VECTOR
The Freedom of POWER®

VEC095

ElectroMate™ 1000 WATT

Electronic Generator

110 Volt AC, 12 Volt DC Portable Power Supply

OWNER'S MANUAL & WARRANTY INFORMATION

THIS MANUAL CONTAINS IMPORTANT INFORMATION REGARDING SAFETY, OPERATION, MAINTENANCE AND STORAGE OF THIS PRODUCT. BEFORE USING, READ AND UNDERSTAND ALL CAUTIONS, WARNINGS, INSTRUCTIONS AND PRODUCT LABELS, PLUS YOUR VEHICLE'S BATTERY MANUFACTURER GUIDELINES. FAILURE TO DO SO COULD RESULT IN INJURY AND/OR PROPERTY DAMAGE.

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Important Safety Instructions

Read and understand all Warnings, Cautions and Notes before operating ElectroMate™. Warnings alert the user to hazardous conditions that can cause personal injury. Cautions alert the user to conditions that can cause property damage. Notes are important operational information.

Keep this User Manual for Future Use.

Jump-Start Warnings and Cautions:

1. There is risk of explosive gas being released when batteries are charged or discharged. Failure to follow instructions may cause property damage, explosion hazard and/or personal injury.
2. Make sure ElectroMate's Safety Switch is turned OFF before making any Jump-Start connections. This enables the audible detection alarm for incorrect polarity.
3. Do not smoke while jump-starting.
4. Only attempt to jump-start a vehicle or boat in a well-ventilated area.
5. This power system is to be used ONLY on vehicles or boats with 12 Volt DC battery systems.
6. Do not wear vinyl clothing when jump-starting a vehicle – friction can cause dangerous static electricity sparks.
7. Remove all metal jewelry – this can cause short circuits. Always use protective eyewear when jump-starting: contact with battery acid may cause blindness and/or severe burns.
8. Do not attempt to jump-start a frozen battery.
9. Keep out of reach of children.
10. Vehicles that have on-board computerized systems may be damaged if vehicle battery is jump-started. Before jump-starting this type of vehicle, read the vehicle's owner's manual to confirm that external-starting assistance is advised.
11. Excessive engine cranking can damage the vehicle's starter motor. Typical cranking is in three to five second bursts. If the engine fails to start after the recommended number of attempts, stop the jump-start procedure and look for other problems that may need to be corrected. If jump-start connections cause the polarity alarm to sound, DO NOT TURN ON THE SAFETY SWITCH. REVERSE THE CONNECTIONS FIRST. IF THE ALARM DOES NOT SOUND IT IS SAFE TO TURN ON THE SAFETY SWITCH.
12. If vehicle to be started has a Positive Grounded System (positive battery terminal is connected to chassis): Replace steps 5 and 6 of the jump-start procedure (below) with the following steps A and B, and then proceed to step 7 (on page 8).
    A. Connect negative (-) black clamp to vehicle battery's negative terminal.
    B. Connect positive (+) red clamp to vehicle chassis or a solid, non-moving, metal vehicle component or body part. DO NOT clamp directly to positive battery terminal or moving part.
13. Replace worn or defective parts immediately - contact Vector Technical Support Department at (954) 584-4446 or toll-free (866) 584-5504.

- **SKIN:** if battery acid comes in contact with skin, rinse immediately with water, then wash thoroughly with soap and water. If redness, pain, or irritation occurs, seek immediate medical attention.
- **EYES:** if battery acid comes in contact with eyes, flush eyes immediately for minimum of 15 minutes and seek immediate medical attention.

