

**CitiCar<sup>®</sup>**

**1976 1/2**

**OWNER'S  
MANUAL**

**CitiCar** TRADEMARK OF SEBRING-VANGUARD, INC.

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NOTE: The descriptions and specifications contained in this manual were in effect at the time the book was approved for printing. Sebring-Vanguard, Inc. reserves the right to discontinue models at any time, or to change specifications or design, without notice and without incurring obligation.

**A MESSAGE TO OUR CUSTOMERS FROM ROBERT G. BEAUMONT, PRESIDENT**

**Congratulations! You have just purchased a Sebring-Vanguard CitiCar. There are a few things I would like to mention that will contribute to a long and pleasant relationship between you and your new vehicle.**

**The CitiCar is like a conventional automobile in that you the owner must care for it according to the instructions of this manual. You will notice, however, that this manual contains some important instructions which are completely new and different from any you have ever read and followed before. With proper operation and maintenance, your CitiCar should reward you with years of economical and efficient driving pleasure.**

**Like many types of machinery, your CitiCar will gradually improve in operation over the first few hundred miles of use. The batteries, which are the finest available today, need about ten recharges for the lead plates to settle properly. Also, the differential or drive-train gears should break in gradually, thus giving you improved range, speed, acceleration and efficiency.**

**While your CitiCar has very few parts requiring maintenance, compared to a conventional car, I urge you to follow the servicing schedule prescribed in this manual and highly recommend that this work be performed by the trained servicemen at an Authorized Sebring-Vanguard dealership.**

**Finally, as President of Sebring-Vanguard, Inc.; I can assure you that planned obsolescence is not a part of your CitiCar. It is unthinkable in our organization. There are some components of the CitiCar which will have to be replaced, such as the batteries which are the heart of the entire vehicle, but over the life of your CitiCar, the cost of maintaining and servicing the CitiCar should be low, indeed. Therefore, take care of your CitiCar as the manual explains! In purchasing this vehicle, you have taken an important step in conserving precious energy that will be more costly and in shorter supply in the years to come.**

**Robert G. Beaumont  
SEBRING-VANGUARD, INC.**

#### **PRE-DELIVERY SERVICE**

For your maximum satisfaction, your vehicle has been inspected and prepared for delivery by your authorized selling dealer in accordance with the manufacturer's recommendations.

#### **LIMITED WARRANTY**

The warranties covering this vehicle are stated in detail in the warranty folder. This folder is found along with the Owner's Manual in the Sebring-Vanguard, Inc. owner's package, supplied with each vehicle. Please read the warranty carefully. It states in precise terms everything that is covered by the Warranties. If your dealer has not done so, please be sure to complete and return to Sebring-Vanguard, the blue warranty card which is in your owner's package. Your warranty may not be honored if the card is not on file in our office.

#### **WARRANTY SERVICE**

Your authorized selling dealer will perform any service which may become necessary under the Manufacturer's CitiCar Warranty, and you should go to your selling dealer for such service if possible. If you cannot return to your selling dealer, however, any Sebring-Vanguard, Inc. Authorized Dealer will honor the Manufacturer's CitiCar Warranty.

Your Authorized Sebring-Vanguard Dealer will assist you in locating your nearest warranty office or service center if any component of your CitiCar warranted separately by another manufacturer is found to be defective.

#### **VEHICLE IDENTIFICATION**

The official vehicle identification number for title and registration purposes of this vehicle is stamped on a metallic tag that is fastened to the instrument panel close to the windshield on the driver's side, and is visible from the outside of the car. The identification number can also be found stamped on the section of the aluminum chassis located just inside the right rear wheel. The Federal Certification Label is located on the left

side of the dash panel so as to be seen when the driver's door is opened.

#### **LICENSING YOUR CITICAR**

Your CitiCar complies with most applicable Federal Motor Vehicle Standards in effect at the time of manufacture. The National Highway Traffic Safety Administration has granted Sebring-Vanguard some exemptions, indicating that it is in the public interest. Therefore, your CitiCar should be licensable in all states. Simply take your CitiCar to the nearest state inspection station for the necessary testing and documentation.

#### **INSURANCE**

Your CitiCar should be insurable through your own personal insurance agent. Chances are the home office of your insurance company has already insured other small licensable electric vehicles. If any questions arise, please refer your agent to the Customer Service Department of Sebring-Vanguard, Inc.

Insurance should be no different from any other compact motor vehicle. In fact, because the CitiCar will be used only at low speeds and for short-distance driving around town, we think rates for this vehicle will someday be less than for cars driven at highway speeds and for possibly hundreds of miles per day.

#### **HOW TO USE YOUR 1976 OWNER'S MANUAL**

This 1976 Owner's Manual will help you become familiar with day to day care and owner maintenance. For ease of reference, the manual has been sectionalized to group related information together in a quick-to-locate form. To make you familiar with all operating features, there is an illustrated guide to your CitiCar shown on the following pages.

