for a long time. It will potentially impair the functions of the power chair. Always check the electrical components for corrosion, check both brakes for looseness, wear and tear, or damages. Check the wiring harnesses and terminals often for any damage. Replace immediately if necessary.
- The wheelchair is not designed for climbing up stairs or escalators. Do not sit on the wheelchair while it is being transported by any vehicle. Do not tow the wheelchair, it may exceed its own speed threshold resulting in damage of critical parts.
- When transporting a wheelchair with a battery, ensure that it is in a safe condition. Avoid transporting the wheelchair or its

WARNINGS

battery alongside flammable materials. For secure transportation, always keep the power turned off. Failing to do so may cause the wheelchair to move unexpectedly if the control devices are accidentally touched. Engage the brakes to prevent the wheelchair from moving during transportation. If the wheelchair is being driven with a person into a lift, turn off the power after entering the lift. Additionally, make sure the person is seated securely to prevent any unintended movement of the wheelchair.

- It is strongly recommended to not smoke while sitting in the wheelchair. Please observe the following safety rules if you insist on smoking in the wheelchair: Keep ashes at a safe distance while disposing of your cigarette and make sure it is completely extinguished.
- Freewheel mode without an attendant is prohibited and it may result in personal injury. To prevent the wheelchair from becoming uncontrollable or moving unexpectedly, avoid switching it to freewheel mode, especially on inclined surfaces. When seated in the wheelchair, refrain from adjusting your position on your own to prevent potential injuries. Always request assistance from a caregiver if needed.
- If you expect to be seated idle for a while, switch off power to keep wheelchair from moving accidentally. Keep yourself, your clothes and other objects away from wheels while the wheelchair is in motion. Do not drag any objects behind the wheelchair while it is in motion.
- Do not connect any devices not described in this manual to the batteries or electronic system of the wheelchair. When disconnecting the harness, grasp the terminals to prevent damage to the harness. Do not pull the harness directly.
- When getting in and out of the wheelchair, sit as far back as possible in the seat to prevent the wheelchair from tipping over. Avoid bracing your body weight on the armrests, as it could cause the wheelchair to tip over and lead to injury. **WARNING:** Do not stand on the footplate. Concentrating your weight

on the footplate may lead to wheelchair damage, tipping and possible injury.

- The wheelchair may come to a sudden stop at any time during operation. Do not operate wheelchair if it runs abnormally or irregularly. Should the wheelchair become uncontrollable while driving, immediately release the joystick knob and power off at once. In a case of brake malfunction power the wheelchair off immediately.



Warning!

1. Never cross any gap over 100 mm (3.94") in width.
2. Never attempt to drive over obstacles or thresholds over 40 mm (1.57") in height.
3. Wheelchair Operating Conditions: Temperature -10~+50°C, Atmospheric Pressure 860~1060hPa, Humidity 10%~93%.
4. Power Source Condition: Charging Voltage AC (100-240)V ± 10%, 50 ± 1Hz, Battery Voltage DC 24V(+5%, -10%), Power of Motor ≥180W
5. Only operate wheelchair after it is unfolded and only allow one person on wheelchair at all times.

Weight Limitations

1. The wheelchair is tested with simulation of human model at 330 lbs (150kg) load capacity.
2. Your wheelchair is rated for a maximum weight capacity. Please refer to the product specifications table for this limit. Keep in mind that the maximum weight capacity includes the combined weight of the user and any accessories mounted to the wheelchair. Stay within the specified weight capacity of your wheelchair. Exceeding the weight capacity voids your warranty. We will not be held responsible for injuries and/or property damage resulting from failure to observe weight limitations.

SECURITY GUIDANCE



Warning!

- We are not responsible for any damage or injury caused by exceeding wheelchair's weight limitations.
- Not to drive on dangerous slopes.
- Not to drive backwards when going up and down a hill. Max grade ability is uphill 8°.

Statement

Indications for use:

This is a motor driven, indoor and outdoor transportation vehicle with the intended use to provide mobility to a disabled or elderly person limited to a seated position.

The CarbonTouch Power Chair has a base with carbon fiber frame, two front wheels, two rear wheels, a seat, a joystick with depth-adjustable joystick mount, two electric motors with an electromagnetic brake, 1 rechargeable Lithium-Ion Battery with an off-board charger. The movement of the wheelchair is controlled by the rider who operates the joystick knob, speed controls, and power from the joystick console. The device is installed with 2 electromagnetic brakes that will engage automatically when the wheelchair is not in use or the joystick is released when driving. The wheelchair only can be operated on the flat road.



Please read this manual carefully and understand everything clearly before using the Electric wheelchair for the first time.

Instructions



Warning!

1. Improper use may cause death or serious injury.
2. Improper use may cause damage of wheelchair.
3. Comply with the manual to keep wheelchair in good condition.
4. DO NOT make sharp turns at high speed or on inclines or reverse direction abruptly.
5. DO NOT utilize brake release / freewheeling option on any incline without assistance to control motion.
6. To avoid danger of suffocation, when unpacking your wheelchair keep all plastic bags in the package away from babies and children. Do not place the plastic bags in cribs, beds, carriages or playpens.
7. Do not drive under consumption of alcohol or fatigue.
8. Please do not drive at night or in poor visibility.
9. This wheelchair is not waterproof, please do not expose it under rain or snow, and do not drive when it is rainy or snowy.

PRODUCT RELATED EXPLANATION

Intended Use	This power chair is intended for use by people who experience difficulty walking, or who may have disabilities affecting ambulation (excluding obesity).
Intended use environment	Electric wheelchair is suitable for operation on concrete, asphalt, and flat indoor surfaces inside homes, hospitals, nursing homes, home surrounding area.
Contraindications	Users with visual impairment, intellectual impairment or neck injury, preventing ability to observe environment in the rear of chair should be operated by attendant. Anyone with paraplegia below the chest, osteoporosis or hypochondriasis is prohibited to use the product.