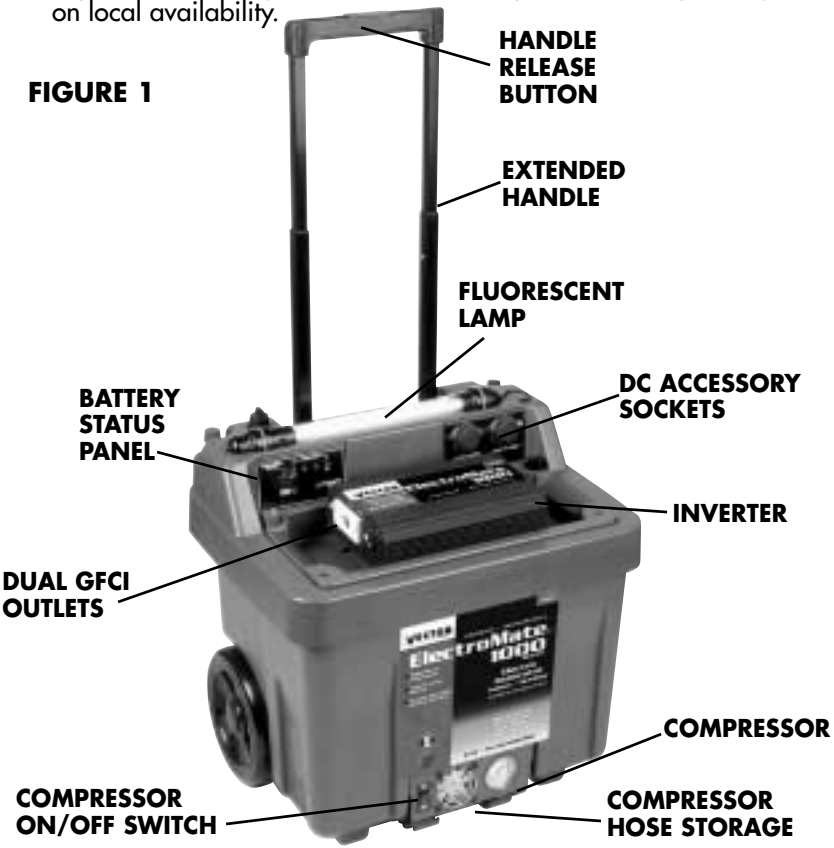
Contents

1. INTRODUCTION

Congratulations on selecting the Vector ElectroMate™ Model VEC095 Auxiliary AC/DC Power System. ElectroMate is an advanced power and jump-start system with unique features that set it far above the value and utility of ordinary jump-starters, portable tire compressors and auxiliary AC and DC Power Supplies. It can jump-start any vehicle with a standard 12 Volt DC electrical system: boat, truck, car, airplane, RV, personal watercraft, snowmobile, tractor, etc. It supplies AC for 110 Volt appliances to 1000 watts, and DC for 12 Volt appliances to 30 Amps. It can inflate any sized tire from small utility trailers to large truck tires. It can inflate most popular inflatable items such as volley balls, footballs, and beach accessories. This ElectroMate model is modular in design and can be considered as several interconnected components. The major components are: Battery, Power Inverter, Automatic Battery Charger, Tire Compressor and Jump-Start System. Competitive jump-start and AC and DC power systems are not modular and if there is a component failure, the entire unit must be shipped for service. Each ElectroMate component is described in detail in it's own section of this manual. (See Figure 1.)

NOTE: The ElectroMate is shipped without an internal battery. The user must obtain and install a 12 Volt, deep-cycle, sealed, lead-acid battery. This battery shape is "Group 27" and are available with capacities that range from 85 to 125 ampere hours, depending on local availability.

FIGURE 1



2 . GENERAL DESCRIPTION

This advanced system design is ideal for emergencies and can also enhance your fun by powering AC or DC appliances on the road, field location, in the garage and at the campsite. Please read this guide carefully before use to ensure best performance and avoid damage to the system or items that you are using it with. ElectroMate™ has several exclusive features that set it apart from other power centers.

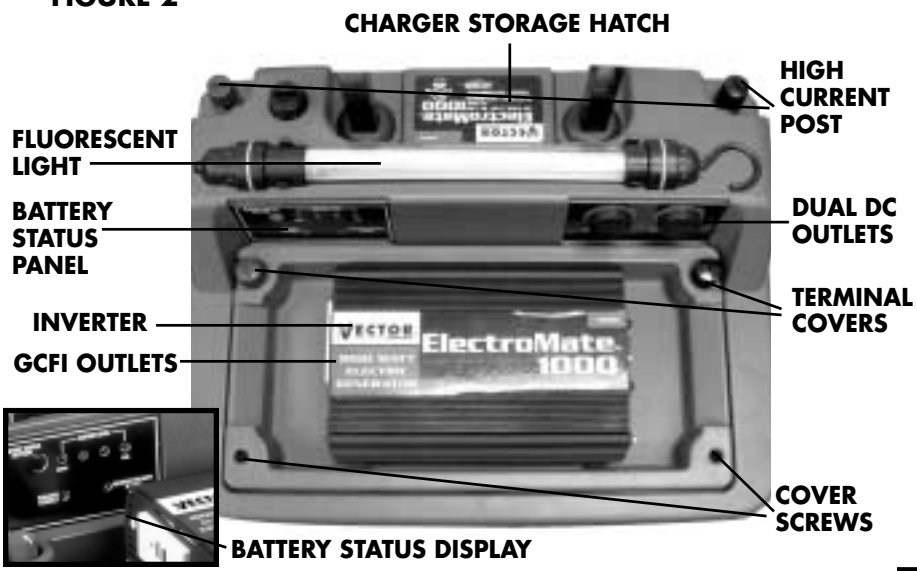
Compared to other cart type AC/DC power systems, ElectroMate provides for installation of the largest capacity sealed lead acid battery. This means longest run times and highest power output.

