



C.T.M. MOBILITY SCOOTER

5-Series Instruction Booklet



HS-575



HS-585



TABLE OF CONTENTS

Introduction	1
Important Precautions	2
Electromagnetic Interference and Warnings	3
Identification of Parts	6
Operating Your Scooter	10
Disassembling Your Scooter	12
Re-assembling Your Scooter	14
Charging the Batteries	15
Care and Maintenance	17
Troubleshooting	18
Technical Specifications	20

INTRODUCTION

Thank you and congratulations on purchasing your new C.T.M. Mobility Scooter. It is designed to provide you with transportation indoors and outdoors.

Chien Ti Enterprise Co., Ltd. is the manufacturer for the C.T.M. mobility scooter. We pride ourselves on providing safe and comfortable products. Our goal is to ensure your complete satisfaction with our product. We are certain that you will enjoy your C.T.M. mobility scooter.

Please read and observe all warnings and instructions given in the owner's manual before operating this scooter. Also, retain this booklet for future reference.

If you have any questions, please contact your local dealer or:

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or your local dealer:

IMPORTANT PRECAUTIONS

Only one person at a time can ride a C.T.M. Mobility Scooter.

Maximum load is 135 kg / 300 lbs.

Turn the key off before getting on or off your scooter.

Always drive carefully with your feet on the floorboard and be aware of others in your area.

Always use pedestrian crossings where possible. Take extreme care crossing roads.

Do not drive on slopes exceeding 12 degrees, and take extreme care when turning on slopes.

Do not use full power when turning sharp corners.

Do not drive the scooter unless the seat and the tiller are locked and secured in the driving position.

Do not use the scooter if the rear anti-tip wheels are damaged or removed.

Take great care and use low speeds for backing up, riding downhill, over uneven surfaces and curb climbing.

The scooter may not operate well in high humidity.

Never put your scooter in neutral on slopes.

Follow all traffic laws when you ride in the vicinity of public roads.

It is NOT recommended to use your scooter in wet environments as it may cause damage. Electronic equipment damaged by any liquid form is not covered under the warranty.

ELECTROMAGNETIC INTERFERENCE AND WARNINGS

CAUTION: It is very important that you read this information regarding the possible effects of Electromagnetic Interference on your powered wheelchair.

Powered wheelchairs and motorized scooters may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) 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 motorized scooter to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the motorized scooter control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each motorized scooter can resist EMI up to a certain intensity. This is called its "immunity level." The higher the immunity level, the greater the protection will be. At this time, current technology is capable of achieving at least a 20 V/m immunity level, which would provide useful protection from the more common sources of radiated EMI.

There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized.

The sources of radiated EMI can be broadly classified into three types :

1. Hand-held portable transceivers (transmitters-receivers) with the antenna mounted directly on the transmitting unit. Examples include: citizens band (CB) radios, "walkie talkie," security, fire, and police transceivers, cellular telephones, and other personal communication devices.



Some cellular telephones and similar devices transmit signals while they are ON, even when not being used.

2. Medium-range mobile transceivers, such as those used in police cars, fire trucks, ambulances, and taxis. These usually have the antenna mounted on the outside of the vehicle.

3. Long-range transmitters and transceivers such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.



Other types of hand-held devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, and cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to your motorized scooter.

Motorized Scooter Electromagnetic Interference :

Because EM energy rapidly becomes more intense as one moves closer to the transmitting antenna (source), the EM fields from hand-held radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the powered wheelchair's control system while using these devices. This can affect motorized scooter movement and braking. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of the motorized scooter.

Warnings :

Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect powered wheelchairs and motorized scooters. Following the warnings listed below should reduce the chance of unintended brake release or powered wheelchairs movement, which could result in serious injury.

1. Do not operate hand-held transceivers (transmitters-receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, while the powered wheelchairs 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 motorized scooter OFF as soon as it is safe;

4. Be aware that adding accessories or components, or modifying the powered wheelchairs may make it more susceptible to EMI; and.