SPECIFICATIONS



Model	CFP C17FS
Material	Carbon fiber
Unfold Size (L * W * H) (inch/mm)	44.5" × 23.2" × 38.5" (1130 × 588 × 980 mm) (with anti-tippers, <i>not shown</i>)
Fold Size (L * W * H) (inch/mm)	15.5" × 23.2" × 33.3" (395 × 588 × 845 mm) (w/o joystick and cushion installed)
Load Capacity	330 lbs (150 kgs)
Motor	180W × 2 pcs brushless motors
Battery	24V 12AH × 1 pc lithium battery, second one is optional
Max Speed	3.7mph (6 km/h)
Driving Range	10.5 miles (17 km)
Front Wheels	6.5" PU solid wheels
Rear Wheels	8" PU solid wheels
Climbing Slope	Max 8°
Charging Time	6 hours
Armrest Spacing	19.7" (500 mm)
Seat Width	17.75"
Seat Depth	17.7" (450 mm)
Seat Height	18.5" w/ seat cushion; 20.5" w/o seat cushion (506 mm)
Turning Radius	27.6" (700 mm)
Weight (Without Battery)	36.4 lbs (16.5 kgs)
Weight (With Battery)	40.8 lbs (18.5 kgs)
Drive Model	Rear Drive
Braking System	Intelligent electromagnetic brake

SPECIFICATION DIAGRAM



SAFE USE GUIDELINE

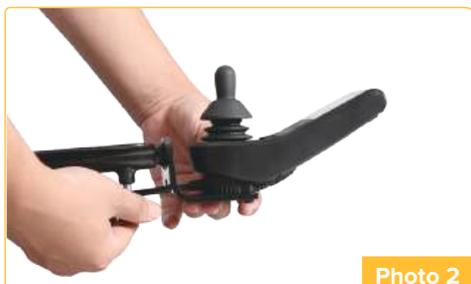
For Caregivers

1. Before pushing the wheelchair by hand, turn off the power switch and set the free-wheel mode levers on both the left and right motors to manual (freewheel) mode. Once in manual mode, the motors will not operate.
2. To safely push the electric wheelchair manually, push from behind the backrest frame. This ensures a reliable force point and prevents the wheelchair from overturning. Also, make sure the folding and unfolding buckle is securely locked.
3. Keep cooperating with user at all times, particularly prior to each action inform user your intention and clearly give your reasons.
4. Remind user of leaning body against backrest while you are about to lift up the back of electric wheelchair. Do not go uphill or downhill while the wheelchair is in manual (freewheel) mode, as there could be risk of slipping.

Precautions on joystick controller

Note: Adjust the installed position of joystick controller (as photo 2) to protect from any risk of bump or falling down.

1. Inspect and adjust the installation of joystick every six months, or as often as it is necessary.
2. Contact your local dealer or distributor if the control panel of joystick controller is abnormal or malfunctioning.



Precautions when electric wheelchair is stopped



1. Power off the electric wheelchair while it is stopped or you are seated stationary, even if only for a short period of time. This will prevent the joystick from being accidentally engaged when not in use, and prevent potential injury or damage.
2. Make sure any helper fully understands the joystick function to prevent accidental touch and avoid sudden and unexpected wheelchair movement.

Operational Environment

1. This electric wheelchair is suitable for smooth, leveled surfaces. Avoid driving in extreme weather (rain, snow, icy conditions) or on unstable terrain (mud, rough, loose, narrow paths, waterways, treacherous or poor roads). Excess moisture can damage electrical components. Do not operate it in temperatures below 14°F or above 113°F.

SAFE USE GUIDELINE



Warning!

To avoid malfunction of electric wheelchairs:

- Do not place or keep the electric wheelchair under direct impact of water (such as heavy rain) or in a very humid environment.
 - Please do not use this electric wheelchair while bathing, in saunas or swimming.
 - Please do not use this electric wheelchair near water sources (such as rivers, lakes or oceans).
 - Please ensure that the battery charging cover is closed while the battery is not being charged.
 - If the joystick is damaged, please replace the joystick device.
 - Ensure that all electrical connectors are secured and free of looseness.
 - It is forbidden to wash this electric wheelchair with water. If the electric wheelchair is soaked, please remove the battery and dry the electric wheelchair as soon as possible. Once battery is dry, insert it into the battery holder for reuse.
 - Switch off power of the electric wheelchair before charging, please do not charge below 32°F, please charge while environment temperature is between 32°F-113°F.
 - Charging while the device is powered on may lead to malfunction or overheating. To ensure safe operation, always power off before charging.
 - Prevent the battery from freezing and do not charge frozen battery. Charging frozen battery may cause personal injury and battery damage.
 - Keep all charger power cables and terminals clean, and dry. Keep away from moisture to avoid damage of the electrical system and personal injury.
 - This wheelchair is not waterproof, do not expose under rain or snow and do not drive when rainy or snowy. Do not operate wheelchair across waterways.
 - Do not expose the powerchair to flames.
- Do not leave the powerchair for long time under low or high temperatures, it will impair the functions of the powerchair.
 - Check the electrical components frequently for corrosion.
 - Always check the electrical components for corrosion, check all the brakes, wear and tear.
 - Check the wiring harnesses and terminals and replace them in time if necessary.
 - Do not connect any other device to the electronic system of wheelchair or use the wheelchair battery to activate any other device unless described in the instruction manual.
 - When disconnecting the wiring harness, always hold on terminals to prevent damage to the harness. Do not pull the harness directly.
2. When impossible to avoid operating the electric wheelchair on wet or slick ground, please be careful and keep at very slow speed.
 - If one or two main wheels lose traction, stop the electric wheelchair immediately to avoid losing control or falling down.
 - Please do not drive in any snow, ice, water or oil film, if on any slope or ramp.
 - Keep wheelchair under dry and clean environment. Do not access in showers, bathtubs, pools or sauna. Rain, snow, salt, fog/spray conditions and frozen/smooth surfaces caused rust or corrosion of wheelchair screws or some of the fixtures.
 - Long exposure under extreme heat and cold may affect upholstered and non-upholstered parts and damage battery components.

