



C.T.M. MOBILITY SCOOTER

7-Series Instruction Booklet



HS-735



HS-745



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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.

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, you can contact:

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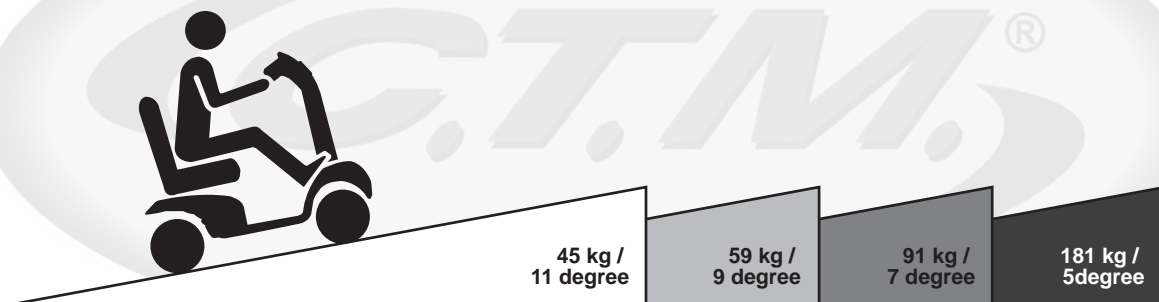
Information of European Representative :

EMERGO EUROPE

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2514 AP The Hague
The Netherlands

IMPORTANT PRECAUTIONS

- Only one person at a time could ride a C.T.M. Mobility Scooter.
- Maximum load is 181 kg / 400 lbs.
- Turn key off before getting on or off.
- Always drive carefully and be aware of others using the same area.
- Always use pedestrian crossings wherever possible. Take extreme care when crossing roads.
- Do not drive on slope exceeding a 1 in 4 degree, and take extreme care when turning on slope.
- Do not use full power when turning to sharp corner.
- Take great care and drive in low speed when backing up, riding downhill or on uneven surface, and climbing curb.
- Please use the lowest speed when driving through the descending road or uneven terrain. If speed is too fast, leave your hand off the handle bar, let the scooter stop. Make sure safety and start again.
- The weight capacity limit at different ramp degree (please refer to following picture).



- The grade climbing degree will be affected by weight capacity, driving speed, and ramp degree, and scooter parameter.
- To prevent any danger from motor defected; please avoid to drive on long ramp or any uneven terrain.

- A slow speed must always be used when ascending, descending or traversing aslope or incline and also on uneven terrain, ramps and soft or loose surfaces, such as gravel or grass.
- To prevent any danger, do not turn around at high speed on ascending, descending ramp.
- Scooter may not operate well in high humidity.
- Do not leave the powered scooter in a rain storm of any kind.
- Do not use the powered scooter in a shower.
- Direct exposure to rain or dampness will cause the scooter to malfunction electrically and mechanically; may cause the powered scooter to prematurely rust.
- Never put scooter in neutral when staying on slopes.
- Follow traffic laws when riding outside.
- When scooter on moving transport vehicles, do not sit or stay on scooter.

ELECTROMAGNETIC INTERFERENCE AND WARNINGS

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

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. 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. The immunity level of this motorized scooter model is not known. 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. 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; and
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 motorized scooter 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 motorized scooters. Following the warnings listed below should reduce the chance of unintended brake release or motorized scooter 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 motorized scooter 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 motorized scooter, 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 not known.