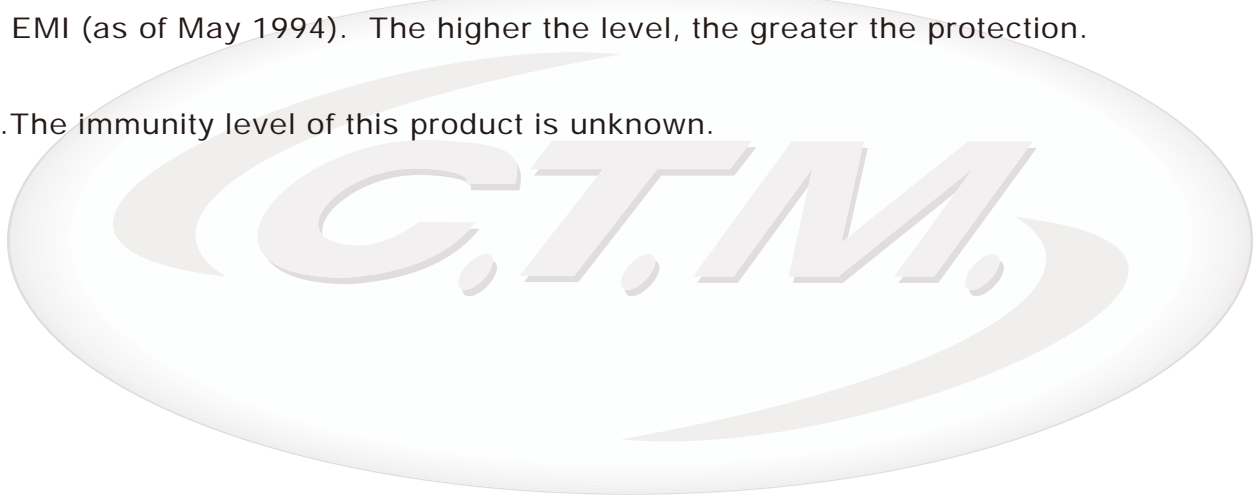


There is no easy way to evaluate their effect on the overall immunity of the motorized scooter.

5. Report all incidents of unintended movement or brake release to the distributor listed on the inside front cover of this manual. Note whether there is a source of EMI nearby.

Important Information :

1. 20 volts per meter (V/m) is a generally achievable and useful immunity level against EMI (as of May 1994). The higher the level, the greater the protection.
2. The immunity level of this product is unknown.



IDENTIFICATION OF PARTS

Before attempting to drive this scooter on your own, it is important that you familiarize yourself with the controls and how they operate.



Figure 1 - HS-585 Front View

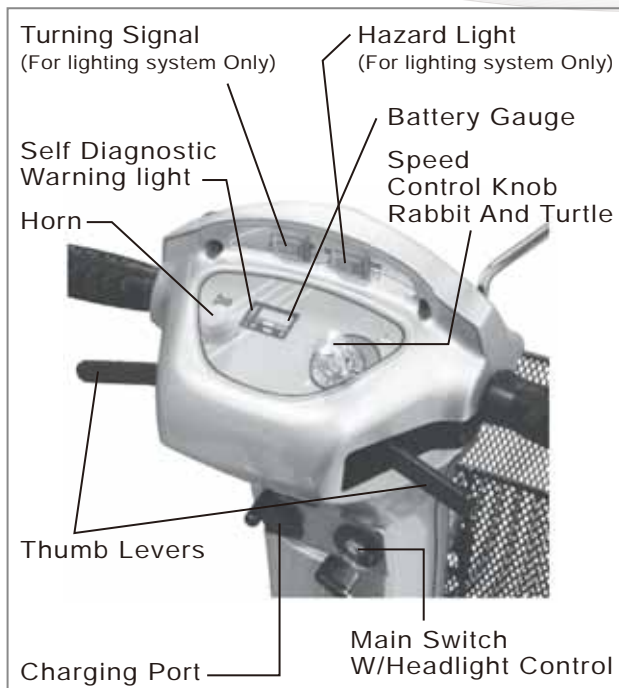


Figure 2 - HS-585 Top Control Panel



Figure 3 - HS-585 Back View

Function Of Parts :

TOP CONTROL PANEL

Speed Control Knob

The rabbit means fast and the turtle means slow. By turning this knob, you can control the total speed transferred to the thumb controls.

Self Diagnostic Warning Lights

Flashing of a light on the control panel indicates there is a problem with the scooter. See page 18 for more information.

