Rascal BALANCE™

600 B/700 B
Owner's Manual

Magnetic Stabilizer™ Technology
Patent Pending

IMPORTANT

Please read this entire manual before operating the vehicle. Failure to do so may result in damage to the vehicle or serious injury.

Vehicle Information

Please Record Your Vehicle Information for Future reference

Model:

Serial Number:

Date of Purchase:

CUSTOMER SERVICE TOLL FREE NUMBERS

USA	**For service and parts, our toll-free number is: 1 (800) 257- 7955**
Canada	**For service and parts, our toll-free number is: 1 (877) 877-0215**
UK	**For service and parts, our toll-free number is: 0-800-252614 For Customer Service + (44) 1460-258120**
Other Countries	**Please call 1-856-468-1000 for the name and address of distributors in other countries**

To help us serve you as quickly as possible, please provide your telephone number when you call. When ordering parts, please have your method of payment chosen (credit card number and expiration date, check, or COD, etc.). All parts are shipped Ground transportation. You may request alternate shipping arrangements for an additional charge based on weight and destination (e.g., Next Day or 2nd Day).

Contents

Safety Information

Please read and understand these Warnings and Cautions as well as the entire manual before using your Scooter.

WARNING!

Failure to follow these instructions may result in serious or fatal injury to the user or damage to the Scooter.

1. **DO NOT exceed the specifications of this unit, modify it, or use for a purpose other than a mobility scooter.**
2. **DO NOT transfer on or off the unit until it is stopped, turned OFF, and on a stable and level surface.**
3. **DO NOT attempt to get off the vehicle while it is moving.**
4. **DO NOT turn the key switch off while the unit is moving. This will cause the brake to activate, stopping the vehicle abruptly.**
5. **DO NOT climb inclines that pose a concern for stability.**
6. **If vehicle stalls going up a steep incline at full power, DO NOT attempt to continue upward. Instead, back completely down the incline with the speed set at the slowest speed.**

CAUTION!

1. **DO NOT operate this unit if your health or medications cause you to feel dizzy, affect your vision, or in any way impact your thought process, coordination, or ability to safely operate the unit. Check with your physician if you experience any of these symptoms.**
2. **DO NOT operate this unit if you are intoxicated.**
3. **DO NOT ride over curbs or other obstructions higher than 3 inches.**
4. **DO NOT stop when going up a steep incline. If you must do so, always lean forward when you start to move. This will shift the center of gravity to prevent the unit from tipping backwards.**
5. **Vehicle is limited to one person only. This unit is not approved for towing, or for carrying total weight in excess of the specified capacity.**
6. **REDUCE SPEED when traveling on (up or down) inclines. With the variable speed engager lever, select the slowest speed setting that will still allow the vehicle to climb the incline.**
7. **ALWAYS lean forward when traveling up inclines for best stability.**
8. **ALWAYS allow ample time to come to a complete stop when driving in areas with pedestrians.**

9. **ALWAYS turn the power off when the unit is not in use. This will keep the unit from being accidentally moved.**
10. **ALWAYS use a grounded receptacle. Use of a non-grounded receptacle could result in an electrical shock.**
11. **ALWAYS keep arms and legs within the confines of the unit.**
12. **USE CAUTION when braking on an incline or wet or slippery surfaces as the unit will take longer to come to a complete stop.**
13. **USE CAUTION when operating the unit in bad weather or driving through water as moisture could affect the control system or other parts of the unit.**
14. **MAINTAIN tire pressure as shown on the tire sidewall of your rear tires to insure proper performance of your scooter.**
15. **OPERATOR MUST REMAIN SEATED with the seat locked in the forward position when the unit is moving.**
16. **NEVER hose off your scooter. To clean, use a soapy water solution.**
17. **NEVER use your scooter in a shower or steam room.**
18. **NEVER charge batteries that may be frozen. Allow them to thaw out before charging.**
19. **NEVER leave the scooter unprotected where it may be subjected to water damage.**

Safety Considerations – Electromagnetic Interference:

This vehicle has an immunity level of 20 V/m which should protect it from Electromagnetic Interference (EMI) from Radio Wave Sources. The rapid development of electronics, especially in the area of communications, has saturated our environment with electromagnetic (radio) waves that are emitted by television, radio and communication signals. These EM waves are invisible and their strength increases as one approaches the source. All electrical conductors act as antennas to the EM signals and, to varying degrees, all power wheelchairs and scooters are susceptible to electromagnetic interference (EMI). This interference could result in abnormal, unintentional movement and/or erratic control of the vehicle. This following statement shall be incorporated to the user's manual for all electric vehicles:

Powered wheelchairs and electric scooters may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios and cellular phones. The interference (from radio wave sources) can cause the vehicle to release its brakes, move by itself or move in unintended directions. It can also permanently damage the vehicle's control system. The intensity of the EM energy can be measured in volts per meter (V/m). Each vehicle can resist EMI up to a certain intensity level. This is called the "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of providing at least 20 V/m of immunity level which would provide useful protection against common sources of radiated EMI.

Following the warnings listed below should reduce the chance of unintended brake release or vehicle movement that could result in serious injury:

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

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

3. **If unintended movement or brake release occurs, turn the vehicle off as soon as it is safe.**

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

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

TURN OFF YOUR VEHICLE AS SOON AS POSSIBLE WHEN EXPERIENCING ANY OF THE FOLLOWING:

1. **Unintended motions or movement!**
2. **Unintended or uncontrollable direction!**
3. **Unexpected brake release!**

The FDA requires the manufacturers of power wheelchairs and electric scooters to test their products to be sure they provide a reasonable degree of immunity against exposure to unexpected radio waves (EMI). Vehicles are required to have an immunity level of at least 20 V/m, which provides a reasonable degree of protection against common sources of EMI. This vehicle has been tested to meet or exceed the requirements for power wheelchairs or scooters.

Getting to Know Your Rascal Scooter

Congratulations on your purchase of a Rascal Balance scooter, the latest in easy, convenient personal mobility from Electric Mobility Corp. Before attempting to use your scooter, we recommend you read this section first before using your new scooter. Included in this section are:

Take-Apart Components

Identify the individual parts of your Rascal scooter.

Controls

Learn how to operate your Rascal scooter properly and effectively.

Initial Setup and Adjustments

Adjust your Rascal scooter for greatest comfort and ease of use.

Subsequent sections of this manual show how to take care of your Rascal scooter for a long and useful life.

Rascal Balance Take-Apart Components:

1. Front Basket
2. Dash/Handlebar
3. Removable Seat
4. Rear Cover
5. Removable Batteries (under Rear Cover)
6. Take-Apart Three-wheel Front Section
7. Take-Apart Rear Section
8. Removable Drive Train

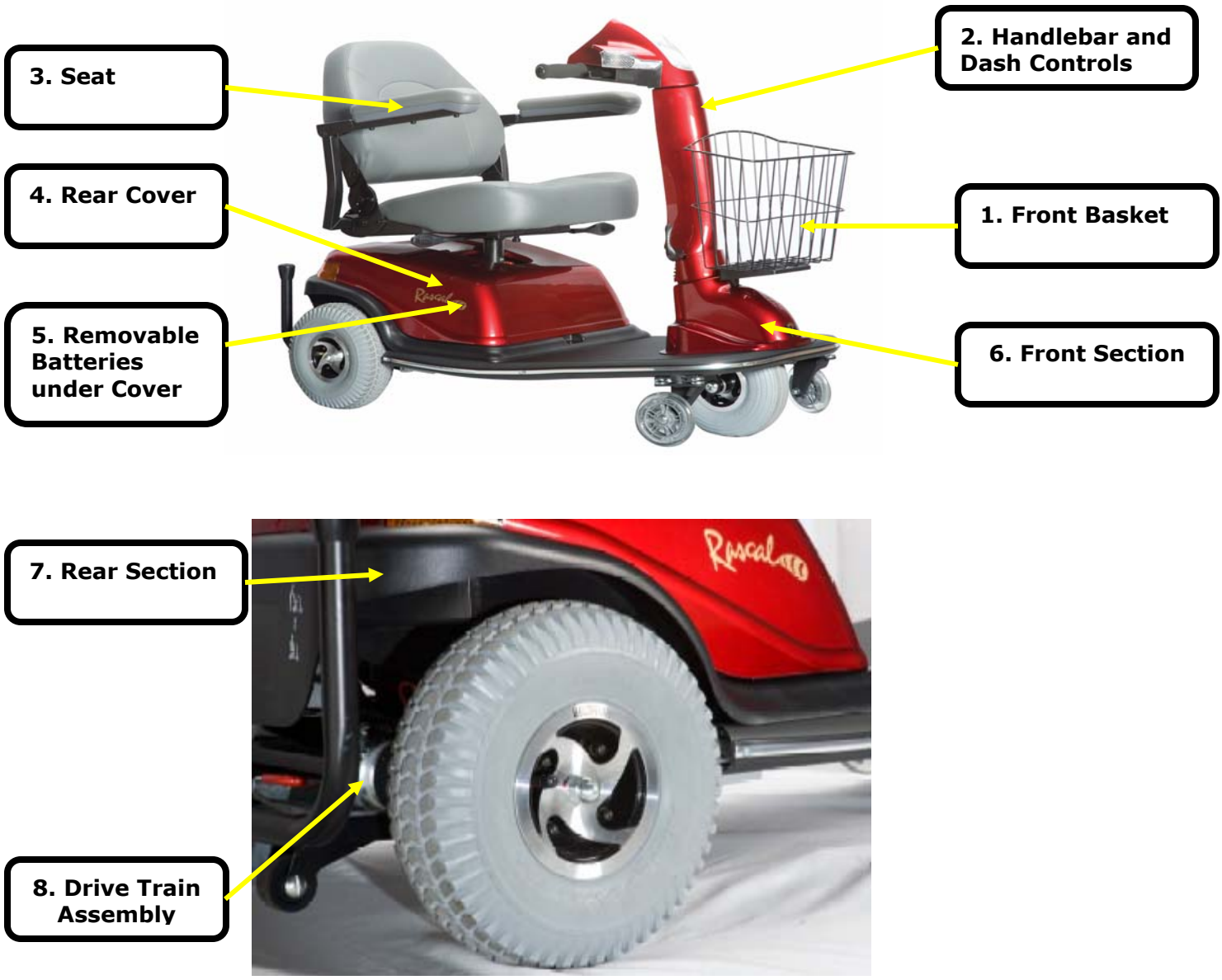


ILLUSTRATION 1 – Take-Apart Components

Controls

The Rascal Scooter includes the following controls used for its operation. These controls are shown below:

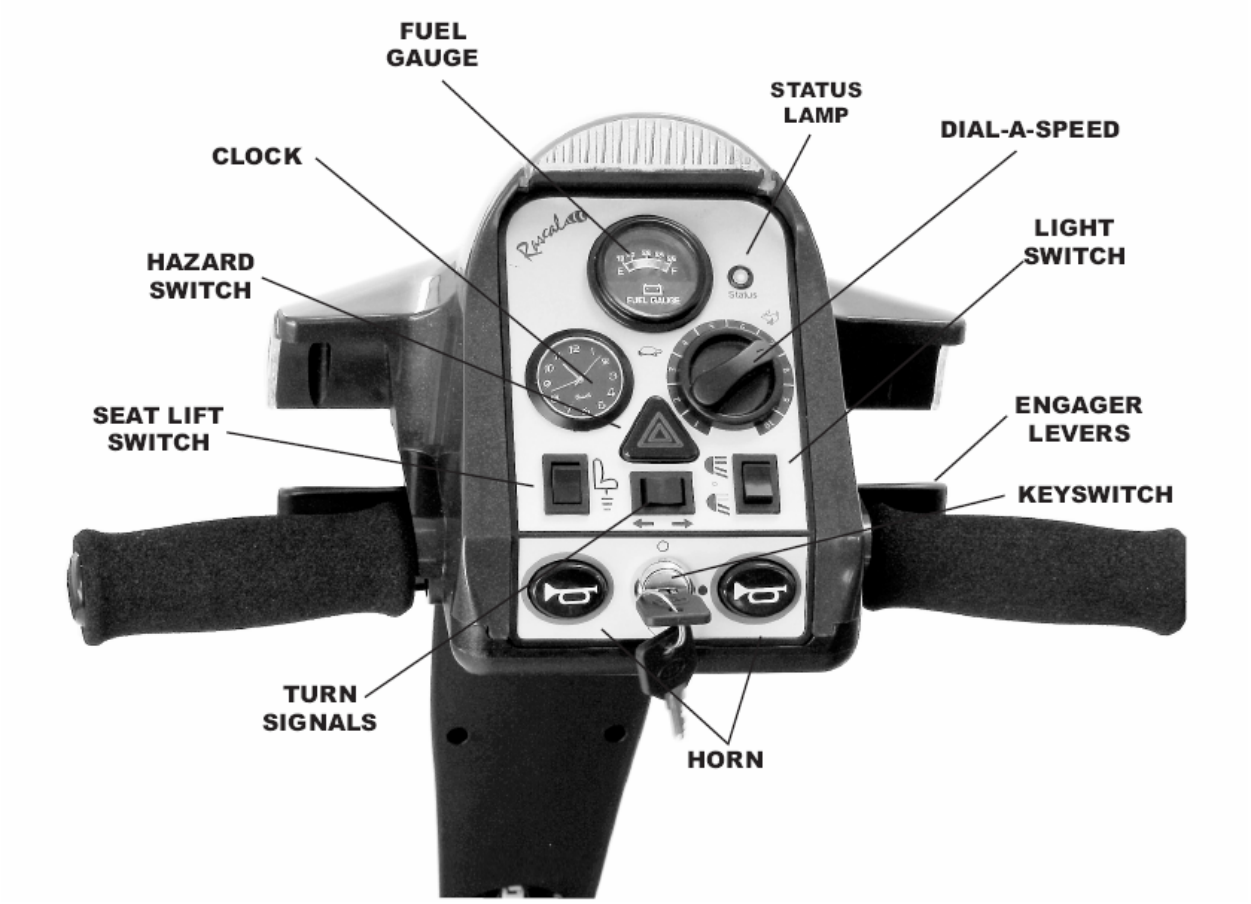
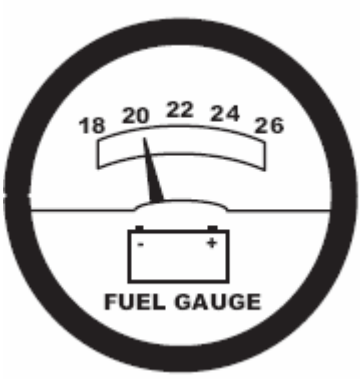


ILLUSTRATION 2 – Operating Controls

Fuel Gauge

The fuel gauge indicates the charge level of your batteries. If the needle goes into the red area, the batteries need to be charged as soon as possible. If the needle is all the way to the right side of the green area, the batteries are fully charged. As the needle moves to the red area it indicates the level of charge remaining in the batteries.



Status Lamp

A green LED lamp indicates that power is available and serves as a trouble-shooting indicator when faults or errors are detected (see "*Controller Troubleshooting*" on page 34).

Clock

For convenience, the dash includes an analog clock displaying the current time of day. The clock may be set or adjusted by removing the casing from the dash and using the stem to change time settings. The clock is powered by a separate battery and does not require the vehicle to be turned on to operate.

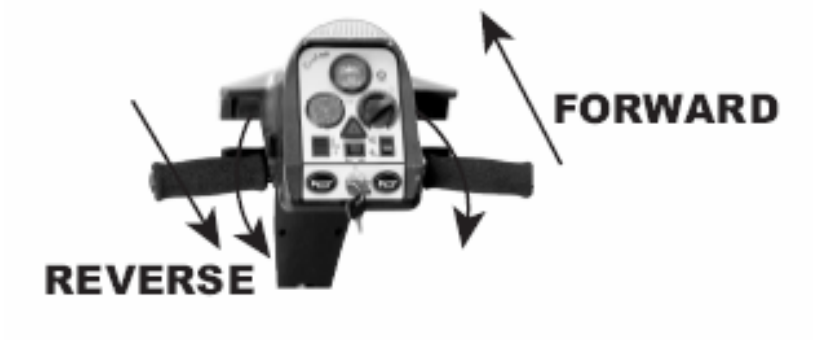
Dial-A-Speed Control

The Dial-A-Speed knob regulates the maximum speed of the scooter. Start at the slowest speed (settings: 0, 1) until you feel confident with controlling your scooter. Turning the speed dial counterclockwise (towards "1") decreases speed. Turning it clockwise (towards "10") increases speed. Use slower speeds when first driving your scooter to help avoid accidents.

Engager Lever

The operating speed of your vehicle is proportional to the amount you squeeze the engager lever. Smooth starts and stops can be accomplished by gradually moving the engager lever (similar to a gas pedal in an automobile). Squeeze the engager lever on the right side to move forward. Or squeeze the engager lever on the left side to move in reverse.

NOTE: If you prefer to have your engager lever configured to move forward from the left side (left-hand controls) please contact Customer Service or your Authorized Service Center.



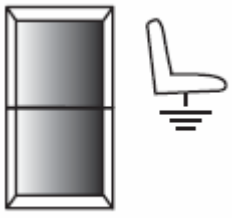
Hazard Switch

The Rascal Balance includes Hazard Indicators to alert others that you've stopped or require assistance. Pressing the Hazard Switch flashes front and rear amber lamps. Pressing again turns lamps off.

Seat Lift Switch (For Vehicles equipped with 5" seat lift actuator)

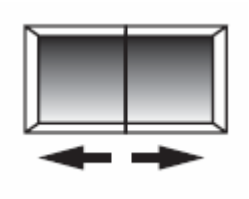
Use this switch to raise and lower the seat automatically. With the switch on, when squeezing the right side engager lever you will raise the seat. Using the left side engager lever lowers the seat. The keyswitch on the dash must be in the "On" position for the Seat Lift to operate. If the scooter does not include the Seat Lift, this switch will not function and the vehicle will be operable when the engager lever is squeezed. When applicable, always check switch position before using the scooter (driving or raising/lowering the seat).

Note: If unit is equipped with Seat Lift the scooter will not operate in forward or reverse if seat lift switch is in seat lift mode. We recommend that the seat lift is in the "down" position before riding the vehicle on inclines.