SAFE USE GUIDELINE

Suitable Surfaces

1. The wheelchair is suitable for travelling on concrete, asphalt, indoor flat surfaces in the vicinity of interiors, hospitals, nursing homes and homes and buildings only.
2. Do not operate the wheelchair on sand, loose soil or rough and rugged terrain to prevent damage of bearings, axles or motor, and possible loosening of fasteners.
3. Do not drive on grass, gravel roads, slopes greater than 8° and motorways, and do not operate in rain or snow.
4. Do not drive on public roads.

Driving

In most countries and regions it is illegal for powered wheelchairs to drive in motor vehicle lanes. It is dangerous for electric wheelchairs to drive on roads or parking lots.

1. When driving at night or in darkness, reflective stickers attached on electric wheelchair are helpful (Refer to Photo 4). User can also wear a garment with reflective material.
2. Make sure the drivers of vehicles notice you easily.



Photo 4



Safety tips for riding motorized vehicles

1. Do not drive electric wheelchair on to transportation vehicles, such as buses, subways, trains, planes and ships.
2. Don't park the electric wheelchair in the front of any vehicle.
3. The wheelchair is designed to be driven into lift car for lifting and lowering. Once inside lift, switch off power and the person must be seated firmly to ensure that the vehicle does not move.
4. Do not attempt to operate wheelchair under conditions contrary to the suggested use listed in this manual for example weight training, towing for sports and athletics, fast moving or towing which may result in hazards and excessive stress of the wheelchair.

Balanced Driving

Your power wheelchair should be kept stable and in balanced to center of gravity while driving to avoid overturning. The center of gravity balance is affected by the following factors:

1. The seat height and angle.
2. Dynamic body position, posture or weight distribution of user.
3. The angle of ramp or slope.
4. The load and weight distribution change of the wheelchair by applying accessories such as backpacks, cane holders, etc.

SAFE USE GUIDELINE

Warning!

Do not make any unauthorized modifications to the wheelchair. Adding accessories may change some of the specifications of the wheelchair such as the total weight, dimensions or the center of gravity. Be aware that some changes may damage things around you.

Do not alter specifications of your seat. Do not stack any cushion or pillow on the seat. This may cause seat to be unstable and fall may occur.

If modification or adjustment of this electric wheelchair is required, please consult with your dealer.

Precautions for getting on/off electric wheelchairs

1. Before sitting on the electric wheelchair, please make sure to turn off the power first. If you touch the joystick, it may cause electricity. The wheelchair could move unexpectedly if the joystick is accidentally touched.
2. Learn safest way to move your body from your health care professionals, the way to position your body and properly support yourself in the process of moving.
3. Ask for help if you can not safely get on and off the electric wheelchair alone.

The correct way to get on/off an electric wheelchair

1. Keep electric wheelchair as close as possible where you want to sit. If possible, use a transfer board.
2. Rotate the front casters as forward as possible.
 - **Don't stand on the footplate** to move your body, it may lead to harm.
 - Make sure your feet are not caught between the footplate and frame of the wheelchair.

- Move to the seat as soon as possible, it reduces the risk of missing seat and falling.

Be careful every time you move yourself. Have a support point that is not lower than the seat cushion surface.



Precautions of leaning while seated in wheelchair

Body part extending, leaning and stretching will affect balance and center of gravity of the electric wheelchair, which may cause you to fall or turn over with improper operation. Follow the key points below to reduce the risk of physical injury and damage:

1. When repositioning yourself, please don't lean out of the range of seat cushion of the electric wheelchair.
2. Move forward in your seat. Please don't lean over (Refer to Photo 6).
3. Under no circumstances should you try to pick up items from between your knees or in front of your body (Refer to Photo 6).
4. Don't put pressure on the footplate when your body is extended.
5. Don't lean against the top of the seat back to prevent from falling and damaging the back.

SAFE USE GUIDELINE



Warning!

Remember :

Move your electric wheelchair as close as possible to what you want to achieve. Rotate the front casters until they are as forward as possible. This will make the electric wheelchair more stable.

Passing over Obstacles

You may need to overcome some obstacles in daily use, including doorsill, elevator, ramp, pit and broken pavement, etc. Improper operation may damage your electric wheelchair, and also cause personal injury.

1. Please note thresholds can be dangerous. Even a small threshold may jam the casters and tilt the electric wheelchair. It is recommended to remove the threshold of the room or cover the threshold to slope. Install a ramp to access door.
2. Please carefully check the area you want to pass, making sure your wheelchair can smoothly and safely cross obstacles.

3. Adjust your center of gravity by the following methods: When about to cross an obstacle or pass a section from low to high, slightly tilt your upper body forward. When passing through a section from high to low, upper body should press back.

Driving in Reverse

1. When driving in reverse, please always slow down.
2. Check from time to time to ensure that there are no obstacles endangering safety.

Driving on incline/slope/hillside

When on a slope your wheelchair's center of gravity will change. If you are unsure if your wheelchair is safe to drive on a slope please seek assistance. Do not travel up or down the slope without assistance from an attendant.

Matters needing attention:

1. For your safety, please don't use this electric wheelchair on a slope with a gradient greater than 8°.
2. Please don't use electric wheelchair on slippery slopes (such as snow, ice, water or oily film).
3. Please don't use this electric wheelchair on slopes that have bumps and depressions.
4. If there is a small pit at the bottom of the slope, please do not use this electric wheelchair.

SAFE USE GUIDELINE

Weight Restrictions

1. The maximum load of this electric wheelchair is 330 lbs, and the load in use should not exceed this maximum load.
2. The bearing capacity of the rear backrest is less than 165 lbs, it is not allowed to press down or lift the rear backrest.
3. Under no circumstances, do weight training on this electric wheelchair, even if the user's weight is added with the lifted weight.
4. No warranty is provided for problems caused exceeding the weight limitations of the wheelchair.

Matters needing attention when going up and down stairs



Warning!