SAFETY WARNING AND INSTRUCTION LABELS



<p>1</p>	<p>Warning Sticker</p> <ol style="list-style-type: none"> 1. Please read the instruction booklet carefully before using your scooter. 2. Do not drive the scooter on slippery surfaces or on slopes over 12°. 3. Do not drive on highway, crowded roads, or unfamiliar areas. 4. Do not turn at high speed in either forward or reverse. 5. Do not wash with water or leave scooter in humid environment since water can damage the electronic parts.
<p>2</p>	<p>Do not hang baggage or other objects on the tiller / tiller adjustment lever.</p>
<p>3</p>	<p>SN Serial Number WEEE Conformity Date of Manufacture MD Medical Device Manufacturer CE European Conformity</p>
<p>4</p>	<p>Wiring diagram Label</p>
<p>5</p>	<p>N-D Lever adjustment label which instructs freewheel mode operation. *Never put scooter in neutral gear when staying on slopes.</p>

IDENTIFICATION OF PARTS

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

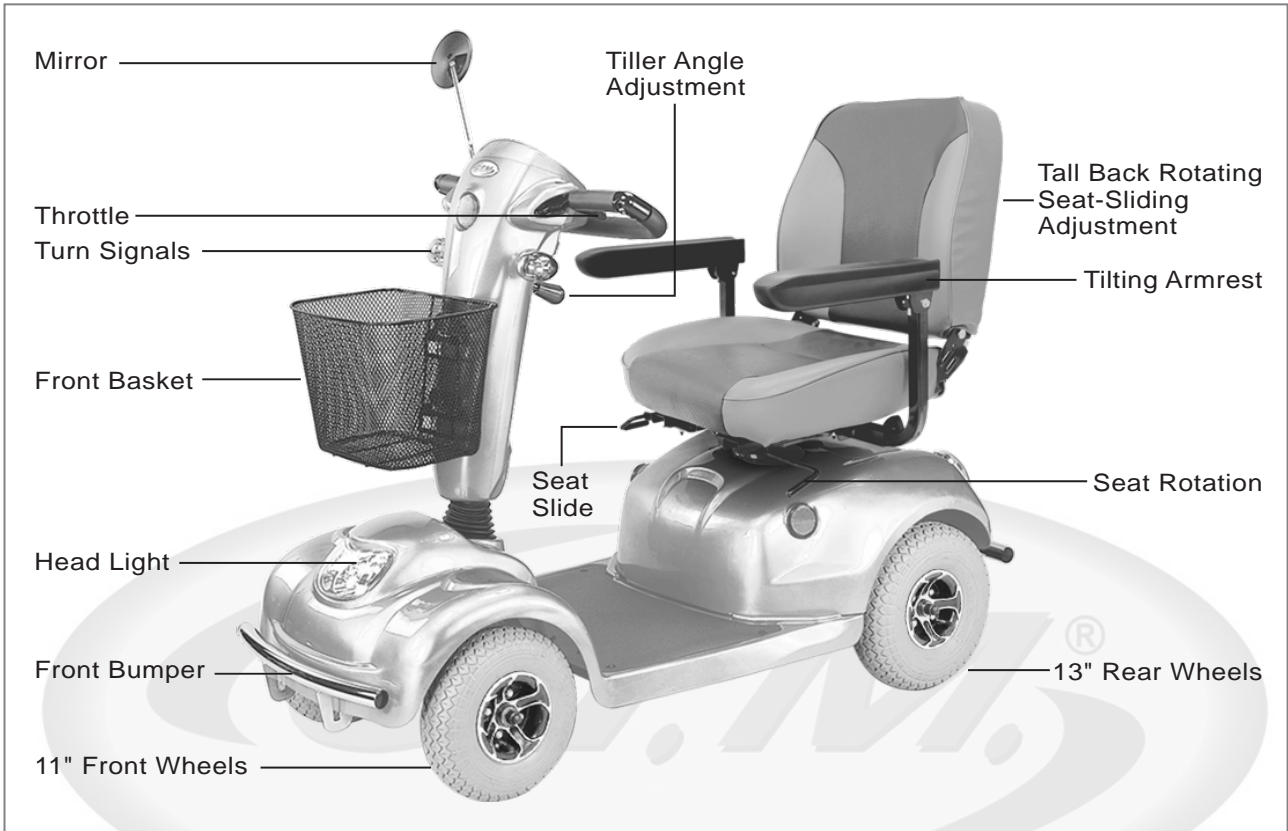


Figure 1 - HS-745 Front View

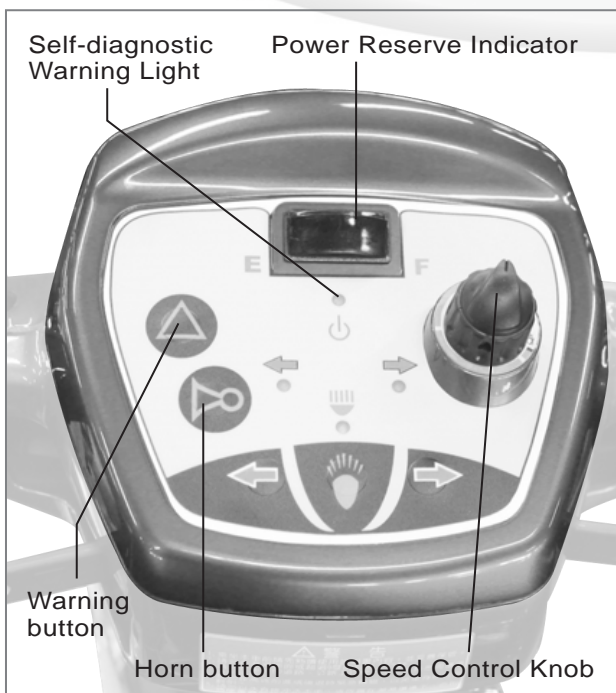


Figure 2 - HS-745 Joystick



Figure 3 - HS-745 Rear View

FUNCTION OF PARTS :**TOP CONTROL PANEL**

- Speed Dial
The Rabbit means fast and Turtle is slow. By turning this you control the total speed transferred to the thumb controls.
- Self Diagnostic Warning Lights
Flashing indicates problems with the scooter. See page 17 for more information.
- Battery Gauge
There are five yellow LED lights. When all LED are on, the batteries are fully charged. When only two lights are on, the batteries need to be recharged.

ADJUST TO TOP CONTROL PANEL

- Throttle
Pushing the right Throttle moves the scooter forward. Pushing the left Throttle moves the scooter backward. (This can be reversed if required by local dealer.) Releasing both engages the automatic brake. These are also your accelerator. The further you depress them, the faster you go. (Subject to the position of the Rabbit/Turtle control).