Battery Gauge

There are yellow LED lights that represent the battery's power. When all LED lights are on, the batteries are fully charged. When any of the battery gauge lights are off, the batteries need to be recharged.

ADJACENT TO TOP CONTROL PANEL

Thumb Lever

Pushing the right thumb lever moves the scooter forward. Pushing the left thumb lever moves the scooter in reverse. (This can be reversed if required by a local dealer.) Releasing both engages the automatic brake. This lever is also your accelerator. The further you depress the thumb lever, the faster you will go (note: subject to the position of the rabbit/turtle control).



Figure 4

AT BASE OF STEERING TILLER**Tiller Angle Adjustment**

Push downward on the handle to loosen. Move the tiller to adjust and release the handle to lock the tiller at a comfortable angle.



Figure 5

BELOW SEAT**Seat Sliding Lever**

Lift the lever up to adjust the seat to either go forward or backward.



Figure 6

Seat Rotation Lever

While sitting, push the lever counterclockwise to unlock the seat. The seat is able to rotate in a 360-degree rotation. Pushing the lever clockwise will lock it in place.

Armrest Width Adjustment Thumbscrews

Loosen the two thumbscrews to adjust the arm width; tighten again to lock in the desired position.

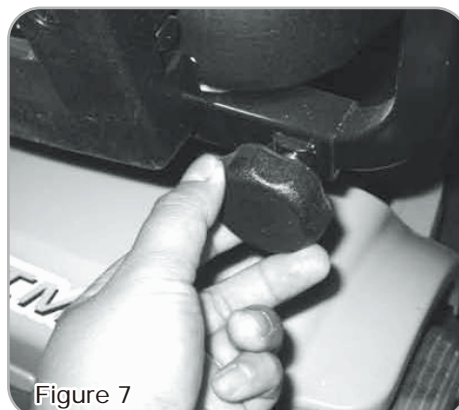


Figure 7

REAR BODY**Rear Compartment Cover**

To have access to the controller if a dealer needs to complete any programming.

Anti-Tip Wheels

(Fig. 8) Designed to keep the scooter from tipping over.

Free-Wheeling Lever

When the lever is in the N (Neutral) position, the scooter can be moved manually without power. When the lever is in the D (Drive) position, the scooter can be driven. Normal position is D.

Storage Area

Located underneath the rear compartment cover. This space is designed as a storage place for the charger.



Figure 8

OPERATING YOUR SCOOTER

Before beginning your journey with your new scooter, make sure that the scooter is on a level surface and clear of any obstacles. Although your scooter is able to climb slopes it is safer to practice on a leveled surface.

You can make the following adjustments to increase your comfort when driving :

- adjust the seat height and location.
- adjust the armrest width.
- adjust the tiller to a comfortable position.

1. Before operating your scooter, check the following:
 - the free-wheeling lever is on D.
 - the speed control knob is at the picture of the turtle.
2. Sit on the scooter and turn on the key. All battery gauge LED lights should be lit. The self-diagnostic warning lights should not be blinking.
3. When your hands rest comfortably on the handlebars, the thumb control levers should be within reach. The right lever moves the scooter forward; the left one moves it in reverse. When you release the thumb lever, the scooter will stop.



This scooter has an automatic braking system. Release the thumb control and the brakes will engage.

4. Steer the scooter by turning the whole steering in the direction you want to go.
5. Practice driving where there are no obstacles. Start at the slowest speed and drive forward and backward; make some turns. As you get more comfortable you can increase the speed by turning the speed dial toward the picture of the rabbit.
6. If only two-battery gauge LED lights are lit, you should plan to recharge the batteries very soon.
7. If the scooter stops and does not function, locate the circuit breaker in the storage area. Push it and try the scooter again.
8. When you are finished riding, turn off the key before getting off.
9. If you are finished riding for the day, immediately recharge the batteries. See CHARGING THE BATTERIES on page 15.

Keep in mind these rules :

Release the thumb levers and allow the scooter to stop completely before changing from forward to reverse, or reverse to forward.

When turning a corner, swing the front wheels wide, because the back wheels will turn more tightly.

Use the scooter only where it would be safe to walk.

Use low speeds for reverse, downhill, ramps, curbs, or uneven surfaces.