ElectroMate includes a 12 Volt DC to 110 Volt AC power inverter. This allows operation of most 110 Volt AC appliances to 1000 watts. The AC output is through a dual GFCI outlet. GFCI automatically disconnects the outlets when a ground fault is detected, ensuring user protection from electric shock because of faulty appliances or extension cords. The GFCI outlets can connect to any two- or three-pin North American standard appliance plugs.

ElectroMate is also ideal to power 12 Volt DC cordless, portable appliances with a combined current rating up to 30 amperes. Two 12 Volt (See Figure 2) covered appliance outlets (ports) are on the front left panel of ElectroMate. Covers must be open for port use; closed after use. An internal 30 amp automatic reset breaker protects the outlets from electrical shorts or overloads. For information about Vector appliances, contact Vector Customer Support toll-free (866) 584-5504 for the location of the nearest retailer.

A Battery Level Display on the left side of the front panel is an easy-to-read, series of LEDs (Light Emitting Diodes) that shows the level of charge in the battery (from Low to Full). The Charge Status Display activates whenever the Charge Status Push-button is pressed. (See figure 2.) Below the Battery Level Display are the Polarity indicators. These operate in conjunction with the Safety Switch.

FIGURE 2



Jump-Start Cables and Protection

ElectroMate is equipped with extra heavy duty 78 inch (2 meters) long, 9mm 2 diameter cables and heavy duty clamps. The cable storage area and cables are shown in Figure 3. To release clamps from unit squeeze handles.

FIGURE 3

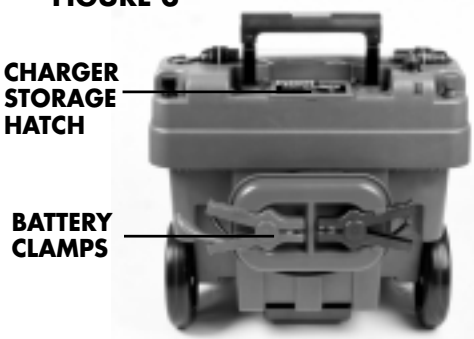
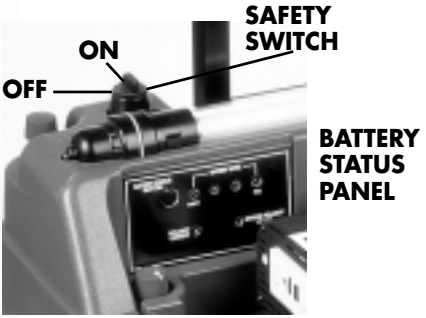


FIGURE 4



The heavy duty manual safety switch turns the jump-start cables on and off. With the safety switch turned OFF, three indicators are enabled. (See Figure 4)

1. An audible polarity alarm is enabled.
2. A Polarity Correct LED is enabled (Figure 2).
3. A Reverse Polarity Alarm LED is enabled (Figure 2).

The audible alarm sounds and the Reverse Polarity LED lights if the cables are connected to the wrong polarity. The polarity correct LED lights when the cables and clamps are properly connected.

WARNING: The safety switch is NEVER to be turned ON when the reverse polarity alarms indicate the polarity is incorrect. The cables position must be reversed and the correct polarity indicator must be lit before the safety switch is turned ON.

ElectroMate is supplied with a fully automatic 12 Volt 10 ampere battery charger (Vector Part No. VEC077EM). The charger is stored in the Charger Storage Hatch and must be removed from the Storage Hatch for use. The VEC077EM is a high frequency, three stage charger that can either be permanently connected to ElectroMate or connected to a battery clamp adapter cable for charging other 12 Volt batteries. A series of LED indicators on the charger enables the user to monitor the charging process. The charger output will only be turned on when the battery to be charged is connected with correct polarity.

