C.T.M. MOBILITY SCOOTER

3-Series Instruction Booklet

HS-320

HS-360

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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.

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:

C.T.M.HOMECARE PRODUCT, INC.
6191 Schaefer Ave Suite B Chino CA 91710
Tel : +909-590-1388 Fax : +909-590-3365
E-Mail : ctm@ctmhomecare.com http : //www.ctmhomecare.com

or your local dealer:

IMPORTANT PRECAUTIONS

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

· Maximum load is 135 kgs/ 300 pounds.

· Turn key off before getting on or off.

· Always drive carefully and be aware of others using the same area as yourself.

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

· Do not drive on slopes exceeding a 12 degree, and take extreme care when turning on slopes.

· Do not use full power when turning sharp corners.

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

· Scooter may not operate well in high humidity.

· If you are caught in the rain, it is handy to carry a scooter canopy. This can offer complete protection for yourself and the scooter.

· Never put scooter in neutral on slopes.

· Follow traffic laws when you ride outside.

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 a 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 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. This immunity level of this motorized scooter model is 20 V/m.

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; 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 move 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 motorized scooter model is 20 V/m.

IDENTIFICATION OF PARTS

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

Figure 1 - HS-360 Front View

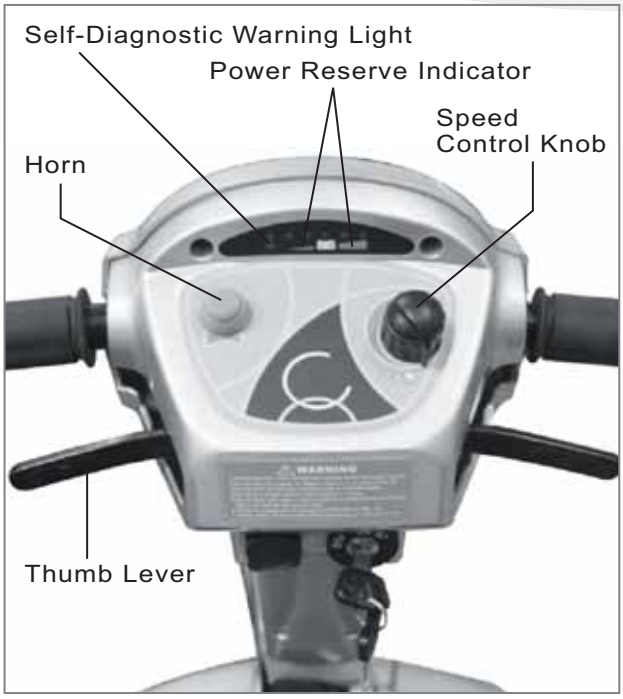

Figure 2 - HS-360 Top Control Panel

Figure 3 - HS-360 Back View

FUNCTION OF PARTS :

TOP CONTROL PANEL

· Speed Control Knob
The Rabbit means fast and Turtle is slow. By turning this you control the total speed transferred to the thumb controls.

· Self-Diagnostic Warning Light
Flashing indicates problems with the scooter. See page 14 for more information.

· Power Reserve Indicator
The 5 LED are red. When all 5 LED are lit, the batteries are fully charged. When the number of lit LED decreases, the batteries need to be recharged.

BENEATH TOP CONTROL PANEL

· Thumb Lever
Pushing the right thumb lever moves the scooter forward. Pushing the left thumb lever moves the scooter backward. (This can be reversed if required by local dealer.) Releasing both engages the automatic brake. This is 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
Push downward on the lever to adjust. Pull up to lock Tiller Angle Adjustment at comfortable angle.

BELOW SEAT

· Seat Rotation Lever
Push lever back to rotate seat; push forward to lock seat in position.

· Armrest Width Adjustment Thumbscrews
Loosen the two Thumbscrews to adjust the arm width; tighten again to lock the desired position.

REAR BODY

· Rear Cover
Protects batteries from damage.

· 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.

· Storage area
This is situated above the rear bumper for charger.

OPERATING YOUR SCOOTER

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

· Adjust seat height and location
· Tiller Angle Adjustment to comfortable position.
· Adjust armrest width.

1.Before operating your scooter, check the following:

· Free-wheeling device on D
· Speed control knob All 5 LED for is at the turtle picture.

2.Sit on scooter and turn on key. The Power Reserve Indicator light should be lit. The self-diagnostic warning light 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 control levers 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 control knob toward the picture of the rabbit.

6.If the Power Reserve Indicator becomes lit in only few LED, you should plan to recharge the batteries very soon.

7.If the scooter stops, locate the circuit breaker in the storage area. Press 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 thumb levers 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, downhill, 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 Light starts to blink, identify the problem from the chart on page 14 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

C.T.M. 3-series's compact and light weight design fits easily into the trunk or back seat of most cars for transportation. No tools are necessary to disassemble scooter.