## SECTION I - MOTIVE POWER SYSTEM

Your CitiCar is powered by electricity. This is not a new concept in motive power as it has been used successfully for years by trains and trolleys. However, this is the first time in several decades that an electrical automobile has been produced. In much the same way that a conventional automobile gets its gasoline from a gas pump, stores it in its gas tank, and converts it to motion in the engine, the CitiCar gets its energy from a wall outlet, stores it in its batteries, and converts it to motion in the motor. Since the parts of an electric vehicle are different and require different care than a gasoline car, it is important to read carefully the following section on the care of your CitiCar.

### BATTERIES

With the purchase of a Vanguard CitiCar, you, the Owner, will no longer be able to take batteries for granted. In fact, the 6-volt batteries located under the passenger seats will probably be given more maintenance attention than all other parts of your CitiCar combined.

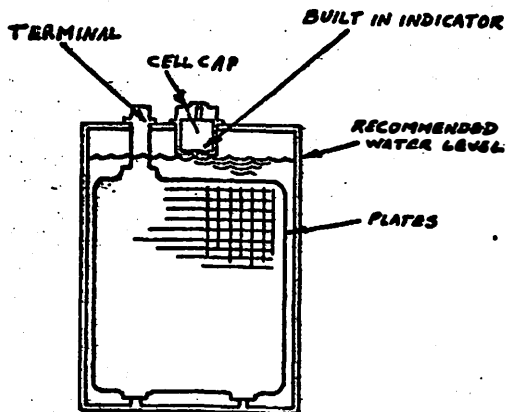
Unlike standard automobile batteries, your electric vehicle batteries are designed for hundreds of recharge cycles. With proper care, these batteries should offer 12,000 to 18,000 miles of performance. Neglect of the batteries will result in premature battery failure and therefore, a higher cost per mile for battery depreciation.

The four most common reasons for battery failure are:

- 1) Discharging too deeply.
- 2) Failure to add water when needed.
- 3) Failure to recharge soon after use.

## BATTERY WATER

Clear distilled water is the life blood of your battery. Distilled water can be purchased by the gallon in grocery stores or can be obtained by using a filter. Clean rain water and melted snow is also acceptable for use in the batteries. Check the water level as often as is necessary. Usually, once every week is enough. Old batteries may need additional water as often as two or three times per week. TO AVOID OVERFLOW, ADD WATER ONLY WHEN THE BATTERIES ARE FULLY CHARGED. Maintain the water level up to the built-in indicator, the bottom ring of the cell filler well (see diagram). AT NO TIME SHOULD THE WATER LEVEL BE ALLOWED TO FALL BELOW THE TOP OF THE PLATES.



**CAUTION:** The water you add to the batteries mixes with the battery electrolyte and becomes corrosive. In case of accidental contact with your eyes, skin or clothing, flush immediately with a large quantity of water. If any electrolyte reaches your eyes, IMMEDIATE MEDICAL ATTENTION IS RECOMMENDED.

**CAUTION:** Battery gases are explosive. Do not smoke or subject the area near the batteries to sparks or flames after recharging or when the cover to the battery compartment is removed. **NOTE:** The seat belt buckles are metal and may cause electrical shorting; when removing the bench seat, make sure the seat belts are safely tucked away behind the seat backs.

**CAUTION:** Extreme caution must be exercised when working with metal tools in the battery compartment, since a shorting between the battery terminals can cause severe injury.

### **THE HYDROMETER (OPTIONAL)**

The hydrometer (pictured below) is used to test the strength of the battery electrolyte. This is done by drawing some of the electrolyte from the battery into the hydrometer and taking a reading from the dial floating in the meter.

### **DIRECTIONS FOR USING THE HYDROMETER**

1. Remove the vent cap from the battery
2. Squeeze the rubber bulb; insert nozzle into hole.
3. Hold vertically and draw electrolyte into the hydrometer by releasing the pressure on the bulb until the fluid is between the two marks at the top of the meter.
4. **DO NOT REMOVE THE HYDROMETER FROM FILLER WELL WHEN READING TO PREVENT ELECTROLYTE FROM DRIPPING ON THE BATTERIES.**
5. Tap the side of the meter to remove any bubbles in the electrolyte solution.
6. Take a reading. When the electrolyte temperature is at 80° Fahrenheit, the cells of a fully charged battery will read between 1250-1275; a 1225 indicates about half a charge. To achieve an accurate indication of the specific gravity when the electrolyte is colder, subtract 4 for every 10 degrees that the electrolyte is below 80 degrees. Return the electrolyte solution to the batteries.
7. Replace vent cap.
8. Repeat procedure with all remaining cells.
9. Remember - the hydrometer only measures the electrolyte's specific gravity. It will not indicate a voltage deficiency in the battery itself.

**NOTE:** These procedures should be followed at least once a month as a maintenance check or whenever a decrease in vehicle performance occurs and a poorly functioning battery is suspected.



## BATTERY CHARGING

Your Sebring-Vanguard CitiCar is equipped with our exclusive design solid state automatic battery charger.