Another feature is the high pressure, removable Air Compressor. This Compressor allows quick inflation of tires, sports balls and other inflatables. An easy to read analog pressure gauge allows accurate pressure readings, so there's no guesswork about critical tire pressures. Now there is no excuse for driving on under-or over-inflated tires risking safe operation. A Compressor On/Off rocker switch is located to the left of the gauge and the front of the compressor controls operation. The AIR COMPRESSOR HOSE AND TIRE CHUCK are stored under the compressor. A DC cable connects the compressor to any DC accessory socket for operation away from ElectroMate. (Figure 1)

A removable 8 watt Fluorescent Lamp operates from ElectroMate's self-contained battery. It can be powered from either an ElectroMate DC outlet or it can be moved and plugged into any 12 Volt power source. (Figure 1)

For excellent light distribution, the light can be hooked onto the cross member of the extended handle. The fluorescent light can be completely removed from the Main Unit's storage channel and powered from any DC accessory socket in vehicle, vessel or portable 12 volt DC supply. This feature is invaluable when it becomes necessary to locate battery terminals while preparing to jump-start a dead battery in the dark, changing a tire, etc.

The extendable handle allows for compact storage and moving. The handle has locking segments that are released by pushing the Handle Release Bar. This allows the raising or lowering of the handle.

ElectroMate's modular system increases flexibility of applications and eases troubleshooting and repair, should it become necessary.

2.1 Additional Key Features

- Removable Automatic Battery Charger provides full output even if input AC is low
- Battery compartment is vented to prevent pressurization in hot weather
- Requires no maintenance (other than recharging) for optimum operation
- Heavy duty, industrial grade copper clamps and 9mm diameter jumper cables with exclusive cable storage assembly
- Removable 300 PSI Air Compressor
- Removable 8 Watt Fluorescent Lamp
- Easy-to-read LED Battery Level Display - activated by pressing the Battery Status Button
- Polarity Correct LED indicates when it's safe to turn on the Safety Switch
- Audible alarm sounds when polarity is incorrect
- Visual LED Alarm indicates Reverse Polarity
- Adjustable locking handle allows safe movement and compact storage of the ElectroMate.
- A plastic dust cover protects ElectroMate from dust and dirt during storage

2.2 Applications:

1. Jump-start (using heavy duty battery cables and clamps) any vehicle with a standard 12 Volt DC battery system: boat, truck, car, airplane, RV, personal watercraft, snowmobile, tractor, etc.
2. Power/Recharge:
   Power AC Laptop computers and printers, color TVs, reading lamps, fans, and power hand tools, cellular phones, camcorders or operate virtually any appliance up to 1000 watts. Recharge batteries that have an appropriate charging adapter with a 110 Volt AC standard-type plug.
3. Operate (using 30 ampere rated 12 Volt accessory sockets): 12 Volt DC fans, fluorescent work lights, spotlights, TVs, portable radios, cassette or CD players and more. Can operate and quick-charge a cellular phone by using the phone's 12 Volt DC adapter cord.
4. Inflate truck, auto, motorcycle and trailer tires and small popular beach and camping accessories such as volley/soccer balls, saving valuable time and effort.
5. Illuminate areas: under the hood, inside tents, dark areas while changing tires, etc. The Fluorescent Lamp is removable from main unit and powered by the main unit or any 12 Volt source for light where you need it.

NOTE: Other appliances may also be used with the ElectroMate as long as they do not exceed the 30 ampere DC limit of the units' cigarette lighter type socket or the 1000 watt AC limit of the power inverter. Call Vector toll-free (866) 584-5504 for information on Vector AC and DC appliances.

READ INSTRUCTION MANUAL AND PRODUCT LABELING CAREFULLY, BEFORE USING THIS PRODUCT. FOLLOW RECOMMENDED WARNINGS, CAUTIONS, SAFETY PROCEDURES AND MANUFACTURER'S GUIDELINES FOR YOUR VEHICLE BATTERY.

IMPORTANT: This unit is delivered without a battery. The user must install a "Group 27" battery and assume that the battery is partially charged. You must then connect the battery charger and fully charge the battery before using the system. The battery must be a "Group 27", sealed lead acid battery with terminals on top; otherwise the battery may not fit in the battery compartment. These batteries have a range of 85 to 125 Ampere Hour capacity. See Appendix A for Battery Installation information.