Turn Signals

As an added safety precaution, your scooter is equipped with turn signals. You can activate the right turn signal by pressing down on the right side of the toggle switch. To activate the left turn signal, press down on the left side of the toggle switch. To deactivate the turn signals place toggle switch in the centered position.

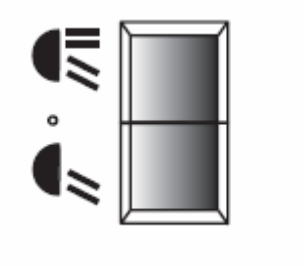


Light Switch

This switch operates the Headlight, Taillights, and a blue "Down" (Running) Light. The 3-position switch works as follows:

- **When in the upper position, the Headlight and Taillights are illuminated.**
- **When in the lower position, only the lower front blue "Down" (Running) Light and Taillights are illuminated.**
- **When in the center position, all lights are turned off.**

NOTE: The keyswitch on the dash must be in the "ON" position for the headlight to operate. Hazard and turn signal lights will operate with the key in the "ON or "OFF" position.

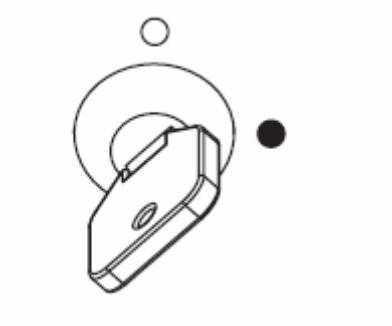


Horn

Pressing either horn button on the control panel sounds the horn. Releasing the button deactivates the horn. The horn is useful to warn people that you are coming towards them. You may also find it helpful to use it when rounding blind corners or going in reverse.

Keyswitch

Electrical power to the scooter is controlled by a 2- position keyswitch on the dash. Inserting the key, pushing inwards and turning it to the right, turns the power "On." Pushing inwards and turning it to the left (key upright) turns the power "Off." A set of 2 keys are supplied with each Rascal Scooter. We recommend that you put one away in a secure place in case you lose your operating key.



IMPORTANT

Always turn Scooter "OFF" and Remove key if you are leaving your Rascal unattended for any period of time. This will prevent unauthorized or accidental use.

Initial Set Up and Adjustments

Before using your Rascal scooter, you should perform the following initial setup and adjustments to ensure that you are as comfortable as possible. The setup and adjustments include:

- **Charging the Battery**
- **Adjusting the Seat/Armrests**
- **Adjusting the Handlebar Assembly and Dash Position**
- **Setting the Dashboard Clock**

Charging Batteries

Because your batteries may only have a partial charge when you first receive your scooter, you may not experience full riding time until you have fully charged them. Your scooter is equipped with an onboard battery charger. Charging your batteries as specified will ensure maximum life, power, and range. It is recommended that you charge your batteries as follows:

- **Upon initial receipt of your scooter.**
- **After daily use, regardless of battery level.**
- **For 8 - 10 hours (overnight) after extended use during the day.**
- **If the fuel gauge indicator should go into the red area while operating your vehicle, the batteries need to be recharged as soon as possible.**
- **The battery's life expectancy may be shortened if they are left fully discharged for more than 24 hours.**

Use the following to charge batteries of your Rascal scooter.

1. **Park the vehicle near a 3-Prong Grounded Electrical Receptacle.**

2. **Lift the trunk lid and remove the power cord from the trunk area. Plug power cord into a 3-Prong Grounded Electrical Receptacle.**

3. **Check that the needle of the ammeter (Illustration 3) in the trunk area registers greater than 1 to ensure that vehicle is in charge mode. If batteries are fully charged, the needle on the ammeter will remain at 0, as shown in Illustration 3. The needle on the Fuel Gauge on the dash in the green area indicating a full charge (and no charging is required).**

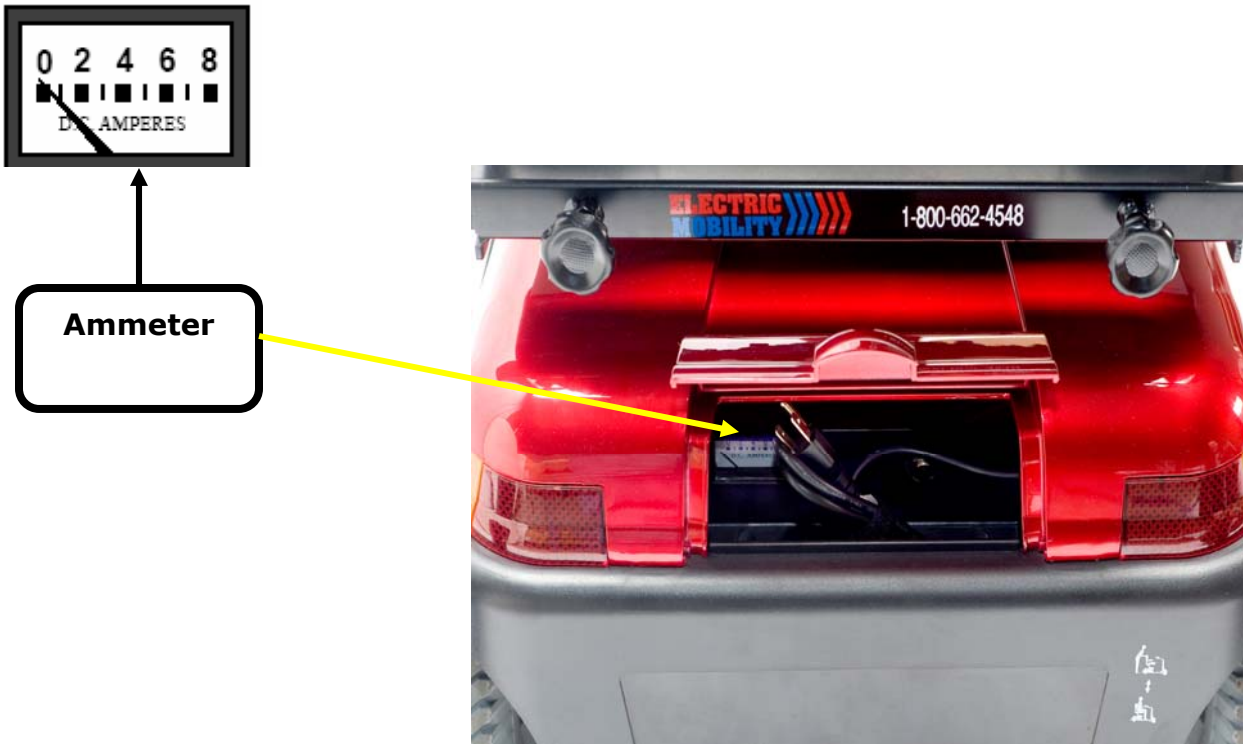


ILLUSTRATION 3 – Charging Batteries

4. **Normal charging time is generally 8-10 hours for fully discharged batteries. The batteries are fully charged when the needle of the ammeter is at 0. We do not recommend that you leave your vehicle in charge mode for greater than 24 hours.**

5. **Disconnect the power plug of the charger from the wall outlet and return it to the trunk area. Close trunk lid before operating vehicle.**

Note: Vehicle will not operate while in charge mode.

Adjusting the Seat and Armrests

Your scooter has been pre-adjusted to meet most customers' needs; however your scooter includes several adjustments to adapt it to specific height and width requirements. Instructions to perform these adjustments are presented in the following section:

Adjusting Armrest Width

The two armrests of the seat can be adjusted to different widths. Follow these instructions to adjust armrest width:

- **Loosen corresponding knob behind the seat**
- **Adjust width by pulling armrest out from seat to desired position**
- **Retighten knob to secure armrest at selected width. Be sure to repeat armrest adjustment on other side before riding.**