To recharge the batteries, simply connect a heavy-duty extension cord from the external plug on the driver's side to any convenient 110-120V AC outlet. Once plugged in, the "CHARGE" light on the dash will glow, indicating that charging has automatically begun. As long as the cord is plugged in, an automatic interlock system on your CitiCar will prevent accidental vehicle operation. When the batteries are fully charged, as determined by cell voltage sensing circuits, the "READY" light will come on.\* This light will flash at a varying rate as the charger supplies short pulses of energy to the batteries to keep them at a full-charge level.

For best CitiCar performance and longer battery life, make it a habit to plug in your CitiCar as soon as practical after driving. Although our unique charger design will prevent overcharging, it is advisable to unplug your fully-charged CitiCar when it is to be left idle for an extended period, i.e. going on vacation, etc. Before using the CitiCar after a week or two of non-use, the charger should be plugged in again to bring the batteries back to full charge. For longer periods of time, a month or longer, arrangements should be made to have the CitiCar plugged in for a day or so every 3 or 4 weeks.

Under normal everyday use, your charger should be able to easily recharge the batteries overnight. Most charging should be done at this time when utility companies have sufficient generating capacity. In some areas, the cost of electricity is less during the nighttime hours. Heavily discharged batteries may require 12 or more hours to achieve full charge.

If, at any time, you feel that the charger is not cutting off after a reasonable period of time, or perhaps you feel it is cutting off before the batteries have received a full charge, it is advisable to return your CitiCar to your Sebring-Vanguard dealer who can determine if an adjustment of the charger is necessary.

\* Some models are equipped with a DC-Amp meter in lieu of a "READY" light. This meter registers the rate of electricity flow into the batteries. As the needle approaches zero amps, the batteries are becoming fully recharged. When fully recharged, the needle in the meter will fluctuate.

When the needle reads below 10 amps, the batteries are about 80% recharged, and you can plan your driving accordingly.

### IMPORTANT

Here is why recharging the batteries will maximize battery life: Battery life is threatened if, in the process of not completely recharging the batteries, sulfation crystals form on the lead plates within the batteries. If these sulfation crystals grow too large through inadequate charging, they will break off the plates and cause deterioration of the battery interior. Battery sulfation can be avoided by recharging the CitiCar's batteries every night.

**NEVER LEAVE THE BATTERIES FULLY OR DEEPLY DISCHARGED FOR MORE THAN 24 HOURS.**

**NOTE:** When the CitiCar is new, or when a new set of batteries has been installed, your batteries will need a few hundred miles to reach maximum performance. Therefore, avoid driving the CitiCar more than 25 miles per charge for the first 200 miles.

**NOTE:** In somewhat the same way that it is beneficial for a conventional car to be driven occasionally at highway speeds, it is also beneficial for the CitiCar to occasionally be driven up to its maximum range before recharging. In layman's terms, this tends to clean off the battery plates. This improves the CitiCar's performance and lengthens the life of the batteries. Although it doesn't hurt a gasoline car to drive it when the gas tank is near empty, driving an electric car too far on a low charge can cause the batteries to age more rapidly. During daily operation of the CitiCar, you will be able to maximize your battery life by avoiding discharging the batteries too deeply (driving the CitiCar too far), preferably, not beyond the halfway mark of the CitiCar's maximum range.

#### **OTHER IMPORTANT BATTERY CARE**

The tops of the battery cases should be kept clean. This can usually be accomplished by spraying them lightly with water from a garden hose and scrubbing loose, with a brush or rag, the dirt and grime which has been accumulated. Perform this maintenance at least once a month.

**NOTE:** Make sure that all of the cell caps are tight during this operation. Also, baking soda can be used to neutralize the acids which are present. The battery terminals have anti-corrosion rings under them. In spite of this protection, if corrosion does occur, take your CitiCar to your nearest authorized dealer for cleaning, replacement rings, and further corrosion protection. Finally, the tiny hole in the vent cap should be cleaned periodically so that the battery gases will be permitted to escape freely.

All eight batteries under the seat power the drive motor exclusively. A ninth 12-volt battery located to the right of the charger operates the lights, controller, wiper and other accessories. This battery is recharged automatically whenever the charger is plugged in. Check the water level in this battery at least once a month. If your CitiCar is not equipped with a separate accessory battery and your accessories are powered by two of the eight batteries under the seat, have your authorized dealer rotate your batteries every three months in order to compensate for the minor imbalancing that may occur in the system.

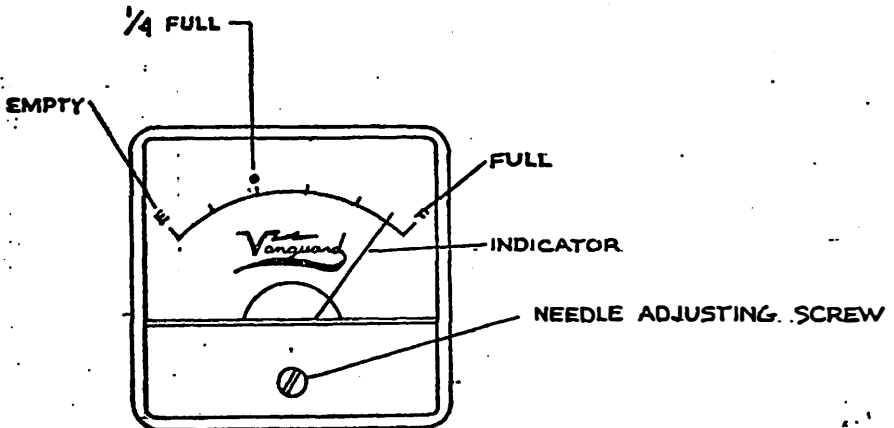
## MOTOR AND CONTROLLER

The electric motor of your CitiCar is attached to the transaxle. If the Hot Motor lamp, located on the dash panel, should light during operation, stop the CitiCar for several minutes until the light goes out.