AT BASE OF STEERING TILLER

- Tiller Angle Adjustment
Pushing downward on the handle to loose. Moving the handle to left to adjust. Pushing up to lock tiller at comfortable angle.

BELOW SEAT

- Seat Locker Knob
Turn the seat locker knob counterclockwise to loose. Turn it clockwise to lock the seat position.
- Seat Height Adjuster
There are three holes on the seat tube to adjust the seat height. Be sure the detent pin is fully inserted at its new height before sitting on the seat.
- Armrest width Adjustment Thumbscrews
Loosen the two thumbscrews to adjust the arm width; tighten again to lock in the desired position.
- Legroom Adjuster
There are few holes on the front and rear frame tube to adjust the legroom. Pull the toggle latch to loosen and insert the detent pin to locate the position. Push the toggle latch again to lock.

REAR BODY

- Rear Compartment Cover
Open the compartment Cover to access the on board charger.
- Anti-tip wheels
Helps keep the scooter from tipping over.
- Free-Wheeling Lever
When lever is in the N (Neutral) position, the scooter can be moved without power. When lever is in the D (Drive) position, the scooter can be driven. Normal position is D.

OPERATING YOUR SCOOTER

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

- adjust seat height and location
- adjust steering column to comfortable position.
- adjust legroom.

1. Before operating your scooter, check the following:
 - free-wheeling device on D
 - speed dial is at the turtle picture.
2. Sit on scooter and turn on 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 easy reach. The right lever moves the scooter forward, the left one moves it backward. When you release both levers the scooter will stop.



This scooter has automatic braking systems. Release the thumb finger control and the brakes will stop the scooter.