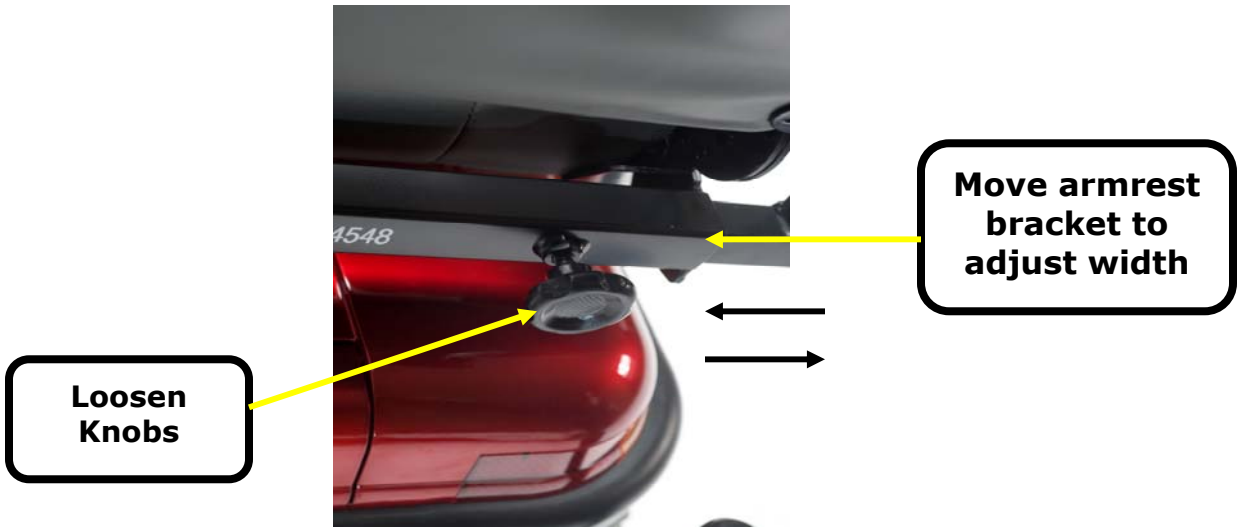


ILLUSTRATION 4 – Armrest Width Adjustments

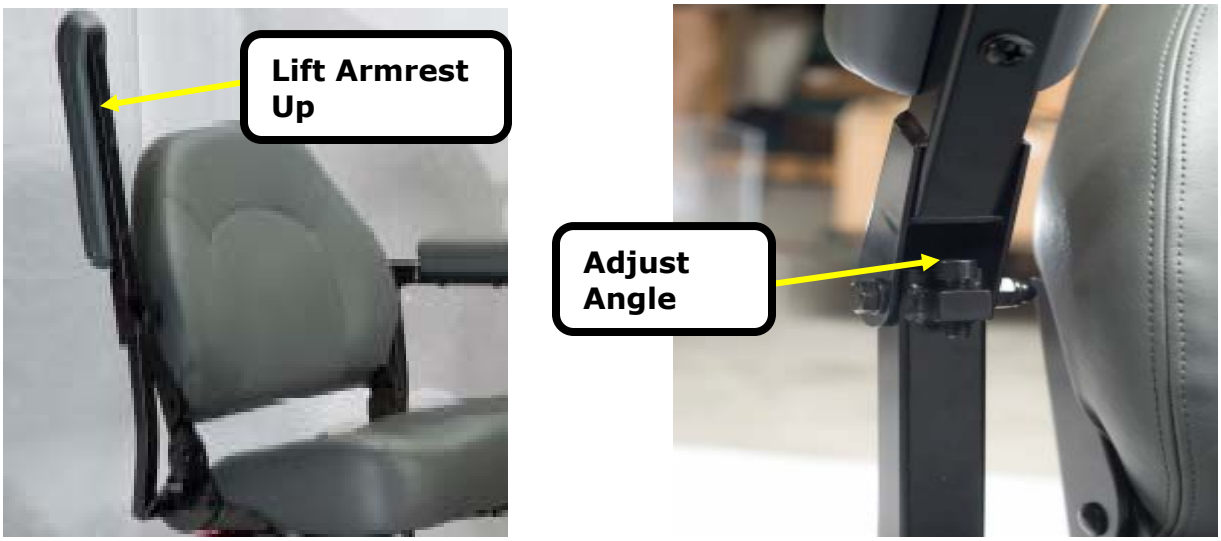


ILLUSTRATION 5A - Adjusting Armrest Angle

In addition to width adjustments, the armrests of the seat can be set at different angles for greater comfort. Follow these instructions to adjust armrest angle.

- **Lift armrest to full up position.**
- **Locate adjustment bolt within armrest joint. Turn bolt to vary armrest angle (wrench may be needed).**
- **Put armrest down into riding position and test for comfort before riding.**

Adjusting Backrest Angle

The seat is designed with three available backrest settings (90°, 95°, 100°) to allow you to adjust the angle of the back of your seat. The 90° setting provides the most upright position. Adjustment locations are shown in Illustration 5B.

The wrench and Allen key that come with the scooter is used in these adjustments.

To adjust the backrest angle:

- **Remove the nut and bolt on the hinge using the supplied wrench and Allen key.**
- **Reinstall the hardware into the desired seat back angle setting.**
- **Choose the position that is most comfortable for the user or as recommended by a seating professional.**
- **Be sure to set both sides in the same position.**

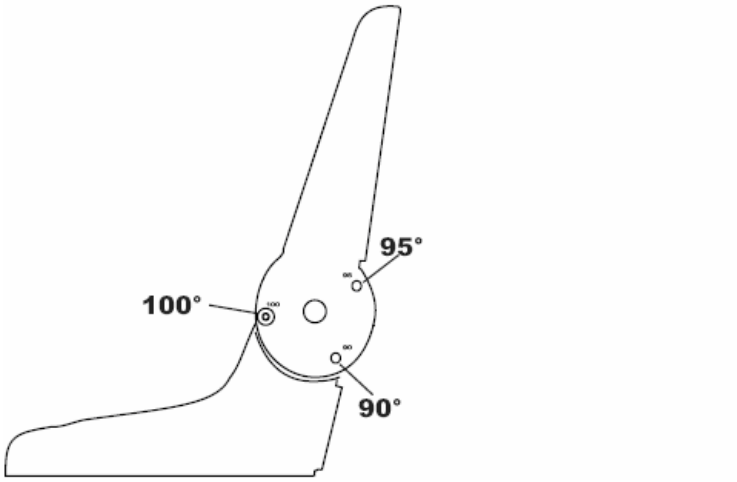


ILLUSTRATION 5B – Adjusting Backrest Angle

Adjusting Seat Swivel Position

The seat locking lever (located on each side of the seat) allows you to swivel your seat and lock it in at 90° increments. This locking lever is shown in Illustration 6. You may use this feature to make it easier to transfer in and out of the seat. To change seat positions:

- **Actuate the seat locking lever.**
- **Swivel the seat to the position you desire.**
- **Release the lever.**

Caution: After releasing the lever, turn the seat back and forth slightly to ensure the lever is locked into position.

ILLUSTRATION 6 – Seat Swivel Locking Lever

Adjusting the Dash and Handlebar Positions

Both the dash and handlebar include adjustments to allow them to be positioned according to your individual riding style. The angle of the dash can be adjusted up or down for maximum comfort and easier use of dash controls. The entire handlebar assembly can also be adjusted through a movable handle at the base of the lower handlebar. Dash and handlebar adjustments are shown in Illustrations 7 and 8.

Adjust dash angles so that your elbows can rest on the arm pads while you operate your Rascal and you can see the dash controls.

- **Sit in seat facing forward.**
- **Lift dash to upright position to access adjustment screw.**
- **Locate adjustment screw. Use Allen key (supplied) to turn screw clockwise to lower the angle or counterclockwise to raise dash angle.**

Adjust handlebar positions so that the handgrips are within comfortable reach.

- **Sit in seat facing forward.**
- **While holding the handlebar, reach down to the base and loosen the locking adjustment handle by turning handle counterclockwise.**
- **When at desired angle, tighten locking handle by turning clockwise.**
  Note: Lever can be positioned out of the way by pulling lever out and moving it away from rider. Release lever and it will lock in place.

7

8

ILLUSTRATIONS 7 & 8 – Dash and Handlebar Positions

Dashboard Clock

Your Rascal Balance Scooter comes with a removable, battery-powered, quartz clock that mounts directly in the dashboard of the scooter. This clock is shipped separately to allow you to set it to your local time before installing in the dashboard. Instructions are provided below to set the correct time and install it in the dash. Instructions to replace the clock battery are provided in the Maintenance section of this manual (see "*Clock Battery*" on page 31).

Setting the Clock

Locate the bag containing keys, clock, and other items shipped separately with the scooter. Unwrap the clock from its protective packing. If clock includes a small, plastic collar around stem, remove collar and push stem "IN" to start clock. Set clock to your local time by pulling stem out and turning to adjust hour/minute hands. Push stem in to start clock.

Installing the Clock

When you have set the clock to your correct, local time, you can install it in the dashboard of your Rascal scooter. Install the clock into the location adjacent to the Speed Control. The rubber gasket around the clock face is sufficient to secure the clock in place. Make sure the "12" faces "UP."

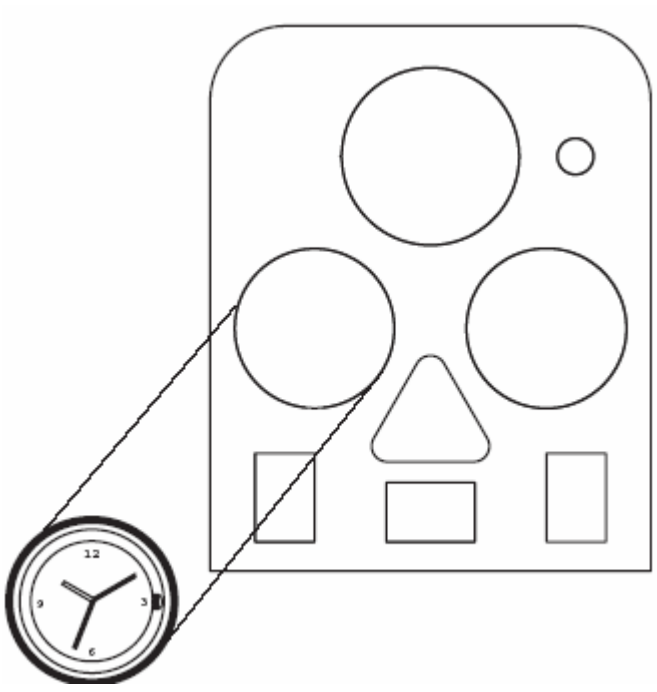


ILLUSTRATION 9 – Clock Installation

Seat Post Height Adjustment

If the scooter does not include an electric seat lift, the seat height can be adjusted manually. The Seat Post tube has 3 holes; this makes it adjustable so you can set the seat height that is most comfortable for you. Seat height adjustments are shown in Illustration 10. Seat post has been factory-lubricated with petroleum jelly for ease of movement. *BE CAREFUL* to keep lubricated areas free from clothing, carpets, etc. to avoid stains when adjusting seat height.