3 . Using ElectroMate™ as a Jump-Start System

Read all Warnings, Cautions and Notes carefully before using this unit. Read and understand all WARNINGS and CAUTIONS printed at the front of this manual.

3.1 Jump-start Procedure

1. Make sure the ElectroMate Safety Switch is turned OFF, enabling the reverse polarity alarms and correct polarity indicator.
2. Turn Off ignition and all accessories (radio, A/C, lights, etc.). Place vehicle in "park" and set the emergency brake.
3. Observe jump-starting negative or positive ground system, as follows: Negative ground (negative battery terminal connected to chassis) - most common.
4. Carefully unwrap the cables from the storage area starting at clamps.
5. Connect positive (+) red clamp to vehicle's positive battery terminal.
6. Connect negative (-) black clamp to chassis or a solid, non-moving, metal vehicle component or body part - never clamp directly to negative battery terminal or moving part.
7. If polarity is correct the POLARITY CORRECT LED will light. If the polarity is incorrect, the audible REVERSE POLARITY ALARM will sound and the LED will light.

WARNING: IF REVERSE POLARITY ALARM SOUNDS, DO NOT TURN ON SAFETY SWITCH. REVERSE THE POSITION OF THE CLAMPS AND OBSERVE POLARITY LEDS. IF POLARITY CORRECT LED LIGHTS, THEN TURN ON THE SAFETY SWITCH.

8. Start vehicle (crank engine in 3 - 5 second bursts). If engine won't start, seek help and go to step 10.
9. Leave engine running.
10. Turn OFF the Safety switch.
11. Remove clamps (disconnect the negative (black) clamp first; followed by the positive (red) clamp) and store cables and clamps.
12. Recharge ElectroMate as soon as possible.

4 . USE AS A 12 VOLT DC PORTABLE POWER SUPPLY

WARNING: NEVER INSERT A CIGARETTE LIGHTER IN ELECTROMATE'S ACCESSORY SOCKET.

1. Lift up the cover of one of the 12 Volt DC Accessory Sockets.
2. Insert the 12 VOLT DC plug from the appliance into the Accessory Socket.
3. Switch on the appliance, as usual.
4. Periodically press the Battery Status Pushbutton to check battery level.
5. When the Charge Status goes to one LED (EMPTY), recharge the battery.

CAUTION: DO NOT USE ELECTROMATE TO OPERATE DC APPLIANCES THAT DRAW MORE THAN A TOTAL OF 30 AMPS. A self resetting breaker protects the outlets from overload and short circuits.

The DC accessory sockets can provide power even when the battery has little charge. To avoid running the battery completely flat, periodically check the status display. Operate the inverter without an AC load while using the DC accessory sockets to automatically be alerted to a low battery condition. The inverter's audible alarm will sound when the battery reaches 10.5 volts. Recharge the battery as soon as possible.

5 . POWER INVERTER

The Power Inverter is located above the Battery Compartment. The Power Inverter is an electronic device that converts low voltage DC (direct current) from the battery to GFCI dual outlets, 110 Volt 60 Hz AC (alternating current) household power. It's DC source is the installed 12 Volt battery. Safety features include an audible low battery alarm and automatic shutdown to prevent damage to your ElectroMate internal battery. (See Figure 5.)

FIGURE 5

5.1 Inverter Operation

NOTE: On the outlet end of the inverter are: the GFCI AC receptacles, the On/Off Switch, a green LED and a red LED. The green LED, when lit, indicates power is applied to the inverter and it is operating properly. The red LED, when lit, indicates that something caused the inverter to shut down. The green LED will not be lit under shutdown conditions. Inverter shutdown is caused by: under or over-voltage, overheat or overload. If the inverter shuts down, first check the ElectroMate's internal battery (use Battery Level Push-button and Display) to see if the battery is discharged, recharge the battery as soon as possible. If another condition caused the shutdown, investigate the appliance for excessive wattage or a short circuit in extension cord or appliance. If the inverter feels very warm let it cool before restarting it. Restart is accomplished by turning the Inverter Switch Off, then On. The inverter is equipped with GFCI outlets. These give protection from electric shocks caused by ground faults. The GFCI assembly has a TEST and a RESET button. When the inverter is operating, pressing the TEST button

simulates a short to ground and pops the breaker. This turns off the outlets. Pressing the RESET button allows the outlets to turn on and provide power.