4. Steer the scooter by turning the whole steering column the way 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 two Battery Gauge LED Lights be lit, you should plan to recharge the batteries very soon.
7. If the scooter stops, locate the circuit breaker on the top of the battery pack. 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**, page 12.

Keep in mind these rules :

- Release Throttle and allow 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, downhills, ramps, curbs, or uneven surfaces.

Other Operating Information :

Hill climbing :

You may need to use a higher speed. Turn to lower speed before going downhill.

Down slopes :

To proceed down steep slopes slowly, set speed control in proximity of the turtle. This enables driver control, as the closer the speed control is set toward the turtle, the slower it will become. 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 on a 3-wheel scooter. Do not attempt greater than a 3" curb.

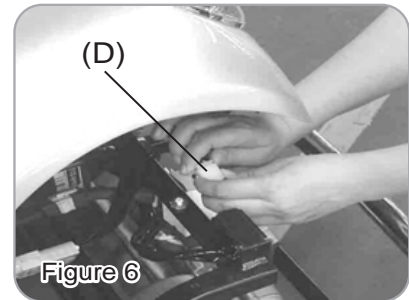
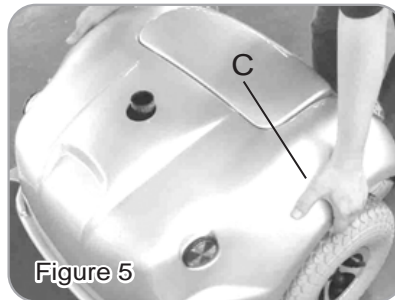
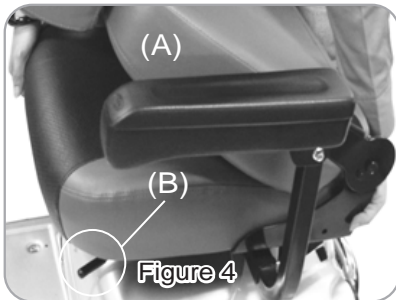
If Self-Diagnostic Warning Lights start to blink, identify the problem from the chart on page 17 and take action.

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

DISASSEMBLING YOUR SCOOTER

No tools are necessary to disassemble scooter. You can disassemble scooter for transportation.

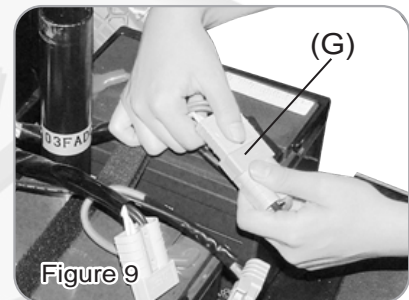
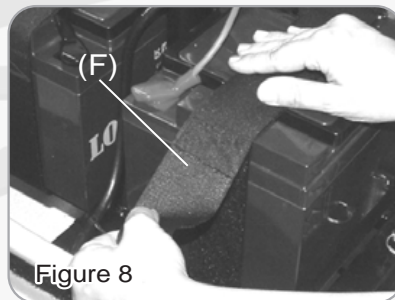
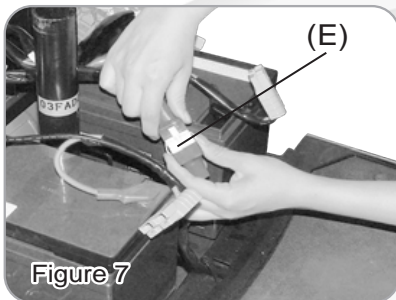
Seat (A) is removable by releasing the Seat Adjusting Lever (B) and then lift off. (See Fig. 4)
Rear Shroud (C) is removable by lifting the Rear Shroud toward the direction as the shaft showed in the picture (See Fig. 5). And unplug (D) connections inside (See Fig. 6).