This electric wheelchair is not used for going up and down stairs or using escalators.

1. **Always pay attention to the following warnings when using the elevator:**
 - Do not use escalators (stepped elevators) between floors to move electric wheelchairs, so as to avoid serious accidents and personal injury.
 - You can use the elevator when sitting in an electric wheelchair. Please operate the electric wheelchair after the elevator door is opened, and ensure that the elevator door is always open when the electric wheelchair enters and exits the elevator.

2. **When you want to move an electric wheelchair through stairs between floors, you should operate according to the following specifications:**
 - Get off electric wheelchair.
 - Take caution when transporting the wheelchair up and down stairs to avoid hitting the chair against walls or nearby objects. It may be necessary to remove the joystick controller when transporting to avoid damage.

INITIAL SETUP

Components

Your CarbonTouch Power Wheelchair will arrive carefully packaged in a cardboard box.

Open the top of the box then turn the box on its side to remove the wheelchair and contents easier.

Joystick



Chair



Tools



Charger



Lithium Battery



Safety Belt



Seat Cushion



Users Manual



INITIAL SETUP

1. To open the CarbonTouch power chair, grasp the push bar and pull up while holding down on the seat (Refer to Photo 7).



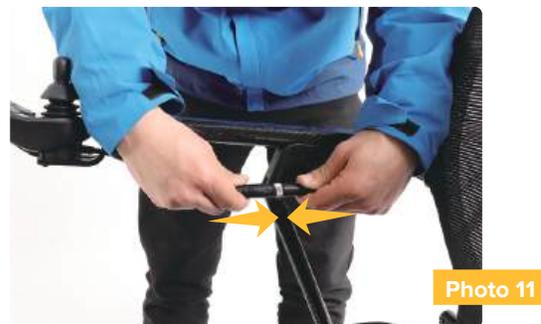
2. Continue to expand the chair into a seated position until you hear a *CLICK* indicating it has locked into the seated position (Refer to Photo 8).

3. Locate the seat cushion provided. Place the seat cushion toward the rear of the seat with the zipper facing the wheelchair's backrest. Align the Velcro on the bottom of the seat cushion with the velcro on the seat. (Refer to Photo 9).



4. Install the joystick into the open slot on the arm of the chair, on the right side (if needed, can change to left side). Tighten knob located under the armrest to secure the controller in place (Refer to Photo 10).

5. Connect the joystick wire harness to the CPU wire harness. Line up the pins properly as arrow tip indicates, so that they do not get bent, broken or damaged (Refer to Photo 11).



INITIAL SETUP / BATTERY SETUP

Seat belt installation

The seat belt plays a role of restraining displacement and buffering, preventing user from sliding down the seat forward. Seat belt can be adjusted in length according to the user's comfort. In case of accidents, it will firmly hold the user to the seat to prevent personal injury caused by secondary collision.

1. **Install seat belt:** Ensure that the seat belt has bound the waist of the body with the lower part of the backrest frame of the electric wheelchair.
2. **Adjust the seat belt according to user's comfort:** Adjust the seat belt to the appropriate length and user comfort.
3. **Unbuckle your seat belt:** Press the two(2) side buttons on the buckle simultaneously to release the seat belt.
4. **Folding Seat:** Unbuckle the seat belt. Drape each end of the belt over the nearest armrest before folding the seat.

Install the battery

Grasp the battery handle, align the bottom end of the battery with the notch of the battery protection box and insert it. (Make sure the battery is inserted all the way so that the battery locking lever snaps into the slot of the battery protection box. You will hear a click when it locks in place.) (Refer to Photo 12).



Remove the Battery

Press the locking lever under the battery with your finger (Refer to Photo 13). At the same time grab the handle of the battery box and pull it out (Refer to Photo 14).



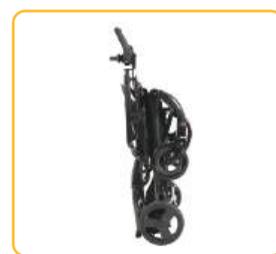
Warning!

1. Please ensure that the power to the wheelchair is turned off before performing this operation.
2. Make sure all the attaching parts are fastened properly after any adjustment, repair or maintenance, to avoid any damage or injury.

FOLDING AND UNFOLDING

Steps for Wheelchair Folding

1. Before folding the chair, ensure the seat belt is unbuckled and belt ends are draped over corresponding armrests to allow chair to fold.
2. With one hand, press down on the red folding release lever at the rear of the wheelchair. At the same time use the opposite hand to push the top of the backrest forward the front of the wheelchair.
3. Stand at the side of the chair. Grasp the push bar with one hand. Use the opposite hand to grasp the front seat frame.
4. With the push bar and seat frame held securely, push the top of back rest and front end of seat together.
5. Fold the footplate up



Steps for Wheelchair Unfolding

1. Unfold footplate.
2. Stand at the side of the wheelchair and hold the top of backrest with one hand, the other hand holding the front end of the seat frame.
3. Push both hands away until the chair is open and a "click" sound is heard. The "click" indicates the chair is completely unfolded and locked in position.



Warning!

Make sure that the seat belt is properly fixed around the lower backrest of the electric wheelchair and adjusted to the most comfortable state for the user. Check whether the seat belt is loose or damaged. If you find a problem, please contact your dealer for maintenance and repair.

JOYSTICK CONTROLLER

Control Panel

The CarbonTouch Power Chair is equipped with a joystick controller. Function details as shown.



USB Charging Port

Charging Port



Joystick

Direction speed and braking control



JOYSTICK CONTROLLER

Joystick Controller and Driving Tips

Warning!