Other Operating Information :

Hill climbing: You may need to use a higher speed going up on slopes. For a higher speed, set the speed control in the proximity of the rabbit.

Down slopes: To proceed down steep slopes slowly, set the speed control in the proximity of the turtle. This enables driver control, as the closer the speed control is set toward the turtle, the slower the scooter will travel. However, this scooter will not self accelerate down hills due to the automatic braking taking effect should you attempt to drive too fast.

Curb climbing: Approach slowly at right angles to the curb. A slight angle is permissible with a 4-wheel scooter, but a direct approach is needed for a 3-wheel scooter. Do not attempt curb climbing greater than a 3" curb. If the Self-Diagnostic Warning Lights start to blink, identify the problem from the chart on page 18 and take action.

If the scooter breaks down and must be moved, get off the scooter, push the freewheeling lever to N, move the scooter slowly to a safe location, and move the free-wheeling lever back to D.



As a safety feature, an automatic speed reducer engages if the scooter is pushed quickly when the Free-Wheeling lever is on N. This standard feature is specifically created for down slopes.

DISASSEMBLING YOUR SCOOTER

Taking apart your scooter enables you to save space when keeping it in storage or to carry it along in your vehicle when going away from home. Having the scooter disassembled is easier than ever since no tools are required. Please follow these steps

Remove the seat by unlocking the seat rotational lever and then lift off. (See Fig. 9)
Remove the rear shroud gently which is held by Velcro. (See Fig. 10)



Figure 9

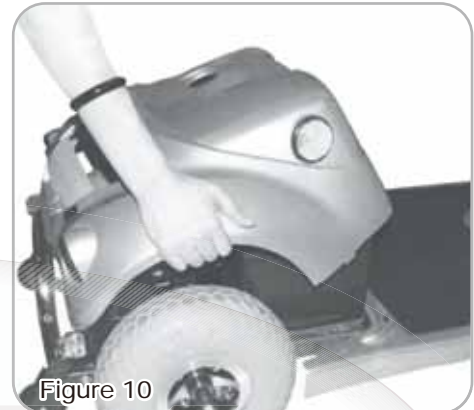


Figure 10

Detach the indicators wiring harnesses from the scooter. (See Fig. 11)
Unstrap the Velcro band (D) that holds the batteries. (See Fig. 12)



Figure 11



Figure 12

Unplug both battery cables and remove the batteries. (See Fig. 13)
Remove the two locking pins. (See Fig. 14)



Figure 13



Figure 14

Detach the front and rear sections by holding one end on the bumper and the other on the seat stem.(See Fig. 15)

Once all the parts have been disassembled, you are now able to put the pieces in storage or in a vehicle for transportation.(See Fig. 16)

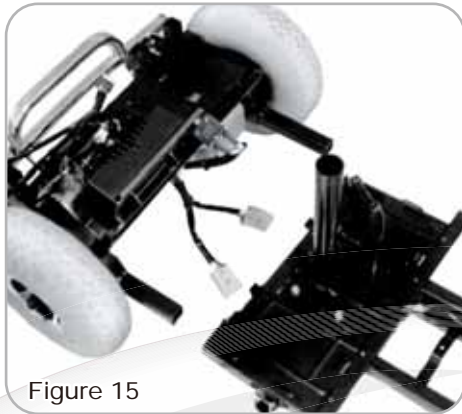


Figure 15



Figure 16



ASSEMBLING YOUR SCOOTER

To assemble the scooter, you can repeat the disassembly directions in reverse. Abbreviated directions are given below. Refer to the Figures on pages 12 - 13 to locate the parts.

1. Use the Tiller Adjustment to move the tiller up out of the way.
2. Tilting the rear end to a horizontal position, insert the scooter frame tube of the front end into the rear section first, making sure that the locking pins are removed.
3. Slide the two sections of the unit together until the front half reaches its limit.
4. Insert the two locking pins into their corresponding holes. Both locking pins must be fully inserted whenever the scooter is assembled.
5. Place batteries, use Velcro to fix the position and attach the battery power plugs.
6. Plug the main wiring harness.
7. Place rear shroud.
8. Pull Seat Rotation Lever to place seat on seat post. Release lever to lock seat in position.