Use with Appliances

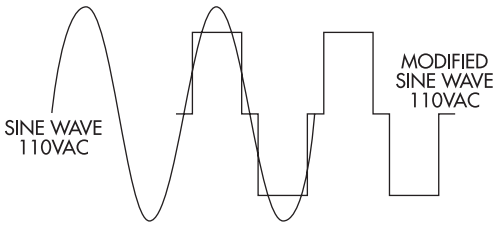
Make sure the AC appliance can operate on 110/120 volts 60 Hz AC modified sine wave (MSW) most appliances sold in the USA can. There are a few exceptions, noted later.

- Plug the appliance's two or three-pin North American standard plug into the GFCI AC receptacle on the inverter
- Turn On the inverter's power switch
- Turn On the appliance and operate it as usual
- After use, turn Off the power inverter's On/Off Switch

5.2 Principles of Operation

The Power Inverter converts power in two stages. The first stage is a DC-to-DC conversion process that raises the low voltage DC at the inverter input to 145 Volts DC. The second stage is the actual inverter stage that converts the high voltage DC into 110 Volts, 60 Hz AC, Modified Sine Wave (MSW). MSW is a waveform that has characteristics similar to the sine wave shape of utility power. This type of waveform is suitable for most AC loads, including linear and switching power supplies used in electronic equipment, transformers, and motors. The modified sine wave produced by the Power Inverter has an RMS (root mean square) voltage of 110, which is the same as standard household power. Most AC voltmeters (both digital and analog) are calibrated for RMS voltage under the assumption that the waveform measured will be a pure sine wave. These meters will NOT READ the RMS voltage of a modified sine wave correctly. They will read about 20 to 30 Volts low when measuring the output of the power inverter. For accurate measurement of the output voltage of this unit, use a voltmeter marked "TRUE RMS". Figure 6 compares a Modified Sine Wave with a True Sine Wave.

FIGURE 6



Power is provided to the inverter through two conductors that pass through the battery compartment cover. With a full charge on the battery (typically 85AH), the inverter will supply an AC load of 100 watts for approximately 8 hours. Lower wattage loads will operate longer, higher wattage loads will operate for a shorter time.

Example: If a load is rated at 100 watts AC, the power source must be able to deliver: 100 / 10 = 10 amperes

CAUTION: The inverter must be connected only to batteries with a nominal output voltage of 12 Volts. The unit will not operate from a 6 volt battery and will sustain permanent damage if connected to a 24 VOLT battery.

WARNING: NEVER TRY TO JUMPSTART A 6 OR 24 VOLT SYSTEM. DAMAGE TO THE INVERTER AND INTERNAL BATTERY CAN RESULT.

5.3 Operating Time

Vector recommends that the operator recharge the battery system as frequently as possible using the supplied VEC077EM Battery Charger. This will guard against any unexpected shutdown of the equipment and will ensure that there is always sufficient battery capacity. The inverter will sound it's alarm when DC voltage drops to 10.5 Volts.

5.4 Powering an AC Load

The Power Inverter is equipped with a dual GFCI receptacle and On/Off Switch. Plug the power cord from the equipment you wish to operate into the AC receptacle. The green LED will light to indicate that the unit is functioning. Make sure the wattage rating of your equipment is within 1000 watts. If so, turn on your equipment. If an audible alarm sounds, the DC supply voltage may be too low, and the battery needs to be recharged.

Do not connect to AC distribution wiring: the inverter is engineered to be connected directly to standard electrical and electronic equipment in the manner described above. Do not directy wire the power inverter to household or RV AC distribution wiring. You may use extension cords and outlet strips.

CAUTION: RECHARGEABLE APPLIANCES
Certain rechargeable devices are recharged by plugging them directly into an AC receptacle. When first using a rechargeable device, monitor its temperature for the initial ten minutes of use to determine whether it becomes warmer than usual. If excessive heat is generated, it is a good indication that the device should not be used with this inverter. This problem does not occur with the majority of battery-operated equipment. Most of these devices use a separate charger or transformer that is plugged into an AC receptacle. This inverter is easily capable of powering most chargers and transformers.

5.5 Placement of ElectroMate

For best operating results, keep in mind that the Inverter will generate heat – the larger the AC load the more heat generated. Therefore, the user should try to use ElectroMate in a cool dry place out of sunlight, if possible.