1. Never make sharp turns while at high speed.
2. Failure to follow the "Warning" may cause tilting of the electric wheelchair and result in injury or product damage.
3. The location of joystick is at lower part of the control panel for controlling the speed and direction smoothly. With 360°directional rotation performance, convenience of operation, there is a spring designed for returning to the initial intermediate status.
4. Push the joystick toward the direction desired. The joystick controls your driving proportionally. Greater push, the faster the speed will be. Top speed is limited to 6 km/h (3.7 mph).
5. To slow down the speed of the electric wheelchair, reduce the pushing of joystick forward.
6. Learn how to drive electric wheelchair before full operation. Try at slow speed and move lightly. Gently tilt the joystick forward at lowest speed. Practice to become fully familiar with the wheelchair, including controlling, and starting and stopping the wheelchair smoothly.
7. Wheelchair may come to sudden stop at any time during operation. If the wheelchair behaves abnormally or irregularly, immediately stop operation. Should the wheelchair move in an unexpected direction, out of control or the brake is out of order, please immediately release the joystick and press the power off.
8. Do not change the controller settings. Please contact your service provider if you experience issues with your controller.

Joystick Operational Direction

The joystick allows you to control the forward, backward, left and right turning, acceleration, deceleration and parking of wheelchair.



Joystick stays vertically at standby, push it forward so the wheelchair will move forward. The more pressure you apply forward, the faster the speed will be.



Gently reduce the forward push pressure on joystick for slowing down the speed. The wheelchair will be returned to stop and brake status when the joystick returns to vertical position.



The wheelchair will turn to right, back or go backward depending on the rotation degree of joystick.

JOYSTICK CONTROLLER

Screen Display

Freewheel Indicator



Freewheel mode is engaged. Disengage freewheel levers to drive.

Temperature



Overheating

Too Cool

Speed Limitation Reminding



Reminding of speed limit from low power. Immediate charging required

Real-time Speed

0.0 km/h

Gear 1

Battery Power Display



100 km

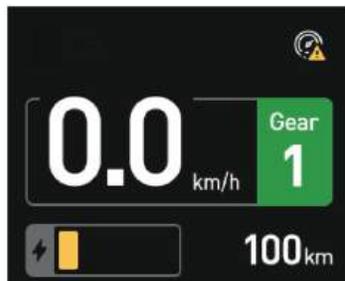
Speed Section

Speed section is set by [+] [-] key between 1 (lowest) and 5 (fastest)

Accumulated Kilometers

Low Battery Power

Indication turns yellow with on bar displayed. The speed limit warning icon shows up the upper right corner.



No Power

The speed limit warning icon at the upper right corner lights up while the battery power is running out.



Charging Status

The green icon is flashing all the time with green while charging.

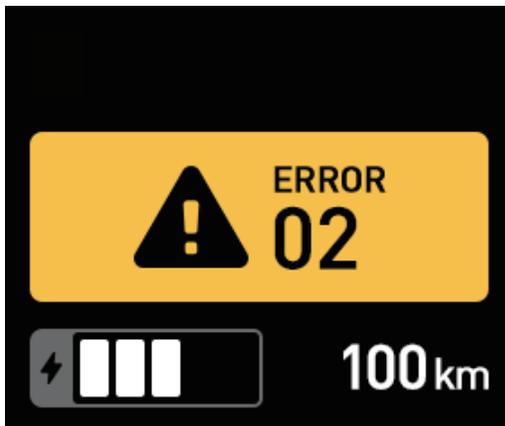


JOYSTICK CONTROLLER

Screen Display



Press the left or right button for 5 seconds to select the page desired, three pages available in total



Code Pop-Up

Fault codes may appear on your display at times. Refer to the Diagnostics section of manual for explanation of code. If unable to resolve code please contact your dealer.

CHARGING BATTERY

Use of Battery

Your CarbonTouch wheelchair will arrive with full charged battery, which should last about 10.5 miles (17 km) under normal operation conditions. We recommend that you run the CarbonTouch Power Wheelchair until the battery is completely dead in order to get the most out of the battery life.



Do not use batteries with different capacities, brand and type when replacing the battery. If using the wheelchair with the optional battery installed, ensure both the original battery and optional battery are replaced together. Do not mix old and new batteries.



The positive and negative electrodes of the battery cannot be connected with conductive objects such as metal, which may cause short circuit or electric shock.



Keep away from flammable material. Do not approach or be exposed to heat sources, such as open flames or sparks. When transporting batteries, do not place them with flammable or combustible material.



There are corrosive chemicals in the battery. It is forbidden to disassemble the battery without permission.



It is not allowed to short-circuit the battery.

On-board Charging Method

Charge the battery via controller charge port.

1. Turn the power off.
2. Plug in the charger to the controller port (Refer to Photo 15) connecting the charger cable first. Connect the charger's power cord to the wall outlet.



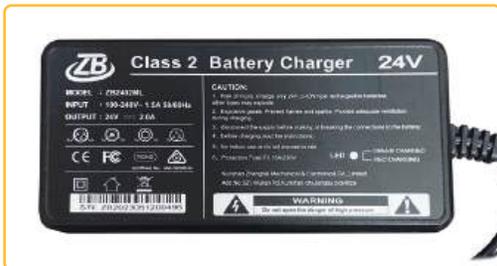
Photo 15

CHARGING BATTERY

Warning!

Do not charge continuously over 6 hours through charging port of controller to prevent overcharging while the battery is connected to the socket contact on the frame.

1. Allow your wheelchair to charge for 6 hours for full charge, or when the light on the charger turns green, which means your batteries are fully charged.
2. A description of each light color and what they mean is located on the back of the charger.



Definition of what the light colors mean



Charger light

GREEN color indicates fully charged.
RED - battery is charging.



It is not charging while green light is on.

Off-board Charging Method

1. Turn off the main power.
2. Flip open the charger port protector on the front of battery.
3. Plug the charger into the battery directly. Connect the charger's power cord into the wall outlet. (Refer to Photo 16).



Photo 16

Warning!

1. To avoid overcharging do not keep the charger connected to your battery for more than 6 consecutive hours.
2. Immediately unplug charger from power source as soon as indicating light on charger turns green.
3. Do not operate the wheelchair while the battery is charging. It is required to unplug charger from power source prior to operating the wheelchair.
4. Charging cycles is 500 times for single battery life.

CHARGING BATTERY

Charging Tips



Warning!