A motor cooling fan is designed to go on automatically in order to minimize the likelihood of this occurrence. Unless it is wintertime and maximum passenger compartment heat is desired, the knobs of the air venting system behind the driver's seat should be set on "Max. Motor Cooling" so that cool external air is able to flow through the side vents into the electric motor.

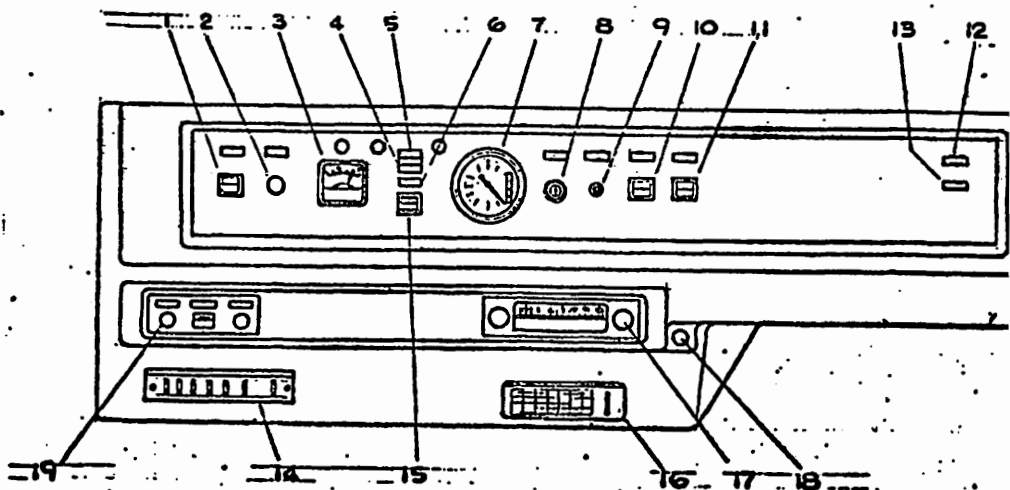
The three stage control system is contained in the vehicle. When the F/R position is engaged and the accelerator pedal is depressed, your controller will regulate voltage to the motor, and therefore, vehicle speed.

Also found in the control system is a 40 amp circuit breaker protecting the high power circuit. If your vehicle ever fails to operate and the voltmeter reads empty, it is an indication that the circuit breaker has to reset itself.



## SECTION II - INSTRUMENTS AND CONTROLS OPERATION

### INSTRUMENT PANEL



1. HEADLIGHT SWITCH (manual operation)

2. DASH DIMMER

3. VOLTMETER (see diagram below)

The Voltmeter is designed to show the usable amount of electrical energy that the batteries have left. The "E" indicates a full discharge. "F" indicates a full charge and the red dot indicates about  $\frac{1}{4}$  of a charge left. An accurate reading can be obtained when the accelerator pedal is fully depressed and the CitiCar is running at cruising speed. This gauge gives only an approximate reading; as you become more familiar with your CitiCar, you will be able to better estimate your CitiCar's state of charge at any given time.

**4. PARKING BRAKE LAMP**

The parking brake warning lamp lights up when the parking brake is on.

**5. HIGH BEAM INDICATOR LAMP**

**6. HOT MOTOR INDICATOR LAMP**

The hot motor indicator lamp lights up when the motor overheats. (NOTE: also lights up momentarily when ignition is turned on.)

**7. SPEEDOMETER - ODOMETER**

**8. POWER SWITCH**

The power switch controls all electric power in the vehicle. To activate, simply turn the key to the "ON" position and the power lamp will light up, unless the charger is still plugged in or the parking brake is on.

**9. SHIFT SWITCH**

This switch incorporates three positions...forward (up), neutral (center), and reverse (down). There is a safety lock in the neutral position which prevents moving the switch from one direction to another while pressure is on the switch. When changing direction, remove the finger pressure when the switch stops and allow the switch to reset, then proceed with your change from forward to reverse or from reverse to forward. (CAUTION: To avoid excessive strain on the electrical control system of the CitiCar, come to a full stop before changing directions. This will assure you of the utmost performance from your vehicle, and will add years to the life of the drive train. Also, when parking the vehicle, always set the parking brake.)