Unplug Wire Connect (E) of the front and rear nits. *Please make sure the main wires are tied and placed safely on the frame structure to avoid any hazard. (See Fig. 7)

Remove Battery Fixing Velcro (F). (See Fig. 8)

Batteries are removable by detaching the Battery Power Plugs (G). (See Fig. 9)

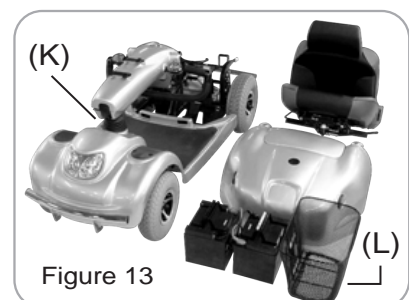
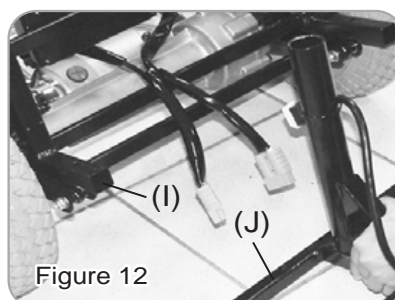
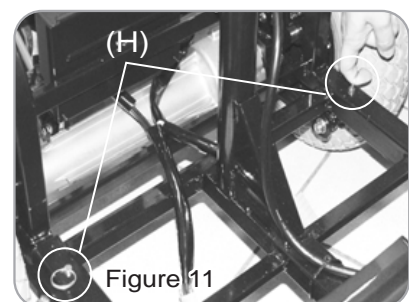
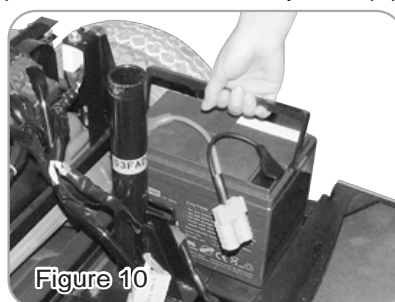


Batteries are heavy please beware when removing. * Please do not touch the positive plate and the negative plate of the batteries with any metallicity. (See Fig. 10)

Release two Locking Pins (H) to separate front and rear units. (See Fig. 11)

With one hand on rear frame (I) and other on seat pillar (J) as hand hold, detach front and rear sections. (See Fig. 12)

By removing the front basket (K) and adjusting the tiller down by using the tiller angle adjustment (L) you should be able to place all parts in the trunk and part of the rear seat (See Fig. 13).



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 11 - 12 to locate the parts.

1. Use the tiller angle adjustment lever to move the steering column up out of the way.
2. Place the front basket
3. 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.
4. Slide the two sections of the unit together until the front half reaches its limits.
5. Insert the two locking pins into their corresponding holes. Both locking pins must be fully inserted whenever the scooter is assembled.
6. Place batteries, one on each side of the seat post, and use Vel-cro to fix the position.
7. Attach the battery power plugs.
8. Attach the wire connect.
9. Place rear hood, battery cover and free-wheeling knob.
10. Loosen Seat Rotation Lever counterclockwise. Place seat on seat post. Tighten Lever again by turning clockwise. Lock Seat Control Lever on bottom of seat before sitting down.

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

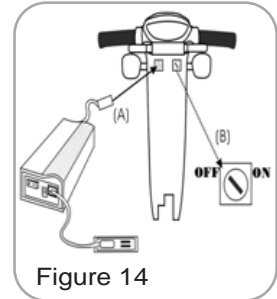


Figure 14

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 can not be overcharged.

Keep in mind these rules :

- Fully charge batteries at least once a month, or more if you use scooter regularly. Charge after each trip exceeding 3 kilometers.
- If storing your scooter for some time (1 month or more), make sure that batteries are fully charged, and on returning, charge them again before using scooter.
- Batteries will only give maximum performance after scooter has been used, and batteries have been recharged up to 10 times. A bit like breaking in a new car.

Please be aware that the travelling range of your mobility scooter is impacted by how fast the batteries are discharged. This will depend on many circumstances, such as ambient temperature, condition of the surface of the road, tyre pressure, weight of the driver, driving environment (inclines etc.) and utilisation of your lighting system if fitted. We recommend that you test your local ride with a family member to ensure a safe journey.