1. When charging electric wheelchair, it is better to charge the batteries through the joystick controller. Don't charge the battery in vehicles. All batteries must be fully charged before plugged in electric wheelchairs.
2. Do not directly connect the battery terminal with the battery clipper or metal cable trying to charge the battery.
3. Never use electric wheelchair while battery is charging. Do not choose non-standard power supply (such as generators or inverters), even if their voltage and frequency meet the requirements.
4. Take caution to not trample, squeeze or severely bend the power cord, especially at the port. Prevent power cord from being yanked or knotted.
5. Keep children and pets away from the power cord, and don't let them bite and chew the power cord. Remove the power cord from outlets and charging port by pulling from the plug, not the cord.
6. Please unplug the charger immediately and contact your dealer if the circuit breaker trips repeatedly while charging.
7. Always use the original charger approved for use with your chair.
8. Do not charge in temperatures below 0°C. Proper charging ambient temperature is recommended 0°C ~ 45°C. Do not charge while the joystick controller is turned on to avoid malfunction and fire.
9. Keep all charger power cords and connecting terminals clean and dry. Keep away from sources of moisture to prevent damage to the electrical system and any personal injury.



Warning!

1. Warning: When the battery power indicator on the joystick display is red, please stop driving and charge your battery or replace with a fully charged battery.
 2. Warning: Please disconnect the charger immediately and do not touch the charger plug if the plug to the controller falls off during charging state.
 3. All charging instructions should be followed to ensure best battery performance and to maintain battery warranty.
-
1. Charging the battery before first time using the wheelchair will reduce the service life of the battery. (It is highly recommended to use up the electricity of battery for the first time then charge fully. This will completely activate the battery).
 2. After first-time use of the wheelchair (completely discharging battery), charge the battery fully to ensure the battery is fully activated. New battery must be fully charged for the first time to ensure that the battery is fully activated after the very first time use.
 3. It is recommended that time for the battery charging is about 6 hours until the red light on the charger turns green.
 4. Charge the battery fully after each use. If the wheelchair is stored or will not be used for an extended period of time be sure to charge the battery once every 2 months. Not charging your battery periodically may adversely affect the battery life, and in some cases the battery may become unusable.
 5. Never use batteries with wrong specifications, voltages and capacities, it may damage your electric wheelchair.
 6. The charging cycle of the battery is approximately 500 times, service life is 2-5 years. If the battery is damaged it should be replaced through your authorized dealer.

CHARGING BATTERY

Overdischarge Protective Device

When the battery of the electric wheelchair is exhausted, Overdischarge Protective Device will protect the battery from overdischarging. When the Overdischarge Protective Device is activated, the wheelchair's maximum speed will be decreased. Please charge the battery as soon as possible.

Overcurrent Protection

This system is included on the wheelchair and will shut off the current from the batteries if triggered, thus shutting the motor down, which will ensure that the motor and battery do not experience damage.

FREE WHEEL MODE

To push the power wheelchair, it must be put in Free Wheel Mode. This mode disengages the drive mechanism to the wheels, making them free to roll manually. We recommend that you turn off the power of wheelchair when in this mode, both for safety and to save battery power.

1. To put the CarbonTouch in Free Wheel Mode, come to a full stop and turn off the power on the controller.
2. Push the two red freewheel levers forward toward the front of the wheelchair into "free wheel mode" position. To disengage, push the levers toward the back of the chair into "drive mode". (Refer to Photo 17).



The freewheel symbol will show on your display when freewheel mode is engaged. Disengage both freewheel levers to drive.

TRANSPORTING YOUR CARBONTOUCH POWERCHAIR

Do not use transit tie-downs or restraint systems to transport the CarbonTouch power wheelchair, as it is not designed for use in public transit vehicles. Never sit in the wheelchair and be transported in moving vehicle. Do not place the folded power wheelchair in the front seat with driver where it could move and slide.

1. Turn off the power from the joystick controller.
2. Remove seat cushion.
3. Push down the red release button at the rear of the wheelchair with one hand and push the top of backrest toward front with another hand at the same time to unlock the frame (Refer to Photo 18).
4. Fold the wheelchair.
5. When folded, the cross bar at the front of the seat can be used to move the wheelchair easily (Refer to Photo 19).



TRANSPORTING YOUR CARBONTOUCH POWERCHAIR

Direction for Use

1. **Transportation requirements:** For safe transportation, batteries should be removed from the device and stored separately to minimize the risk of damage from vibration or impact. Ensure batteries are kept away from direct sunlight and moisture. When transporting by air, the battery charge level must not exceed 25%.
2. **Storage requirements:** The battery should be stored in a clean, dry and ventilated room with an ambient temperature of 25°F ~ 95°F and a relative humidity of no more than 75%. Avoid contact with corrosive substance and keep away from fire and heat source.
3. **Cleaning method:** Wipe with clean and soft paper towel or cloth. Do not clean the wheelchair directly with water. Never make direct contact with water.
4. Before discarding the wheelchair battery please contact your local sanitation department regarding proper disposal. Battery should be disposed of according to local sanitation guidelines.
5. Never transport the wheelchair or battery with flammable materials. For safer transportation, keep power off at all times. This will prevent unexpected movement of the wheelchair if the joystick controller is accidentally touched. Make sure brakes are all engaged.
6. For the warranty periods listed below, beginning at the date of original purchase, Drive Medical will repair or replace, at its option to the original purchaser, free of charge, any of the following parts found upon examination by an authorized representative of Drive Medical to be defective in materials and/or workmanship. The warranties contained herein extend and apply only to the original purchaser.

WARRANTY

Warranty

Chair frame	3 years	Motors	1 year
Controller and CPU system	1 year	Battery	6 months
Wear parts: Includes non-durable parts and components such as plastic and rubber pieces, tires, seat and back rest, armrests, and support straps.			3 months

The warranty does not cover:

1. Products damaged by user negligence.
2. Products damaged accidentally.
3. Products damaged intentionally.
4. Products that have been subjected to negligence.
5. Products that have been subjected to abuse.
6. Products that have been improperly stored.
7. Products that have been improperly handled.
8. Products that have been improperly operated.
9. Products that have experienced general misuse.
10. Products that have been modified in an unauthorized, unapproved way.