**10. WINDSHIELD WIPER SWITCH - 2 SPEED**

**11. ACCESSORIES (for future use)**

**12. CHARGE LIGHT (see page 8 BATTERY CHARGING)**

**13. READY LIGHT (or meter) (see page 8 BATTERY CHARGING)**

**14. FUSE PANEL**

- FROM LEFT TO RIGHT -

1. Voltmeter - 10 amp
2. Windshield wiper - 10 amp
3. Radio/heater - 10 amp
4. Controller - 15 amp
5. Brake/turn signal, horn - 15 amp
6. Lights - 20 amp
7. Courtesy lights, lighter - 10 amp
8. Accessory, for future use.

**NOTE:** A burned-out fuse usually indicates an electrical short circuit. Insert a second fuse. If this fuse immediately burns out, and you cannot locate the cause, return your CitiCar to your Authorized Vanguard dealer for a circuit check.

- 15. HAZARD WARNING FLASHERS**
- 16. COURTESY LAMP**
- 17. RADIO (Optional)**
- 18. CIGAR LIGHTER (Optional)**
- 19. HEATER/DEFROSTING SYSTEM**

## CITICAR MOTOR COOLING/PASSENGER HEATING/WINDSHIELD DEFROSTING SYSTEM

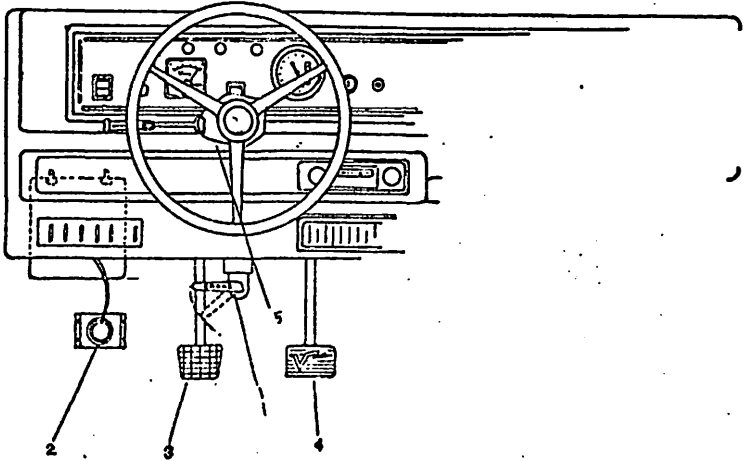
During normal operation, heat is directed into the passenger compartment by pulling the control knob marked "HEAT". The amount of heat may be controlled by adjusting the extension of this knob. For full defrosting, pull the "Defrost" knob as well. Heat and Defrost may be proportioned by adjusting the position of the Defrost knob. In addition, the heat or defrost volume may be increased by turning the "Fan" switch on.

In extreme cold conditions the outside air may be shut off and the passenger heating improved by adjusting the two knobs behind the driver's seat. The normal position of the return air control is with the knobs together to assure maximum motor cooling.

When the knobs are pushed outward, outside air is shut off and only the warmer air from the passenger compartment is directed into the motor. This will result in warmer air returning from the motor back into the passenger compartment for further recirculation.



## FLOOR AND STEERING COLUMN CONTROLS



### 1. PARKING BRAKE

For safety's sake, apply when the car is parked. Pull out to engage. Turn handle and push forward to release. The parking brake also includes an electric interlock which completely shuts off the power circuit while engaged. Apply foot brake when pulling out hand brake.

### 2. WINDSHIELD WASHER PUMP

Press the floor plunger with your foot several times before turning on wiper (to avoid scratching the windshield). To refill the reservoir, remove it from under the dash, on the driver's side, unscrew the cap, fill with water or an anti-freeze type of washer solvent, and replace.

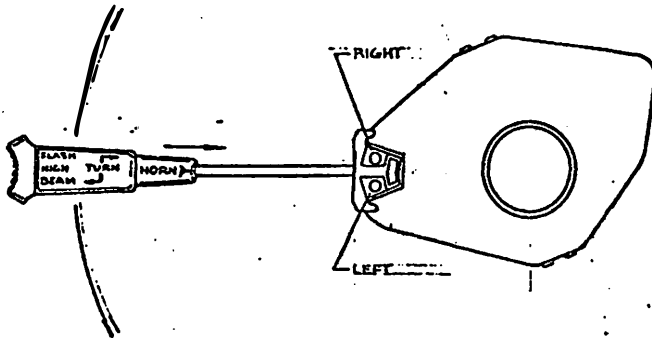
### 3. FOOT BRAKE

On some models, a switch will disconnect power to the accelerator pedal when the foot brake is applied. This prevents overloading the motor in the event both pedals are applied at the same time.

### 4. ACCELERATOR

The accelerator controls the amount of electrical power to the motor. To accelerate, simply depress the pedal. There are three electrical speeds in forward and two in reverse.

5. HORN/TURN SIGNAL INDICATOR/HIGH BEAM SWITCH (see diagram)



To operate the directional signals, push up for a right turn; pull down for a left turn. These directional signals are self-cancelling.

To operate the horn, push the control lever in towards the steering wheel.

Whether or not your headlights are on, you can flash your high beams by pulling the control lever towards you.

Push the control lever away from you to operate the high beams while the headlights are on.