- **Remove the seat by holding Locking Lever backward and lift the seat straight up and off the Seat Post Assembly.**
- **Unscrew the Nut and Bolt to release the Adjustable Seat Post Tube from the base. Hold the Post with one hand and pull the Bolt with the other hand.**
- **Position the Adjustable Seat Post Tube to your desired height and align the holes in the Seat Post Base and Adjustable Seat Post Tube. Insert the bolt, and secure the assembly by tightening the nut.**
- **Replace the seat by holding the Locking Lever, insert the seat onto the Seat Post Assembly, and release the Locking Lever to lock the seat into place.**

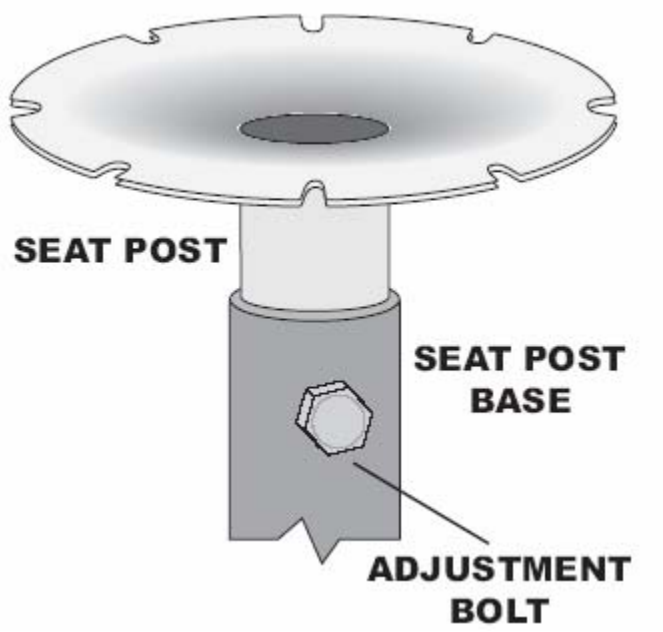


Illustration 10 — Seat Post Height Adjustment

Using the Scooter

Once you are familiar with the components, controls have charged the batteries, and made any height or width adjustments, you can follow these instructions in this section to operate it.

- **Transferring On & Off**
- **Driving**
- **Freewheel Operation**

Additional information, including disassembling and reassembling the scooter for transport/storage is presented in a subsequent section (see page 24).

Transferring Onto the Vehicle

Your scooter has been designed to make transferring on and off the vehicle as easy as possible.

WARNING!

Make sure the key switch is either in the OFF position or the key is removed before transferring ON or OFF the vehicle.

Use the following recommendations to assist you in making a more comfortable transfer.

1. The Scooter Dash lifts up and out of your way for maximum clearance.

CAUTION

Be careful if you use the dash to support your weight during transfers. Dash movement sideways may cause you to FALL.

2. The Seat can be swiveled and locked into one of four convenient positions (every 90°). To rotate the seat:

- **Lift the locking lever located on the side of the seat.**
- **Rotate the seat to desired position.**
- **Release the locking lever and check that the seat locks into position.**

3. **Lift folding armrests up and out of your way for added room to transfer. Once seated on the vehicle it is important that the rider check the following items before operating the vehicle.**

- **The Seat is locked into the forward position.**
- **The Scooter Dash is pulled down into riding position.**
- **The Folding armrests are down and in the riding position.**

Driving

Once seated on your Rascal scooter, driving is simple. Set Dial-a-Speed Knob to desired speed range. Use the Engager Lever to move forward (squeeze right side) or reverse (squeeze left side). Steer in the desired direction. Before driving, however, you should confirm the following:

- **Green Status Lamp is "ON" and not flashing**
- **Key is in "ON" position.**

Braking System

Whenever the engager lever is moved out of the neutral position, the electromagnetic brake will automatically release and your scooter will move. When the speed engager lever is released, it will return to the neutral position and the scooter will decelerate with regenerative braking and come to a complete stop. The parking brake will then engage preventing further movement of your scooter. If your scooter ever moves in an unexpected manner, release the speed engager lever. Once the scooter has come to a complete stop, turn off the power. Your unit is equipped with a controller that has a high pedal disable safety feature. This will prevent unexpected acceleration of the scooter, if the speed engager lever is activated at the same time you turn the key ON. To reset the controller, release the speed engager lever and turn the key OFF, then turn it back ON.

Safety Feature

There is a time delay between the release of the engager lever and when the parking brake automatically activates. This delay allows your vehicle to gradually slow down before the parking brake activates so you will come to a smooth stop.

Speed Settings

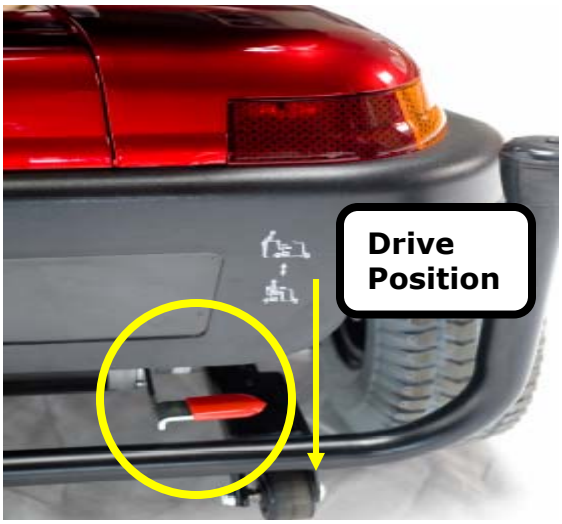
The top forward/reverse speed of the vehicle is set by the Dial-A-Speed knob on the dash. Lower settings, 1, 2 (indicated by the turtle symbol) result in slower speeds. Higher settings 9-10 (indicated by the rabbit symbol) provide faster speeds. When first operating your vehicle, select slower settings to operate the unit until you feel comfortable.

Freewheel Operation

The scooter features a "freewheel" mode to allow it to be pushed manually (push operation). To activate manually, turn the key switch OFF and locate the brake release lever under the rear cover on the right side. Push lever up to disengage the parking brake. Move lever down to engage the parking brake. When your vehicle is in manual push mode, parking and regenerative brakes will not operate. The Brake Release lever is shown in Illustration 11A and 11B.

WARNING!

DO NOT put Scooter in "FREEWHEEL" mode on an incline while seated.



11A

11B

ILLUSTRATION 11A and 11B – Brake Release Lever

It is recommended to place lever back in the 'DRIVE' (down) position to prevent the vehicle from rolling accidentally. Note: The vehicle will not operate unless the Brake Lever is in the 'DRIVE' (lowered) position and the Status Lamp does not flash indicating that the Brake Lever is in the DRIVE Position.

WARNING!

Before sitting on the Scooter, make sure the Brake Lever is in the DRIVE (lower) position to prevent the scooter from rolling. FAILURE TO DO SO MAY RESULT IN INJURY!

Vehicle Disassembly & Re-Assembly

Your vehicle has been designed for disassembly for convenient transporting and storage. The sequence listed below is for complete disassembly of your vehicle. Assembly is accomplished by reversing these steps. You may only need to disassemble a portion of the vehicle depending on your space requirements.

Removing the Front Basket

- **Grasp Basket firmly.**
- **Pull straight up and off the Mounting Post.**

Removing the Dash and Handlebar

- **Pull connector away from socket.**
- **Lift handlebar straight up to remove from front fork.**