CARE AND MAINTENANCE

DAILY CHECK

Please always check your scooter before you start your every journey.

Check point	Inspection	What to do if the inspection is failed
N-D lever	Check for correct function	Contact your dealer.
Horn	Check for correct function	Contact your dealer.
Throttles	Pull the wigwag to test the scooter movement	Contact your dealer.
Electro-mechanical brake and Emergency hand brake	Pull the wigwag a little bit and release it to test if brake works. If your scooter comes with emergency handbrake, please check it as well.	Contact your dealer.
Battery Gauge	Check if the battery gauge is displayed and whether it is at low power.	<ul style="list-style-type: none"> • Contact your dealer if battery gauge is not working. • Recharge the battery immediately if low
Rear mirror (s)	Check if the parts are clean and firmly tighten to the scooter and do not wobble.	<ul style="list-style-type: none"> • Clean up the dirt by damp cloth. • Tighten the screw or clamping stem that holds the mirror(s)
Lighting	Check if all lights, such as head lights, rear lights, and turn signal are functioning correctly.	Contact your dealer.

WEEKLY CHECK

Check point	Inspection	What to do if the inspection is failed
Speed Dial Knob	Check for correct function	Contact your dealer.
Armrests	Check if the parts are clean and firmly tighten to the scooter and do not wobble. Tighten the screw knob that holds the armrest.	Contact your dealer.
Wheels/Tires	Inflate the tire to the correct pressure and check that <ol style="list-style-type: none"> 1. Drive wheels rotate without wobbling. 2. Tire tread depth is not less than 0.5mm. 3. No foreign objects in tires. 	Contact your dealer.
Motor	Check for correct function	Contact your dealer.
Battery Charger	Check if the charger is functioning correctly and the batteries are charged.	Contact your dealer.

MONTHLY CHECK

Check point	Inspection	What to do if the inspection is failed
Seat / Upholstery	Check for movement and if it's worn	Contact your dealer.
Electronics	Check if all the battery cables and connectors are firmly tighten to the scooter	Contact your dealer.

CLEANING YOUR SCOOTER

- Do not use any abrasive or scouring liquids for cleaning. Only use a damp cloth and gentle detergent.
- Do not use hose pipe or splash water directly onto the scooter as this may cause damage to electronics.

MAINTENANCE

- User should inspect the scooter regularly to keep scooter in good running order.
- Check if the electrical cable connectors are fully connected.
- All maintenance and repair of scooter should be done by an authorized dealer.

Seat Upholstery :

Only use damp cloth and a little soap to wipe the seat. Do not use abrasive cleaners as this will damage the seat.

Storage :

- Please store the scooter in a dry location. If store the scooter in long time, please disconnect the battery terminals.
- Do not store your scooter where it will be exposed to source of direct heat, damp, oil, acid, alkaline, or where Ozone could be possibly generated. All of the above will minimize scooter / tire cycle and shorten its lifetime.

OTHER INFORMATION

RECYCLING & DISPOSAL

- The equipment wrapping is potentially recyclable.
- The metal parts are used for scrap metal recycling. The plastic parts are used for plastic recycling.
- Electric components and printed circuit boards are disposed of as electronic scrap.
- Exhausted or damaged batteries can be returned to your medical equipment supplier.
- Disposal must be carried out in accordance with the respective national legal provisions.
- Ask your city or district council for details of the local waste management companies.

SERVICE LIFE

We estimate a service life of five years for this product, provided it is used in strict accordance with the intended use as set out in this document and all maintenance and service requirements are met. The estimated service can be exceeded if the product is carefully used and properly maintained, and provided technical and scientific advances do not result in technical limitations. The service life can also be considerably reduced by extreme or incorrect usage. The fact that we estimate a service life for this product does not constitute an additional warranty.