Warranty is non-transferable and only valid for the original wheelchair purchaser.

The company reserves the right to make any change and improvement without prior notice.

MAINTENANCE AND TROUBLESHOOTING

The battery life determines the service life of the wheelchair. Try to keep the battery saturated after each use. It is recommended to conduct a deep discharge every month! If you don't use the wheelchair for a long time, store it in a place to avoid bumps and pull out the battery to reduce discharge. It is also best not to overload during use, which has direct harm to the battery (Refer to Photo 20).



Photo 20

It is necessary to check the wheelchair periodically for loose screws, as screws may loosen over time with use of the chair. Ensure tight connection and proper operation between the parts and components to avoid accidents (Refer to Photo 21).



Photo 21

Keep your wheelchair clean and dry. If the wheelchair gets wet wipe it immediately with a dry cloth, especially parts containing electrical circuit (Refer to Photo 22).



Photo 22

Sand, mud, and gravel on the wheelchair's tires should be cleaned as soon as possible to prevent some parts from rusting or the tire running badly.

Keep sharp objects away from the wheelchair to avoid scratching the frame or tearing the upholstery.

Avoid direct sunlight. Do not store the wheelchair in direct sunlight. Direct sunlight can be harmful to the battery and plastic parts of the wheelchair. (Refer to Photo 23).



Photo 23

Do not allow children or adults not familiar with the wheelchair to operate the wheelchair. Do not sleep in the wheelchair. Avoid unnecessary large scale body movements while in the wheelchair.

Maintenance tool: A simple tool kit is accompanied with wheelchair in wheelchair packing. The maintenance frequency may vary depending on the real use frequency and situation, there is no specific rule.

MAINTENANCE AND TROUBLESHOOTING

Maintenance Frequency

1. Daily check

Turn off the controller, check the joystick. Make sure the joystick is not bent or broken, and that it returns to center when you release it. If any issues are found, please contact your dealer for assistance.

2. Weekly check

Disconnect the controller connector and charger connector from the battery box. Check the connection for corrosion. If necessary, please contact your dealer.

Make sure that all parts of the controller are tightly connected to the wheelchair. Do not screw the screws too tightly.

Check the brakes. This inspection must be carried out on a level surface with plenty of open space to perform the inspection.

Check the brakes:

- Turn on the controller. After one second, check the battery indicator to make sure the battery is powered.
- Slowly push the lever forward to guide you to hear the "click" of the brakes, and immediately release the lever. You must hear the brake operation sound after each lever is pushed for a few seconds.
- Repeat the operation three times to push the controller to the rear, left and right sides for inspection.

3. Monthly check

- Check the wear of the front wheels and drive wheels. If maintenance is required, please contact your dealer.
- Check the front fork for wear and looseness, which may indicate that adjustment is needed or the bearing needs to be replaced. Please contact the dealer for repair, or replacement.
- Keep the product clean and do not leave debris, such as food, beverages, residues, etc.

4. Storage

This product should be stored in a cool and dry environment. Do not store it at extreme temperature. If it cannot be stored under the conditions below, it may cause rusting of the wheelchair, and damage to the electrical system. Storage conditions: temperature: -40 ~ 149°F; Relative humidity: W80%; Atmospheric pressure: 86kPa ~ 106kPa.

If you encounter a problem with your wheelchair or require replacement parts such as batteries, tires, charger, etc., please contact your authorized local Dealer or Distributor for assistance.

It is highly suggested to use original parts from manufacturer to avoid potential issues or product failure.

MAINTENANCE AND TROUBLESHOOTING

Here are some commonly asked questions and helpful troubleshooting steps to guide you through issues that may occur with your wheelchair. Also see the Diagnostics section of your manual for fault codes.

Question	Possible causes	Answer
Why is there No Power to the wheelchair?	<ol style="list-style-type: none"> 1. Controller system power is not connected. 2. Controller system CPU and joystick are not connected. 3. Battery power is too low. 	<ol style="list-style-type: none"> 1. Connect the battery. 2. Ensure all connections between joystick, CPU and battery are securely tightened. 3. Charge the battery.
Why is the wheelchair noisy or vibrating when turning?	<ol style="list-style-type: none"> 1. Speed is set too low. 2. Motor is damaged. 	<ol style="list-style-type: none"> 1. Raise the speed. At low speeds, the motor may sound or feel strained. 2. Replace the motor.
Why can't I charge the battery?	<ol style="list-style-type: none"> 1. Charger light does not turn on. 2. Charger light is always green. 3. Charging time is stopped before full charge is complete. 	<ol style="list-style-type: none"> 1. Replace the charger. 2. Battery is not connected, or may need to be replaced. 3. Capacity of battery as decrease over time. This is normal.
Why can't I connect the joystick controller?	<ol style="list-style-type: none"> 1. Connector pins (male) on the controller have become bent and misaligned with connector holes (female) on the CPU connector. 	<ol style="list-style-type: none"> 1. Please contact your dealer for further assistance.

DIAGNOSTICS

Fault code	Cause of failure	Inspection and handling methods
01	Abnormal joystick position	Release joystick for returning to normal position.
02	Electromagnetic Braking is not engaged	Engage the brake.
12	Joystick signal communication error	Check all the wheelchair wiring harness.
14	Joystick is out of order	Damage of joystick, replace new one.
22	Battery signal communication error	Inspect the connection of battery quick release plug.
23	Low temperature charging fault	Keep wheelchair under higher temperature condition for charging while ambient temperature is too low. Power on again.
24	Low temperature discharging fault	Keep wheelchair under higher temperature condition for discharging while ambient temperature is too low. Power on again.
25	Charging temperature is too high	Recharge again after the battery temperature is dropped.
26	Charging current fault	Charger is out of order, please replace the charger.
27	Discharging temperature is too high	The temperature of the battery is too high internally. Turn it off and wait, then turn it on again.
28	Discharge current fault	Unplug the battery and replace it.
29	Over voltage fault	If the battery voltage is too high, turn it on and leave it for a while. Then turn it off and turn it on again.