**SEAT AND SHOULDER BELT INSTRUCTIONS**

Always fasten your seat and shoulder belts. Adjust the belt snugly around the hips not the waist, by pulling on the short belt extending from the buckle.

Adjust the shoulder strap by sliding the ring to the left. If extra shoulder belt length is needed, adjustment is made at the upper rear corners behind the driver and passenger.

To release the belts, push the button. When the belts are not in use, stow loose belts behind the seats.

**CAUTION:** Do not clean seat or shoulder belts with carbon tetrachloride or naphtha. Also, bleaching or redyeing the webbing is not recommended because of possible loss of webbing strength. To clean webbing, wash with any commercial soap or mild detergent.

## **DRIVING YOUR CITICAR - IMPORTANT**

It is hard to imagine an easier vehicle to drive than a Vanguard CitiCar. Before entering the car, unplug the charger and visually inspect the condition of the tires, windows, and mirrors.

Take your seat behind the wheel and fasten your seat belt. Adjust the inside and outside mirrors.

If the POWER light is not illuminated after turning the ignition, it probably means your parking brake is still on. After releasing the parking brake, turn the Forward/Reverse switch in the direction you wish to go. At this point, you are ready to go.

Your accelerator pedal sends a signal to the control system and regulates the flow of electricity from the batteries to the motor. As you depress the pedal in one of the three electrical speeds, your CitiCar will go faster; conversely, when you take your foot off the accelerator and coast to a stop, the motor is using no electricity at all. As you become familiar with the CitiCar, you will learn to minimize jerky accelerations caused by your foot rapidly passing back and forth between adjacent electrical speeds on the accelerator pedal. NOTE: Jack rabbit starts should also be avoided except when necessary.

In the same correct way you would operate a conventional car, always use the same foot to operate both the accelerator pedal and brake pedal. By applying both pedals at once - one with each foot - the electric motor could overheat and possibly be permanently damaged. Some CitiCars are equipped with a switch on the brake pedal to prevent this occurrence.

It is possible that ascending a long, steep hill could also cause the motor to overheat. Your CitiCar is equipped with a Hot Motor Lamp on the dash to warn you of this occurrence. If this should occur, stop the CitiCar and wait until the Hot Motor lamp goes out. Your motor cooling fan should prevent the motor from overheating.

When stopped on a hill, we urge you to minimize, as much as possible, any backward rolling before depressing the accelerator to go forward. If the CitiCar begins to roll backwards and you then attempt to accelerate forward, you may put too much strain on the motor. To eliminate this possible problem, you may find it easier to use your left foot on the brake in these situations and release the brake at exactly the same time you accelerate with your right foot.

Frequent and continuous starts and stops on a steep hill may result in blowing the 40 amp circuit breaker.

Another potential hazard that you could experience is driving the CitiCar when the battery charge is practically depleted. This could be harmful to the batteries as the lead plates tend to warp when too deeply discharged. Also, it could cause permanent damage to the vehicle's control system unless the vehicle is equipped with a separate 12 volt accessory batter. Therefore, when the needle on the fuel gauge reaches the red dot (when the car is being operated at top cruising speed), you should plan to put the CitiCar on recharge before driving too many more miles. EXCEPT FOR AN EMERGENCY, DO NOT DRIVE THE CITICAR AFTER THE NEEDLE DROPS BELOW THE "E" MARK AT TOP CRUISING SPEED.

For example, suppose you are driving your CitiCar and you are  $\frac{1}{2}$  mile away from your destination or the nearest electrical outlet, your top cruising speed slows down to 25 mph and the needle on the voltmeter approaches "E"; at this time, it is best to stop the car for 15-20 minutes and let the batteries re-energize. When you finally proceed further, drive only in the second electrical speed. In this speed, your motor is operating off of two 24-volt battery packs in parallel. In this configuration, you will be able to utilize what little energy remains from each of the batteries. RECHARGE YOUR CITICAR AS SOON AS POSSIBLE.

For normal driving, you will mostly have your foot fully depressed and the CitiCar will be in the third speed. It is here that your vehicle will operate most efficiently. Use first and second speed for slow accelerations in heavy stop-and-go traffic and when you wish to cruise at a lower speed. The recommended maximum speed is 45 mph, downhill. Also, when driving off the road, in sand or on grass, hold the accelerator pedal in second and, if possible, third speed. The same is true driving up long, steep hills. By driving in first speed, and sometimes second speed, under these conditions, you are likely to blow the CitiCar's 250-amp fuse located in the controller box behind the seat.

It is important for you to know that a slow first speed is attained with the use of a resistor/heating coil. This device dissipates much of the energy from the batteries before it is fed into the motor. Continual use of first speed will therefore significantly reduce vehicle range. It is suggested that you keep the vehicle in first speed as little as possible during operation. In other words, when accelerating, move into second speed as soon as possible; when decelerating, take your foot completely off the accelerator pedal, as opposed to letting your foot rest in the first speed position.

The CitiCar's simplicity and ease of handling will be appreciated in city driving. In changing directions - from forward to reverse and vice versa - be sure your CitiCar is completely stopped before accelerating in the opposite direction. This will help extend the life of your motor.