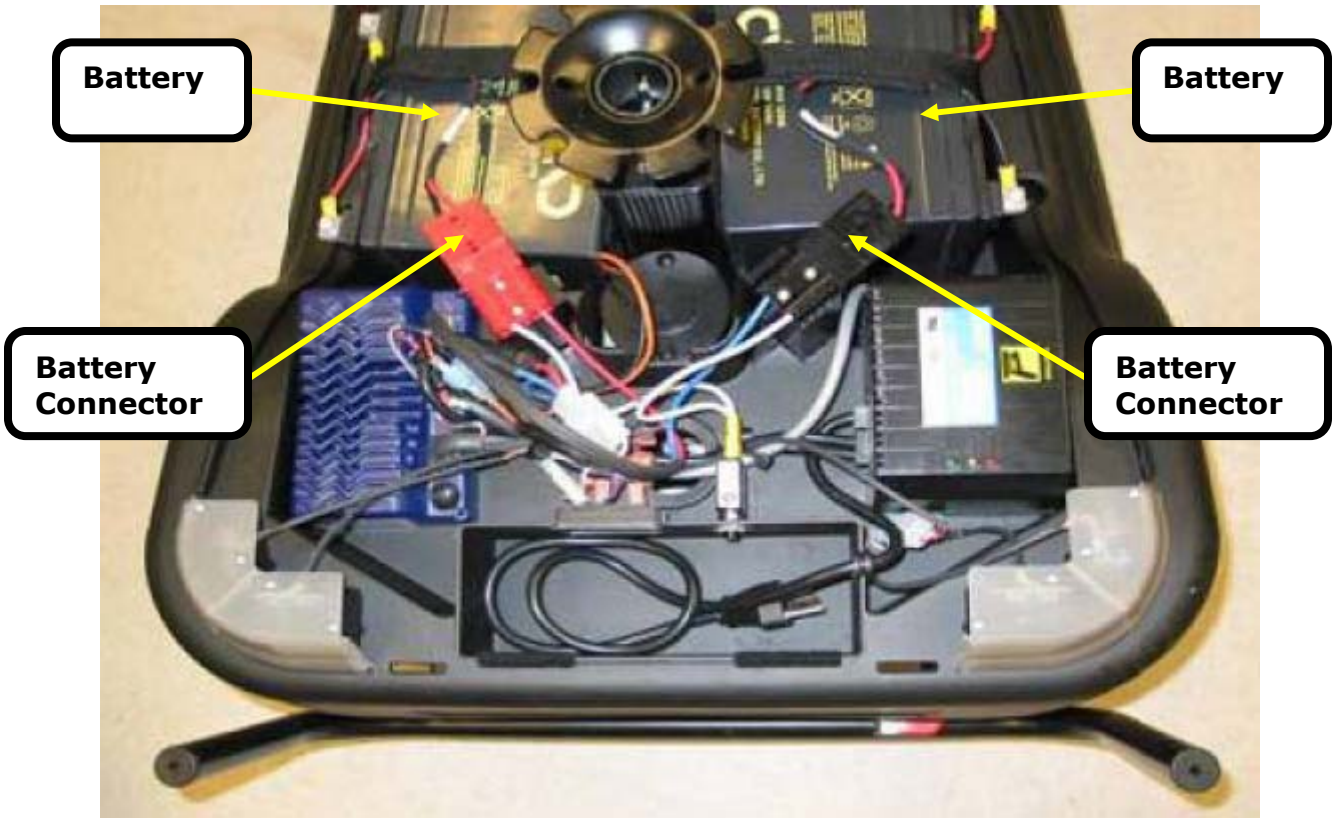
Re-Assembly Notes: **Ensure that connector latches in place. Verify that the front wheel and the handlebar are pointed in same direction before reassembling.**

Removing the Seat

- **Hold the Locking Lever backward (located on side of seat).**
- **Lift the seat straight up and off the Seat Post. Seat post has been factory-lubricated with petroleum jelly for ease of movement. *BE CAREFUL* to keep lubricated areas free from clothing, carpets, etc. to avoid stains when removing seat.**

Removing Batteries

- **Remove rear cover and undo the Velcro battery tie down strap.**
- **Unplug the connectors attached to each battery and lift each battery up and out of the vehicle.**



Re-Assembly Notes: **Make sure that the Velcro straps are securely and completely fastened.**

Removing the Front Section

CAUTION

Always make sure the Velcro battery tie down strap is connected or batteries are removed before standing vehicle upright onto the rear bumper.

- **Carefully stand scooter upright onto rear bumper.**
- **Follow tiller harness to locate the harness connection. Disconnect wiring harness at connector, as shown in Illustration 12.**
- **Remove harness from under harness guide and pull out the Quick-Disconnect frame pin as shown in Illustration 13.**

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ILLUSTRATIONS 12 & 13 – Removing Harness Connection and Frame Pin

- **Carefully rotate front end downward, away from rear section, as shown in Illustration 14. Only rotate partially down (less than 60°) to avoid damaging surfaces of scooter. Lift front section away and set aside.**

ILLUSTRATION 14 – Removing Front Section

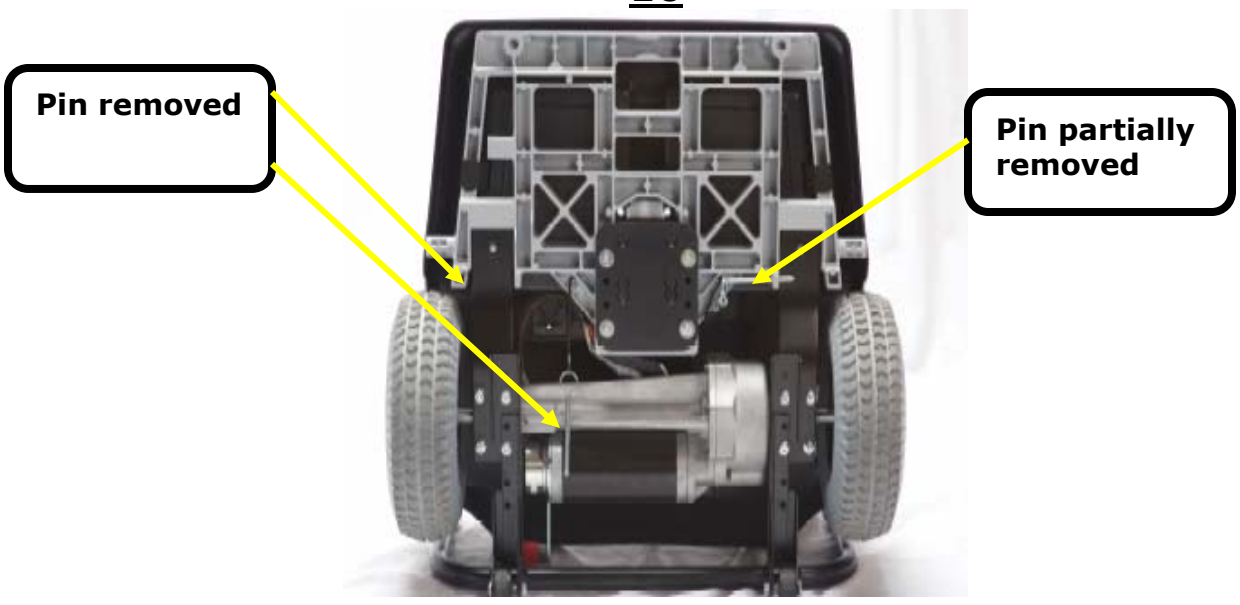
Removing the Rear Frame Section from the Drive Train

You can remove the Rear Frame Section from Drive Train assembly according to the following instructions. Rear Frame and Drive Train disassembly is shown in Illustrations 15, 16 and 17.

- **Remove Seat, Batteries, Dash/Handlebar, and Front Section as described previously.**
- **With the unit still standing upright on the rear bumper, disconnect both electrical connectors (4-prong and 2-prong) of the Drive Train Power Harness (Illustration 15). Remove both of the Quick Disconnect Pins used to hold leaf springs into position. (Illustration 16)**

15

16



ILLUSTRATIONS 15 and 16 – QDDT Removal

- **Grasp the top center of the frame and the Seat Post. Rotate rear frame forward and then lift straight up by seat post. (Illustration 17)**

ILLUSTRATION 17 – Removing Rear Frame Section from Drive Train

Transporting your Scooter

WARNING!

This scooter DOES NOT meet the Federal Safety Standards for use as motor vehicle seating. DO NOT SIT or PERMIT anyone else to sit in the seat of your scooter during transportation in a motor vehicle as this poses a significant RISK of BODILY INJURY or even DEATH.

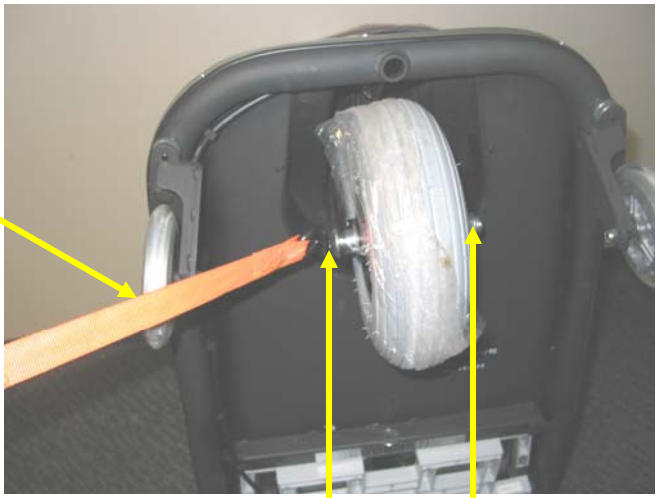
By Car - To transport your disassembled scooter by car, place each of the components into the trunk, being careful not to scratch or mark any of the finished surfaces. Make sure the batteries are on a level spot in your trunk. If you need assistance lifting weights, consider asking Electric Mobility's Customer Service Department or your authorized service center about the Rascal Electric Trunk Lift or other accessories. These devices will assist you in transporting your scooter by transferring these components in and out of your trunk with very little effort or carrying the Rascal inside a van or behind your car. (See "Specifications" for more information on weights).

By Airplane - To transport your unit on an airplane, we recommend that you call your airline and notify them at booking or at least 24 hours in advance to ensure to tell them you are bringing a scooter. Your Rascal batteries are approved for airline travel. Ask specifically where and with whom you should drop the unit off and where and with whom you should retrieve it at your destination.

Remember to bring this manual with you as a reference on your trip. Your manual will assist you in disassembling and reassembling your unit if required.
Prior to leaving the airport, remember to test the unit out when first getting on it. Direct any questions to the airline personnel if the unit does not work as it did prior to transportation.

If traveling outside of the United States, you may require a different plug adapter for your charger. Customer Service or your authorized service center can help you answer these questions and supply you with the charger or adapter you require.