CHARGING THE BATTERIES

Batteries must be charged before using the scooter for the first time and should be recharged after each day use. You will need the scooter and the battery charger.



Each country may supply different charger. The charging procedure may be different from below.

If you require more details, please contact your authorized dealer.



Be sure the scooter key is in the OFF position

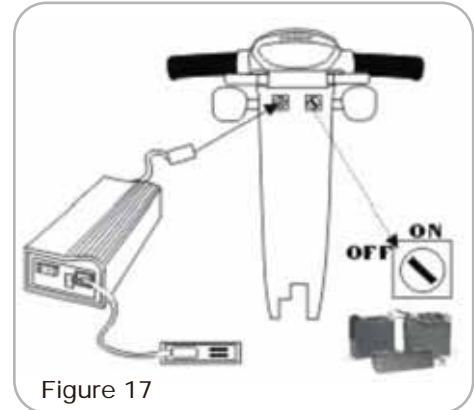


Figure 17

1. Insert battery charger cord into the charger connector on the charger output. Refer to above figure for correct position
2. Plug the other end of the battery charger cable into a standard electrical outlet.
3. Turn the power on. Normally, The LED (Power) Light will turn on when electric current passes.
4. Charging starts. During charging, LED (Charge) will indicate orange light, when it turns to green light, that means well-charged.
5. LED indication
 - LED(POWER) - GREEN LIGHT ON : Power On.
 - LED(CHARGE) - ORANGE LIGHT ON : Charging / GREEN LIGHT ON : Fully Charged
6. Charger Trouble Shooting
 - (A) If LED (POWER) light is off
 - Check the input voltage (115V/230V) is the same as you adjust.
 - If light is still off, please check and repair the battery charger.
 - (B) If LED (CHARGE) light is off
 - Check to see clips connection is correct.
 - If the battery is fully charged, the LED (CHARGE) light will be off.
 - If light is still off, the battery may be defective.
 - (C) If ORANGE light can turn to GREEN
 - The battery can not be charged. Please check and recover it.
 - (D) If ORANGE light turns to GREEN immediately
 - Check to see the battery is fully charged, if not, The battery may be defective
 - Check and recover it.



The time needed to recharge will vary depending on the depletion of the batteries. Charging for longer than necessary will not harm the batteries. They cannot be overcharged.

Keep in mind these rules :

Fully charge batteries at least once a month, more if you use the scooter regularly. Charge after each trip exceeding 3 kilometers / 1.86 miles.

If storing your scooter for some time (one month or more) make sure that the batteries are fully charged, and on returning, charge them again before using the scooter.

Batteries will only give the maximum performance after the scooter has been used, and the batteries have been recharged up to 10 times.

For safety, please follow the guidelines below.

1. DO NOT use the charger if the power cord is damaged.
2. DO NOT use an extension cord when charging your batteries. A risk of fire and/or electric shock could be encountered.
3. DO NOT take apart the charger, as this will void the warranty.

CARE AND MAINTENANCE

Taking care of your scooter will keep it in top-notch condition. It is recommended that you have your dealer to provide preventative maintenance service of your scooter on a regularly basis. Here are a few maintenance guidelines:

BODY COVER: If your scooter is dirty, use a damp or lightly soapy cloth to wipe it down. Do not use running water to wash or rinse the scooter in order to protect the electrical parts. Polish with an automotive liquid polish.

SEAT AND ARMREST: Using a damp cloth helps clean the upholstery. Please note that using the scooter outdoors can lead to sun damage of the upholstery material. Since this is a normal wear and tear condition, it is not covered under the warranty.

An authorized dealer should do all maintenance and repair of your scooter that relates to electronics, batteries, motor parts, and tires.

Also between uses, your scooter is best stored in a dry location at room temperature.

TROUBLESHOOTING

To check the Self-Diagnostic Warning Light, turn on the key and count the number of flashes.