TROUBLE SHOOTING

Here are some suggestions about solving problems you may have with your scooter. There is a self-diagnostic warning light on the control panel. To check the self-diagnostic warning light, turn on the key and count the number of blinks on the warning light.

SCOOTER WON'T MOVE WHEN KEY IN TURNED ON

Check point	Solution
Check if the power is off	Turn the power on.
Check if the N-D lever is in Neutral position	Switch to D (drive) position. Turn off the power and turn on again.
Check if the battery power is enough. (Battery gauge is under 25%)	Recharge the battery and then retest.
Check if the charger power cord is still plugged in scooter	Unplug the charger power cord.

ERROR CODE

Flash	Description	Initial check points
1	Battery Low	The batteries are running low. • Recharge the batteries.
2	Low Battery Fault	The batteries have run out of charge. • Recharge the batteries. • Check the battery and associated connections and wiring.
3	High Battery Fault	Battery voltage is too high. This may occur if overcharged and/or traveling down a long slope. • If traveling down a slope, reduce your speed to minimize the amount of regenerative charging.
4	Current limit time-out or controller overheat	The motor has been exceeding its maximum current rating for too long. • The scooter may have stalled. Turn the controller off, leave for a few minutes and turn back on again. • The motor may be faulty. Check the motor and associated connections and wiring.
5	Park Brake	Either a park brake release switch is active or the park brake is faulty. • Check the park brake and associated connections and wiring. • Ensure any associated switches are in their correct positions.
6	Drive Inhibit	Either a stop function is active or charger inhibits or OONAPU condition has occurred. • Release the stop condition (seat raised etc.) • Disconnect the battery charger. • Ensure the throttle is in Neutral when turning the controller on. • The throttle may require re-calibration.
7	Speed Pot	The throttle, speed limit pot. SRW or their associated wiring may be faulty. • Check the throttle and speed pot and associated connections and wiring.
8	Motor Voltage	The motor or its associated wiring is faulty. • Check the motor and associated connections and wiring.
9	Other Error	The controller may have an internal fault. • Check all connections and wiring.

OTHER PROBLEMS

- TIRE : Low tire pressure: pump up tires to 30~40 psi.
- Charger : During charging, light on charger doesn't change to green. Please refer to section 5-2.

SPECIFICATION

SPECIFICATIONS	HS-735	HS-745
Overall Length	1397 mm / 55"	1450 mm / 57"
Overall Width	685 mm / 27"	685 mm / 27"
Overall Height	1060 mm / 41.7"	1060 mm / 41.7"
Front Wheels	290 mm / 11"	290 mm / 11"
Rear Wheels	320 mm / 13"	320 mm / 13"
Weight W/ Batteries	27 kg / 59.5 lbs	106 kg / 234 lbs
Max. Speed	12 kmph / 7.5 mph	12 kmph / 7.5 mph
Weight Capacity	160 kg / 355 lbs	160 kg / 355 lbs
Ground Clearance	85 mm / 3.3"	85 mm / 3.3"
Grade Climbable	12 degree	12 degree
Curb Climbable	70 mm / 2.8"	80 mm / 3.2"
Turning Radius	1100 mm / 43"	1460 mm / 58"
Suspension	Front & Rear	Rear
Brake	Electro-Mechanical	Electro-Mechanical
Seat Type	Swivel Tall Back W/ Seat Sliding Mechanism	
Seat Width	480 mm / 19"	480 mm / 19"
Motor Size	700W, 4100 r.p.m	700W, 4100 r.p.m
Battery Size	(2) 12V. 50Ah	(2) 12V. 50Ah
Weight of Battery	30.5 kg / 67.2 lbs	30.5 kg / 67.2 lbs
Travel Range	36.5 km / 22.7 Miles	36.5 km / 22.7 Miles
Battery Charger	5A Off Board	5A Off Board
Electronics	On/Off Key Switch, Battery Level Indicator, Speed Control Knob	

*Subject to change without notice. (Rev. 3, 2020/04/01)