Before leaving your CitiCar, apply the parking brake firmly, (for best results, apply foot brake at the same time parking brake handle is pulled up), put the Forward/Reverse switch in neutral (middle position), and remove the ignition key. Refer to the appropriate section of your manual for correct charging instructions.

When other people who are not familiar with the use of the CitiCar drive the CitiCar, inform them that unlike a conventional car, CitiCar does not make an idling noise and therefore, there is no audible indication that the CitiCar is on. A simple instruction to someone driving CitiCar for the first time is "DO NOT STEP ON THE ACCELERATOR PEDAL UNTIL YOU ARE READY TO GO".

### SECTION III - MAINTENANCE

For your convenience, your vehicle has been designed to give long, reliable service with the simplest and least costly maintenance requirements possible.

**YOU PLAY AN IMPORTANT PART IN MAINTENANCE** - only you can make sure that your vehicle regularly receives the care it needs.

#### SCHEDULED MAINTENANCE SERVICES

The following schedule of periodic servicing of your CitiCar should be adhered to closely. Daily, weekly, and monthly maintenance can usually be performed by you, the owner. We strongly recommend that more detailed servicing, at six month intervals, be performed by an Authorized Sebring-Vanguard dealer. Also, please make every effort to return your CitiCar to the Selling Dealer after sixty days for various required maintenance checks, as your CitiCar's warranty should be protected. If you are located so far from a Vanguard dealer as to make service visits impractical, be sure to make arrangements for equivalent servicing. The last pages of your manual are set aside to maintain a record of all scheduled servicing. As the following services are not covered by the warranty, you will be charged for the labor, parts, and lubricants used.

#### DAILY

- \* Keep batteries in a constant state of charge.

#### WEEKLY OR BI-WEEKLY

- \* Check the water level of each battery. Refill as needed.

#### MONTHLY

- \* Clean dirt, if any, from batteries. If pad protectors should deteriorate, or if new batteries are required, pads should be replaced. Tighten all terminal connections. (DO NOT OVERTIGHTEN.)
- \* Hydrometer reading of batteries.
- \* Check tire pressure and look for excessive wear, cuts or other damage. Tighten wheel nuts.

#### TWO MONTHS AFTER PURCHASE

- \* Thorough vehicle check-up

#### SIX MONTHS AFTER PURCHASE AND EVERY SIX MONTHS THEREAFTER

- \* Lubricate chassis - two grease fittings in front suspension. Also, lubricate door hinges, parking brakes, cable guides, and linkage.

- \* Check level of brake fluid in master cylinder. If brake fluid must be added, use Type-3 Heavy Duty. Check the brake system for possible leakage or worn out pads. Also, check brake lines and hoses for cracks, chafing, deterioration and proper attachment. Replace or repair any defective parts immediately.
- \* Battery voltage check and battery rotation (if applicable) see Page .
- \* Check suspension and steering for damaged, loose or missing parts or parts showing visible signs of excessive wear or lack of lubrication. Defective parts should be replaced by a qualified mechanic without delay.
- \* Check the motor brushes.
- \* Check the manual steering gear for seal leakage around the pitman shaft and housing. If leakage is evident (heavy oil oozing out - not just oily film), it should be corrected immediately.
- \* Clean underbody of road accumulation.
- \* Clean front wheel bearings and make necessary adjustments.
- \* Check controller points.
- \* Check differential fluid level. Use 90 weight Hypoid gear oil. Fill to top. In cold weather lighter weight fluid may be used. It is not advisable to mix different weights. When changing types of oil, flush system. Use no lighter than 30 weight oil.

#### **EVERY TWELVE MONTHS**

- \* Rotate tires.
- \* Repack front wheel bearings.

#### **EQUIPMENT SAFETY CHECKS**

As an on-going check on the proper working order of the safety related features of your CitiCar, the following areas should be periodically looked at during normal use of the CitiCar. All appropriate replacements, repairs, adjustments, and cleaning of these features should be performed as soon as possible after problems are detected.

- A. Safety belts
- B. Windshield wiper & washer
- C. Steering
- D. Tires
- E. Glass areas
- F. Mirrors
- G. Fluid leaks
- H. Horn
- I. Parking brake
- J. Brakes
- K. Headlights & taillights
- L. All running lights
- M. Underbody
- N. Shock absorbers

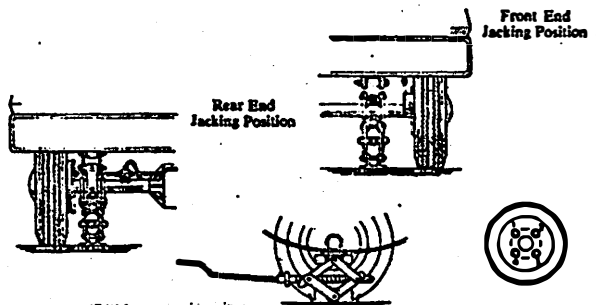


## CHANGING A WHEEL/JACKING

1. Set the parking brake and if near moving vehicles, turn on the hazard warning flashers. Block the wheel diagonally opposite the wheel to be changed.
2. Pry off hub cap and loosen nuts one half turn before using jack. Turn lug wrench counter clockwise to loosen.
3. Position jack as shown in the diagrams and raise wheel. Remove lug nuts and pull wheel off hub.
4. Position the spare wheel on the studs, turn the lug nuts on with the beveled edge towards the wheel. Partially tighten the lug nuts in the sequence shown in the diagram. Lower the car until the tire just touches the ground. Then, securely tighten lug nuts in the same sequence. Lower the car fully and replace hub cap. Stow the jack and remove the block from wheel.