Flash Code/Fault	Impact on Scooter	Notes
1. Battery needs recharging	Will drive	Battery charge is running low. Recharge the batteries as soon as possible.
2. Battery voltage too low	Drive inhibited	Battery charge is empty. Recharge the batteries. If the scooter is left off for a few minutes, battery charge might recover enough to allow driving for a short time.
3. Battery voltage too high	Drive inhibited	Battery charge is too high. If a charger is plugged in, unplug it or turn the Charge/Run switch to Run. Scooters powered by RHINO charge the batteries when travelling down slopes or decelerating. Excessive charging in this manner can cause this fault. Turn the scooter power off then on again. If necessary, reduce speed when descending the slope.
4. Current limit time-out	Drive inhibited	The scooter has drawn too much current for too long, possibly because the motor has been over-worked, jammed or stalled. Turn the scooter power off, leave for a few minutes, and then turn the power back on again. The controller has detected a shorted motor. Check the loom for shorts and check the motor. Contact your service agent.
5. Brake fault	Drive inhibited	Check that the park-brake release lever is in the engaged position. Check that the motor/park-brake connector is plugged in firmly. The park-brake coil or wiring is faulty. Check the park brake and wiring for open or short circuits. If necessary, unplug the motor/park-brake connector and check that all four pins are in the correct position. If this flash code does not appear until the throttle has been moved out of neutral, check for a short in the park-brake circuit. If this flash code appears at power-up, check for an open circuit in the park-brake circuit. Contact your service agent.
6. Out of neutral at power-up	Drive inhibited	Throttle is not in neutral position when turning key switch on. Return throttle to neutral, turn power off, and back on again. Throttle may need to be re-calibrated (see Section 4.2.3). Check throttle wiring.
7. Speed Pot error	Drive inhibited	The throttle or its wiring is faulty. Check for open or short circuits. Throttle may not be correctly set up. Contact your service agent.
8. Motor volts error	Drive inhibited	The motor or its wiring is faulty. Check for open or shot circuits. Contact your service agent.
9. Other internal errors	Drive inhibited	Contact your service agent.

Other Problems :

Scooter will not move when the key is turned on:

1. Check the battery gauge on the control panel. All the LED lights should be on.
2. Check the Self-Diagnostic Warning Light. It should be steady. If it is flashing, see chart on page 18 for problem identification.
3. Check all electrical connections to be sure they are tight.
4. If none of these correct the problem, contact your authorized dealer.

If you have charged your scooter for over 10 hours and the light on the charger does not change to green, then please contact your authorized dealer.

Please note that your scooter is equipped with a controller that constantly checks the drive system for a safe and enjoyable ride. If an error occurs, the control panel will provide you an indication of the problem by way of blinking lights.

We thank you again for choosing C.T.M. Homecare Products for your mobility scooter. C.T.M. offers exceptional, uncompromised quality, for better mobility.

When you compare, the decision will be obvious: C.T.M.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	HS-575	HS-585
Overall Length	1300 mm / 51.2"	1280 mm / 50.4"
Overall Width	610 mm / 24"	610 mm / 24"
Overall Height	990 mm / 39"	988 mm / 38.9"
Wheels: Front	260 mm / 10"	260 mm / 10"
Wheels: Rear	260 mm / 10"	260 mm / 10"
Weight w/ Batteries	83.2 kg / 183.4 lbs	89.3 kg / 196.9 lbs
Max. Speed	8 kmph / 5mph	8 kmph / 5mph
Weight Capacity	135 kg / 300 lbs	135 kg / 300 lbs
Ground Clearance	40 mm / 1.6"	40 mm / 1.6"
Grade Climbable	12 degree	12 degree
Curb Climbing	50 mm / 2"	50 mm / 2"
Turning Radius	1230 mm / 48.4"	1480 mm / 58.3"
Suspension	N/A	N/A
Brake	Electro-mechanical	Electro-mechanical
Seat Type	Premium Upholstery Mid-Back & Headres Swivel Seat-Sliding Adjustment	
Seat Width	455 mm / 18"	455 mm / 18"
Motor Size	500W , 3400 r.p.m	500W , 3400 r.p.m
Battery Size	(2) 12V. 36Ah	(2) 12V. 36Ah
Battery Weight	24.7 kg / 55 lbs	24.7 kg / 55 lbs
Travel Range	34 km / 21.1 Miles	34 km / 21.1 Miles
Battery Charger	5A Off Board	5A Off Board
Electronics	On / Off Key Switch, Battery Level Indicator, Speed Control Knob	

*All above information is subject to change without notice.