DIAGNOSTICS

Fault code	Cause of failure	Inspection and handling methods
30	Under voltage fault	The battery voltage is too low, charging is required.
31	Charging failure	Replace the charger. If it the fault still there, replace a new battery.
42	Controller signal communication abnormality	Check connection of signal communication interface.
43	Left drive is not connected.	Check whether the connector between motor and controller is well connected.
44	Left drive over temperature	Power off. Wait for a few minutes before turning it on again. If the fault is still there replace the driving device.
45	Left drive is overload	Power off and wait for a few minutes before turning it on again. If the fault does not disappear. Replace the drive.
46	Left drive is abnormal	<ol style="list-style-type: none"> 1. Inspect the left drive lever is at right position. 2. Inspection the connecting wire is well connected.
47	Left motor is out of order	Inspect the connection of driver and motor.
48	Left motor MOS failure	Replace the motor driver.
49	Left motor phase fault	Inspect the connection of driver and motor.
50	Left motor is locked	Release joystick. If the fault does not disappear, replace the motor.

DIAGNOSTICS

Fault code	Cause of failure	Inspection and handling methods
51	Left motor phase current offset value is fault	Replace the motor driver.
52	Left motor main wire current fault	Replace the motor driver.
53	Left motor is not connected	Inspect the connection of driver and motor.
54	Right drive is not connected	Inspect the connection of driver and motor.
55	Right drive over temperature	Power off. Wait for a few minutes before turning it on again. If the fault does not disappear. Replace the drive.
56	Right drive over current	Power off and on again. If the fault does not disappear, replace the drive.
57	Right brake fault	Inspect the connection of driver and motor.
58	Right motor is out of order	Inspect the connection of driver and motor.
59	Right motor MOS failure	Replace the motor driver.
60	Right motor phase fault	Inspect the connection of driver and motor.
61	Right motor is locked	Inspect the connection of driver and motor.

ELECTROMAGNETIC INTERFERENCE & COMPATIBILITY

Fault code	Cause of failure	Inspection and handling methods
62	Right motor phase current offset value is fault	Replace the motor driver.
63	Right motor main wire current fault	Replace the motor driver.
64	Right motor is not connected	Check whether the driver and motor connectors are loose.
65	Controller power is cut off	Turn the vehicle off and power on again.
66	Handrail position fault	Adjust proper handrails position.
72~99	Drive failure	Replace driver.

1. CarbonTouch Power Wheelchair meets the electromagnetic compatibility requirements of IEC60601 standards.
2. The user shall install and use according to the EMC information provided in the attached documents.
3. Portable and mobile RF communication equipment, such as mobile phones, microwave ovens, etc., may affect the performance of electric wheelchair. Avoid strong electromagnetic interference when using.
4. The guide and the manufacturer's statement are detailed in the annex.



Warning!

1. Do not operate portable transceivers, receivers, radios such as Citizen Band (CB), or turn on personal communication devices such as cellular phones, when the wheelchair's power is on.
2. Please observe the following when using the powerchair to avoid sources of radio wave emissions, such as radio and television stations.
3. If the wheelchair begins to operate abnormally while driving, turn off the power promptly and contact your dealer.
4. Installation of certain accessories may cause interference.
5. The adoption of accessories and cables differed from original maker, may result in increased emissions or reduced immunity of the equipment or system.
6. The wheelchair is not intended for use in the vicinity of wireless power transfer (WPT) environment. Do not use of the device in the vicinity of wireless power transfer environment.

GUIDELINES AND MANUFACTURER'S STATEMENT

Guidelines and manufacturer's statement - Electromagnetic Immunity

CarbonTouch Power Wheelchair is expected to be used in the electromagnetic environment specified below, and the buyer or user of the electric wheelchair vehicle shall ensure that it is used in this electromagnetic environment.

Anti-interference measurement	IEC60601 Test Level	Coincidence level	Electromagnetic environment-Guidelines
Electrostatic discharge (ESD) ISO7176 IEC60601	±6 KV Contact discharge ±8 KV Air discharge	±6 KV Contact discharge ±8 KV Air discharge	The floor should be wood, concrete or ceramic tile, and if the floor is covered with synthetic materials, the relative humidity should be at least 30%.
Electrical fast transient burst ISO7176 IEC60601	±2 KV To the power cord	±2 KV To the power cord	The power supply in the hospital or in the commercial environment should be of typical quality.
Surge ISO7176 IEC60601	±1 KV Differential-mode voltage ±2 KV Common mode voltage	±1 KV Differential-mode voltage	The power supply in the hospital or in the commercial environment should be of typical quality.
Voltage sag, short int eruption and voltage variation on power in put line ISO7176 IEC60601	<5% U_T , Last for 0.5 circuits (on U_T , >95% sag) 40% U_T , Last for 1 circuit (on U_T , 60% sag) 70% U_T , Last for 25 circuits (on U_T , 30% sag) <5% U_T , Last for 5 seconds (on U_T , >95% sag)	<5% U_T , Last for 0.5 circuits (on U_T , >95% sag) 40% U_T , Last for 1 circuit (on U_T , 100% sag) 70% U_T (Last for 25 circuits (on U_T , 30% sag) <5% U_T , Last for 5 seconds (on U_T , >95% sag)	The power supply in the hospital or in the commercial environment should be of typical quality. If the users of electric wheelchair need continuous operation during power interruption, uninterruptible power supply or battery power supply is recommended.
Power frequency magnetic field (50/60Hz) ISO7176 IEC60601	30 A/m	30 A/m	The power frequency magnetic field should have the horizontal characteristics of power frequency magnetic field in typical commercial or hospital environment.

Note: U_T refers to the AC network voltage before the test voltage is applied.