**CAUTION:** The jack is a tire changing tool only. If it is necessary to work under the vehicle, please place supports under the vehicle structure.

### JACKING POSITIONS



### TIRE PRESSURE AND ROTATION

Tire rotation - Standard or radial:



### RECOMMENDED TIRE PRESSURE

The recommended tire pressure for standard and radial tires, front and rear, is 32 psi. A lower tire pressure will give a softer ride, but a lower speed and range; a higher tire pressure gives better speed and range.

## APPEARANCE CARE

Like the CitiCar as a whole, the body of the CitiCar, made of Cycolac® ABS and protected with an acrylic finish, was designed to be as maintenance free as possible.

In order to insure a lasting lustrous finish, gently use a mild household detergent and a soft damp cloth for cleaning. Do not use any abrasive cleaners or rubbing compounds. Also, CAUTION, do not use any cleaners or waxes with silicone.

The acrylic finish is a protective sunscreen applied over the Cycolac at the time the vehicles are produced. If the body should be scratched or chipped leaving the Cycolac unprotected, the damaged section should be touched up with an acrylic touch-up kit, available from your Authorized Sebring-Vanguard dealer.

All glass and clear plastic windows may be cleaned with a soft cloth and mild detergent.

**NOTE:** Because of the Cycolac ABS body, the CitiCar should not be used in cold climate areas where the temperature falls below minus 40 degrees, Fahrenheit.

Cycolac® is a registered Trademark of Borg-Warner Corporation.

**CITICAR SPECIFICATIONS**

Length.....	95"
Width.....	55"
Wheelbase.....	63"
Height.....	58"
Front Track.....	43"
Rear Track.....	44"
Clearance.....	4½"
Weight.....	1300 pounds
Rear Storage.....	12 cu.ft.
Tires.....	4.80x12 inch
Recommended Tire Pressure.....	32 psi
Speed.....	35 - 38 mph cruising
Maximum range.....	40 to 50 miles
Acceleration.....	0-20 5 secs
	0-30 15 secs
Turning Circle.....	22 ft
Controller.....	Vanguard multivoltage speed control
Motor.....	Series wound DC 48 V 6 HP rating
Power Source.....	eight 6 volt batteries (HD); 12 volt accessory battery
Differential.....	direct gear drive
Suspension.....	leaf springs, front and rear; four-wheel shock absorbers
Body.....	impact resistant Cycolac (ABS) rust and corrosion proof
Frame.....	rectangular aluminum chassis tubular aluminum body support
Brakes.....	four-wheel - hydraulic - parking
Gross Vehicle Weight Rating.....	1800 lbs.

**OWNER IDENTIFICATION**

Vehicle Identification No. \_\_\_\_\_ Color \_\_\_\_\_

Owner's Name \_\_\_\_\_

Street Address \_\_\_\_\_

City and State \_\_\_\_\_ Zip \_\_\_\_\_

Selling Dealer \_\_\_\_\_

In Service Date \_\_\_\_\_

**SCHEDULED SERVICE RECORDS**

The following spaces are provided to help you keep a record of the recommended scheduled servicing listed on pages 19 & 20 of this manual. Your Authorized Vanguard Dealer is most qualified to take care of your servicing needs. He stocks Vanguard service parts and is trained to provide the highest quality work available.

Adhere to the servicing schedule closely. The records you keep will remind you when another service visit is due. Also, when you are ready to resell your CitiCar as a used car, these records will document the care you have given your CitiCar over the years and thereby increase its resale value.

1) Two Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_

Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

2) Six Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_

Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

3) 12 Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

4) 18 Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

5) 24 Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

6) 30 Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

7) 36 Month Check      Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

8) 42 Month Check Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

9) 48 Month Check Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

10) 54 Month Check Date \_\_\_\_\_ Mileage \_\_\_\_\_  
Comments \_\_\_\_\_

Authorized Dealer \_\_\_\_\_

Authorized Service Signature \_\_\_\_\_

**VANGUARD NATIONAL SERVICE - DEALER ASSISTANCE**

Your Vanguard dealer is vitally interested in your complete satisfaction with the CitiCar you purchased from him. He is always glad to help you with your maintenance needs, repairs or damages, or any other automotive services your CitiCar may require.

To assist dealers in their continuing effort to serve you, Vanguard maintains a National Service Office, listed below. Should you have any questions about your car that your dealer cannot answer, the Vanguard National Service Office will be pleased to help you.

SEBRING-VANGUARD, INC.  
Customer Service Department  
Sebring Air Terminal  
PO Box 1479  
Sebring, Florida 33870  
Telephone: (813) 385-1561