Please follow these steps:

Remove seat by releasing Seat Rotation Lever and then. lift off.(See Fig. 4)


Figure 4

Remove Rear Shroud off of the Scooter.(See Fig. 5)

Remove Battery Fixing Velcro.(See Fig. 6)


Figure 5


Figure 6

Detach Battery Power Plugs.(See Fig. 7)

Remove two Batteries.(See Fig. 8)


Figure 7


Figure 8

By removing the Front Basket and Adjusting the tiller down by using the Tiller Angle Adjustment.(See Fig. 9)
There are 5 main parts after disassembling the scooter.(See Fig. 10)


Figure 9

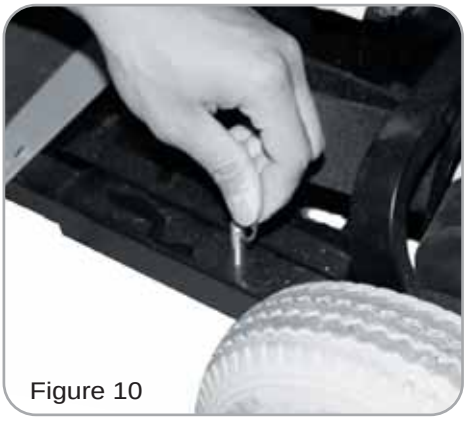
Figure 10


Figure 11


Figure 12

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 9-10 locate the parts.

1.Use the tiller angle adjustment to move the steering column up out of the way.

2.Place the front basket.

3.Place batteries, use Velcro to fix the position and attach the battery power plugs.

4.Place rear hood.

5.Loose Seat Rotation Lever counterclockwise. Place gaiter and seat on seat post. Tighten lever again by turning clockwise. Lock Seat Rotation 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.

Figure 13

Be sure the scooter key is in the OFF position.

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.The battery charger lights will normally be red at this point.
4.Allow to charge until the right battery charger light turns green.
5.After the light turns green, then unplug the battery charger from the scooter.
6.If at any time the right battery charger light flashes green over 40 minutes, this indicates abnormal charging occurred. You should check that:

· charger plugs are correctly positioned,reset circuit breaker (A) .(Figure 13)
· the scooter is turned off
· If none of these is a problem, contact your authorized dealer.

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 lease once a month, more if you use the scooter regularly. Charge after each trip exceeding 2 miles.
· If storing your scooter for some time (1 month or more) make sure that the batteries are fully charged, and on returning, charge them again before using scooter.
· Batteries will only give maximum performance after the scooter has been used, and the batteries have been recharged up to 10 times. A bit like running in a new car.

CARE AND MAINTENANCE

· Cleaning Your Scooter

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.

· Maintaining Your Scooter

All maintenance and repair of your scooter should be done by an authorized dealer. The following areas required periodic inspection:

· all electrical connections are firmly attached

· Storing Your Scooter

Between uses, your scooter is best stored in a dry location.

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 fauly. 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	thunb lever is not in neutral position when turning key switch on. Return thunb lever to neutral, turn power off, and back on again. thunb lever may need to be re-calibrated (see Section 4.2.3). Check thunb lever wiring.
7. Speed Pot error	Drive inhibited	The thunb lever or its wiring is faulty. Check for open or short circuits. thunb lever 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.

SPECIFICATION

SPECIFICATIONS	HS-320	HS-360
Overall Length	42.9"	45.7"
Overall Width	21.7"	21.7"
Overall Height	36.6"	37.4"
Wheels: Front	9"	9"
Wheels: Rear	9"	9"
Weight w/ Batteries	118.7 lbs	148.9 lbs
Max. Speed	5 mph	5 mph
Weight Capacity	300 lbs	300 lbs
Ground Clearance	1.6"	1.6"
Grade Climbable	12 degree	12 degree
Curb Climbing	2"	2"
Turning Radius	40.2"	55.7"
Suspension	N/A	N/A
Brake	Electro-Mechanical	Electro-Mechanical
Seat Type	Light Weight Foldable Swivel	Light Weight Foldable Swivel
Seat Width	18"	18"
Motor Size	450W 3700r.p.m	450W 3700r.p.m
Battery	(2) 12V . 18Ah	(2) 12V . 18Ah
Battery Weight	28 lbs	28 lbs
Travel Range	8.4 Miles	8.1 Miles
Battery Charger	2A Off Board	2A Off Board
Electronics	On / Off Key Switch, Battery Level Indicator, Speed Control Knob	On / Off Key Switch, Battery Level Indicator, Speed Control Knob

*Subject to change without notice.(Issue A)