<u>By Bus, Van or Truck without Disassembly</u> - If transporting your scooter fully assembled in a van, bus, or truck, secure it to the floor using a four point tie-down system. Tie down locations are on front fork and rear bumper. Make sure that the battery Velcro tie down straps are secure prior to transportation.
The operator of the scooter should then be seated in an approved seat in the transporting vehicle.



Maintenance and Servicing

This section presents information to keep your scooter in peak operating condition, including:

- **Preventative Maintenance**
- **Troubleshooting**
- **Factory Return Procedures**

Your Rascal scooter requires only minimal maintenance and by setting time aside each month for careful inspection and checking items included in this section, you can be assured of a long, useful life of your vehicle.

Preventative Maintenance

Performing periodic preventative maintenance on your scooter will ensure long, useful operational life as well as identifying any potential problems that may occur that might affect safe use and operation of the vehicle. Maintenance topics are presented in the following sections:

Battery Connections

Your scooter comes supplied with two battery cables. If disconnected, attach the red wire of the first cable to the (+) terminal of the first battery. Attach the black wire of the first cable to the (-) terminal of the first battery. Repeat this procedure for the second battery.

Tire Pressure

NOTE: All Rascal Balance units come equipped with a Foam Filled Front Tire which do not require inflation.

Check pressure in each rear tire. Tire pressure can be checked at most service stations. Tire pressure gauges can be purchased at local super markets, department stores in the automotive section, or at an automotive parts store.

Maintain the recommended pressure as specified on the tire. If the pressure is too low, inflate tire with an air pump. If the pressure is too high, deflate tire by letting some air out of the valve stem. Models equipped with pneumatic tires have inner tubes that are injected with a tire sealant that will seal punctures, which may occur when the vehicle is rolling. In the unusual event your tire does lose air due to a puncture, rotate the tire at least three times prior to re-inflating tire to recommended air pressure. If the tire continues to lose air, replace the tire

and sealant-injected inner tube. Replacement tires and inner tubes with sealant are available from Electric Mobility's Customer Service Department or your authorized service center.

Rear Wheel Removal

Remove the center hardware holding wheel onto axle. Pull wheel off axle, if snug, tap on tire with a rubber mallet while pulling on wheel (spin the wheel while tapping). Remove separate key. Retain key for later reassembly.

Re-Assembly Notes: **Slide the wheel onto axle, align key with slot in axle. If snug, tap on wheel lightly with a rubber mallet. Replace the hardware and tighten securely.**

Front Wheel Removal

Using the proper size wrenches on the nut and bolt, remove nut. Hold wheel and slide the bolt out of fork, being careful not to lose any of the wheel spacers.

Re-Assembly Notes: **Align the wheel in the front fork and slide the bolt through the fork and the wheel. Replace wheel spacers as required. Tighten the nut and bolt securely with the proper size wrenches. Check that the wheel spins freely. If not, loosen the nut (in quarter turn increments) until the wheel spins freely.**

Tire Tread Wear

Measure tire tread depth. If less than 1/32", it is recommended you replace the tire.

Seat Post Lubrication

The seat should rotate freely. Clean and lubricate the top of the seat post and the inside of the seat base attached to the seat. Lubricate with petroleum jelly or other similar lubricant.

Rear Caster Wheels

If the rear caster wheels are badly worn it is recommended that they be replaced.

Front Stabilizer Wheels and Forks

If the stabilizer wheels or forks are badly worn it is required that they be replaced to maintain stability when turning.

Self-Centering Stabilizer Magnets

The magnets should be occasionally cleaned of metal filings or other metal debris with a soft cloth. While cleaning avoid metal "splinters" from penetrating your skin.

ILLUSTRATION 18 – Stabilizer Magnets

Clock Battery

After time, the clock may begin to lose time, or stop, when the battery runs down. The battery is easily replaced by removing the clock from the dash and prying open the clock's case, then inserting a new battery. Use the following steps to replace the clock battery:

- **Remove clock from the dash.**
- **Use a small screwdriver to open the case by inserting the screwdriver blade into the notch on the back cover. Gently twist blade so that the back cover comes off.**
- **Slide the metal battery cover plate aside and remove battery.**
- **Install new battery with positive pole (+) facing outwards. Slide battery cover back in place over new battery. After replacing battery, make sure time setting is correct before replacing clock into dash.**

Battery Types: **SR626SW, UCC 377, Ray-O-Vac RW329**

Electrical Connections

Check battery terminals and all plug connectors to make sure that a tight connection is made. If battery terminals are corroded, disconnect the leads and clean all connections with a soft wire brush. Reconnect leads and apply a protective coating (e.g., petroleum jelly, etc.) to prevent corrosion.

Hardware Inspection

Check and make sure all fasteners are present and secure. Replace any missing fasteners and tighten any loose fasteners.

Cleaning Instructions

Wash your scooter with a sponge using household detergent diluted in warm water to clean all components (i.e., seat, front cover, floor pan, rear cover, etc.). Wipe excess soapy water from the vehicle using a clean damp cloth. Avoid getting any water on the electrical components (i.e., connectors, switches, battery terminals, etc.).

Polishing

Polish all plastic components to help protect them from scratches and a dull finish. This can be done by using a non-abrasive auto polishing material available at your local automotive parts dealer or local department store (automotive section). Make sure to clean the surface first with an auto body cleaner using a soft cotton cloth and dry before polishing. To bring out the shine, follow the manufacturer's instruction on the polishing material.

Vehicle Storage

If you will not be using your vehicle for an extended period of time, such as a month or longer, use the following guidelines to protect the vehicle and maintain the batteries:

- **Store the vehicle in a warm dry place and never leave it unprotected where it may be subjected to water damage (a cover is available for added protection).**
- **Charge the batteries fully before putting it into storage. Do not leave the batteries on continuous charge.**
- **Store batteries in a storage location where the temperature is between 5° to 104° F (-15° to 40° C). Do not place batteries near any heat sources such as transformers, sparks, or open flames.**

Note: **Recharge the batteries approximately every 30 days to maintain a full charge on the batteries.**

Troubleshooting

This table is only a guide to aid you in getting your vehicle operating, should you have any problems. If you are unable to get your vehicle operating, call either Electric Mobility Customer Service toll free number located at the front of this manual or your local Authorized Service Center.

Symptom	Possible Cause	Solution
Unit does not move.	Key switch not "ON".	Turn key switch to "ON".
	Main circuit breaker tripped.	Reset circuit breaker in trunk area.
	Brake release lever in "Push Mode".	Place lever to "Ride Mode".
	Charger connected to outlet.	Disconnect charger.
	Battery power low.	Recharge batteries.
	Battery harness loose or unplugged.	Plug harnesses into connector.
	Scooter shuts down to conserve battery.	Cycle key switch "OFF", then "ON".
	Controller error.	Check Status Lamp for Flash Code.
	Scooter is in seat lift mode.	Change rocker switch to "Drive" mode.
Scooter feels wobbly when driven.	Tire pressure low.	Inflate tire.
	Seat is loose.	Check Seat for loose hardware or damage. Ensure seat is in locked position.

Symptom	Possible Cause	Solution
Range Less than expected.	Charging too infrequently.	Charge unit more often.
	Defective or worn out battery.	Load test batteries, if necessary replace.
	Cold weather reduces battery life.	Allow batteries to reach room temperature and then fully re-charge.
	Defective charger.	Contact Electric Mobility or your Authorized Service Center.

Erratic behavior when engager operated.	**Faulty engager.**	**Contact Electric Mobility or your Authorized Service Center.**
Ammeter not registering.	**Batteries are fully charged.**	**Turn key switch "ON". Battery indicator should read "F" (Full).**
	Ammeter broken or wire disconnected.	**Replace ammeter or connect wire.**
	Batteries have bad cells.	**Load test batteries, if necessary replace.**
	Faulty charger.	**Contact Electric Mobility or your Authorized Service Center.**
Brake squeals.	**Dirt in brake pad.**	**Blow dirt out with air pressure hose.**
Brake release lever sticks.	**Rust and corrosion.**	**Spray ball detent area with lubrication oil. Be careful not to get oil onto the brake pad.**
Stiffness in steering.	**Bearings in head tube are worn.**	**Replace bearings.**

Controller Troubleshooting

The controller used in the scooter includes internal diagnostics programming used to identify and troubleshoot problems and/or faults. When this diagnostics programming detects a problem or fault, the Status Indicator lamp on the dash/tiller flashes consecutively up to nine times to identify the problem. These consecutive Flash Codes correspond to a cause and action described below:

Flash Code	Cause	Action
1 X	**Battery Charge Low**	**Scooter can be driven. Battery charge low. Recharge as soon as possible.**
2 X	**Battery Voltage Low**	**Scooter will not operate. Recharge batteries.**
3 X	**Battery Charge High**	**Scooter will not operate. Unplug charger, turn scooter power "ON" & "OFF", then "ON" again.**

4 X	**Current Limit Timeout**	**Scooter will not operate. Motor jammed or stalled. Turn power "OFF" and then "ON". If problem persists contact Electric Mobility or an Authorized Service Center.**
5 X	**Brake Fault**	**Scooter will not operate. Check Brake Release lever position. Check Brake connector. If problem persists contact Electric Mobility or an Authorized Service Center.**
6 X	**Out of Neutral at Power-Up**	**Scooter will not operate. Engager not in neutral (centered) when key switch turned "ON". Return lever to center and retry. Turn key "OFF", then "ON". If problem persists contact Electric Mobility or an Authorized Service Center.**
7 X	**Speed Pot Error**	**Scooter will not operate. Engager or wiring faulty or setup incorrectly. Contact Electric Mobility or an Authorized Service Center.**
8 X	**Motor Voltage Error**	**Scooter will not operate. Motor or wiring faulty. Contact Electric Mobility or an Authorized Service Center.**
9 X	**Internal Error**	**Scooter will not operate. Contact Electric Mobility or an Authorized Service Center.**

Factory Return Procedures

If a part or the entire product is to be returned, call Electric Mobility Customer Service Department for shipping instructions and to obtain a Return Authorization Number that must be placed on the return package. This number is used to identify the customer, the part and the type of repair. Any part or product received without this number will be returned to the sender at the sender's expense.

Parts Ordering Procedures/Policies

To help us serve you as quickly as possible have your original phone number, serial number, your order number, or your customer number ready when you call.

When ordering parts, please have your method of payment ready (i.e., credit card number and expiration date, check, or COD, etc.). All parts are shipped Ground transportation. Alternate shipping arrangements may be made for an additional charge based on weight and destination (i.e. Next Day, 2nd Day, etc.). All part sales are final with the exception of parts misdiagnosed as faulty by Electric Mobility Corporation. The freight costs for parts are the responsibility of the purchaser.

Limited Warranty Information

Electric Mobility Corporation guarantees for the original purchaser that the frame of the vehicle will be free from manufacturer's defects in materials and workmanship for the lifetime of the vehicle providing it is properly used and maintained in accordance with the owner/operator manual. This warranty excludes replacement or repairs due to normal usage resulting in rust or corrosion. Should a defect in materials or workmanship appear, Electric Mobility Corporation will repair, or at its option, replace the frame.

Electric Mobility Three Year Limited Warranty

Drive Train including transaxle, motor and brake:

1st Year: We pay 100% replacement of parts cost. You pay nothing.

2nd Year: We pay 67% replacement of parts cost. You pay 33%.

3rd Year: We pay 50% replacement of parts cost. You pay 50%.

Three Year Drive Train Warranty Exclusions:

1. Transaxle: In cases where there is an increase in the operational noise level, the warranty will not apply. (This usually occurs due to abusive and excessive strain on scooter.)
2. Motor: If damage occurs to commutator of motor as a result of not replacing motor brushes after heavy wear to brushes. Motor brushes are wear items and are warranted for one year.

3. Brake: Three year warranty for electrical function of the brake. Brake pads are a wear item and are warranted for one year.

Electric Mobility One Year Limited Warranty

For one year from date of purchase Electric Mobility Corporation will repair or replace at our option to the original purchaser, free of charge, any part found upon examination by an authorized representative of Electric

Mobility Corporation to be defective in material and/or workmanship. Warranty does not include shipping costs of replacement parts.

Warranty service can be performed by an authorized service representative or by Electric Mobility Corporation. Do not return faulty parts to Electric Mobility Corporation without prior consent. Purchaser is responsible for all transportation costs and shipping damage incurred while submitting parts for repair or warranty replacement.

One Year Warranty Exclusions:

1. Plastic shrouds, tires (including flat tires), seats, baskets are wear items and not warranted.

2. Electric Mobility Corporation will replace defective batteries at no cost during the first sixty days. After sixty days, battery replacement costs are prorated for an additional ten months at 10% each month and are the responsibility of the original purchaser. Example: For a battery that costs $89.95 that requires replacement in the first month after sixty days – your cost would be 10% of $89.95 or $8.99.

3. Damage caused by:

- **a. Battery fluid spillage or leakage.**
- **b. Abuse, misuse, accident or negligence.**
- **c. Improper operation, maintenance or storage.**
- **d. Commercial use or use other than normal.**
- **e. Repairs and/or modifications made to any part without specific consent from Electric Mobility Corporation.**
- **f. Circumstances beyond the control of Electric Mobility Corporation.**

4. Labor, service calls, shipping and other charges incurred for repair of the product unless specifically authorized by Electric Mobility Corporation except during the first thirty days of ownership.

There is no other express warranty.

Disclaimer

THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, IMPLIED OR EXPRESS, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ELECTRIC MOBILITY CORPORATION FURTHER DISCLAIMS LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES TO INCLUDE BUT NOT LIMITED TO, PERSONAL INJURY OR PROPERTY DAMAGE ARISING FROM ANY DEFECT IN THE PRODUCT.

Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from the date of purchase and to the extent permitted by law. Any and all implied warranties are excluded. This is the exclusive remedy. Liabilities for consequential damages under any and all warranties are excluded.

Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion my not apply to you.

This warranty gives you specific rights and you may also have other rights which vary from state to state. Please fill out and return the warranty card to Electric Mobility Corporation. This will aid Electric Mobility Corporation in providing the best possible Technical and Customer Service.

For warranty service please contact the Electric Mobility Customer Service Department or your authorized Electric Mobility service center.

USA **For service and parts, our toll-free number is:**
1 (800) 257-7955

Canada **For service and parts, our toll-free number is:**
1 (800) 665-0065

UK **For service and parts, our toll-free number is:**
0-800-252614

Other Countries

Please call 1-856-468-1000 for the name and address of distributors in other countries.

Specifications – 600 B

Parameters	
Overall Length	46" (116.8 cm)
Width	25" (63.5 cm)
Turning Radius	42" (106.7 cm)
Incline – Seat Height 23" **Incline – Seat Height 27.25"**	10° @ 450 lbs. 7° @ 450 lbs.
Max. Spd. (Heavy Duty Drivetrain) **Max. Spd.(High Speed Sport Drivetrain)**	5.0 mph (8 km/h) @ 220 lbs. 5.9 mph (9.5 km/h) @ 220 lbs. (OPTIONAL)
Weight Capacity	450 lbs. (204 kg)
Maximum Range[1]	Up to 25 miles (40.2 km)
Front Tires	10" x 3" Foam Filled (25.4 x 7.6 cm)
Rear Tires	10" x 3" Air Filled (25.4 x 7.6 cm)
Seat Height	Seatpost **-** 21.5" - 23" (55 - 58 cm) Seatlift- 22.25" - 27.25" (56.5 – 69 cm)
Weights	
Front End	30 lbs. (13.6 kg)
Rear Section	23.5 lbs. (10.7 kg) Seatlift- add 8.5 lbs (3.9 kg)
Seat, w/Armrests	33.5 lbs. (15.2 kg) Plastic seat- 24 lbs (10.9 kg) 350 lb wt limit
Handlebar/Tiller	8 lbs. (3.6 kg)
Batteries (each)	21 lbs. (9.5 kg)
Drive Train	36 lbs. (16.3 kg)
Total Vehicle Weight	173 lbs. (77.8 kg) Seatlift- add 8.5 lbs (3.9 kg)
Heaviest Component	36 lbs. (16.3 kg.)

[1] Range is calculated under test conditions. Weight, terrain and weather conditions can affect range of travel.

The Rascal Balance meets passed all the required tests to be in compliance with ANSI/RESNA Wheelchairs Standards Volumes 1 & 2 and ISO 7176.

Specifications – 700 B

Parameters	
Overall Length	43" (109.2 cm)
Width	25" (63.5 cm)
Turning Radius	38.5" (97.8 cm)
Incline – Seat Height 23" [1] **Incline – Seat Height 27.25"[1]**	10° @ 400 lbs. 7° @ 400 lbs.
Max. Spd. (Heavy Duty Drivetrain) **Max. Spd.(High Speed Sport Drivetrain)**	5.0 mph (8 km/h) @ 220 lbs. 5.9 mph (9.5 km/h) @ 220 lbs. (OPTIONAL)
Weight Capacity	400 lbs. (181 kg)
Maximum Range[2]	Up to 25 miles (40.2 km)
Front Tires	10" x 3" Foam Filled (25.4 x 7.6 cm)
Rear Tires	10" x 3" Air Filled (25.4 x 7.6 cm)
Seat Height	Seatpost **-** 21.5" - 23" (55 - 58 cm) Seatlift- 22.25" - 27.25" (56.5 – 69 cm)
Weights	
Front End	28.50 lbs. (12.9 kg)
Rear Section	23.5 lbs. (10.7 kg) Seatlift- add 8.5 lbs (3.9 kg)
Seat, w/Armrests	33.5 lbs. (15.2 kg) Plastic seat- 24 lbs (10.9 kg) 350 lb wt limit
Handlebar/Tiller	8 lbs. (3.6 kg)
Batteries (each)	21 lbs. (9.5 kg)
Drive Train	36 lbs. (16.3 kg)
Total Vehicle Weight	171.5 lbs. (77.8 kg) Seatlift- add 8.5 lbs (3.9 kg)
Heaviest Component	36 lbs. (16.3 kg.)

[1] Incline was measured while vehicle was operated under worst case conditions: e.g. weight, seat height, and restarting in forward direction after moving backwards down an incline.

[2] Range is calculated under test conditions. Weight, terrain and weather conditions can affect range of travel.

The Rascal Balance passed all the required tests to be in compliance with ANSI/RESNA Wheelchairs Standards Volumes 1 & 2 and ISO 7176.

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