WARNING: NEVER OPERATE ELECTROMATE WITH THE PLASTIC DUST COVER ON. REMOVE THE DUST COVER BEFORE OPERATING ELECTROMATE.

WARNING: Inverters generate heat while operating. Power inverters should only be used in locations that meet the following criteria:

DRY - Do not allow water or other liquids to come into contact with the inverter.

COOL - Ambient air temperature should be between 30 degrees F (-1 degree C) non-condensing, and 100° F (38° C).

VENTILATED - Keep the area surrounding the inverter clear to ensure free air circulation around the unit. Do not place items on or over the inverter during operation. Therefore, remove the plastic dust cover before operating the system. The unit will shut down if the internal temperature gets too hot. Restart the unit after it cools.

SAFE - Do not use the inverter near flammable materials or in any location that may accumulate flammable fumes or gases. The switch and clamp connections can cause sparks.

5.6 Operating Tips

Rated versus Actual Current Draw of most equipment – electrical tools, appliances and audio/video equipment have labels that indicate the power consumption in amps or watts. Be sure that the power consumption of the item you wish to operate is rated at 1000 watts or less.(If the power consumption is rated in amps AC, simply multiply by the AC volts (110) to determine the wattage). The inverter has overload protection, so it is safe to try to operate equipment rated at 1000 watts or less. The inverter will shut down if it is overloaded and will restart once the overload is removed.

Resistive loads are the easiest for the inverter to run; however, larger resistive loads, such as electric stoves or heaters, require more wattage than the inverter can deliver. Inductive loads, such as TV's and stereos, require more start-up current to operate than do resistive loads of the same wattage rating. Induction motors, as well as some televisions, may require 2 to 6 times their wattage rating to start up. The most demanding in this category are those that start under load, such as compressors and pumps. Testing is the only definitive way to determine whether a specific load can be started and how long it can run. The unit will simply shut down if it is overloaded. To restart the unit after a shutdown due to overloading, momentarily turn off the power to the unit.

5.7 Troubleshooting the Inverter

The following assumes that the Main Unit battery has a charge and that there is no output from the 110 VAC receptacles. If the GFCI breaker is tripped, determine the cause of the short before RESETTING the GFCI and restarting the power inverter again.

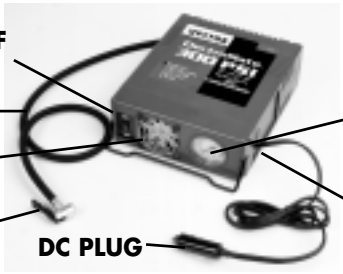
1. Check for proper operation by powering a 110 VAC appliance. If there is still a problem, call Vector Technical Support toll-free (866) 584-5504.

NOTE: If the internal battery is discharged, the Inverter may also be quickly checked and operated by connecting the Jumper cables to a known charged 12 Volt battery. Follow the jump-start procedures to ensure correct polarity of the connection. Recharge the battery as soon as possible.

6. Compressor/Tire Inflator

The compressor can operate long enough to fill many average sized tires before the ElectroMate internal battery must be recharged. Note that the compressor is removable, just pull on the bail handle and disconnect the compressor from ElectroMate. (See Fig 7.)

FIGURE 7



6.1 Compressor Use

IMPORTANT: Read Instructions carefully to avoid possible injury or property damage.

The Compressor may be used by removing the air hose from it's storage channel and fitting the tire chuck to the tire or inflatable. An On/Off switch located on the compressor controls the power. Refer to Figure 1 for locations of compressor switch and hose storage channel. When the compressor is removed from ElectroMate it is powered from an attached DC cable stored in a side compartment. This allows compressor use with other 12 Volt power supplies or it can be used with a DC accessory outlet on ElectroMate to increase the "reach" of the compressor hose.

6.2 Compressor Safety Information

The compressor is capable of inflating to 300 pounds per square inch (PSI) pressure. To avoid over-inflation, carefully follow instructions on articles to be inflated. Never exceed recommended pressures. Bursting articles can cause serious injury. Always check pressure with the pressure gauge. Never leave compressor unattended while in use. Allow unit to cool after 10 minutes of continuous operation.

6.3 Inflation of tire or products with a valve stem

1. Place connector (chuck) on valve stem.
2. Push connector toward valve stem and close thumb latch.
3. Make sure connector is pushed on to valve stem as far as possible before closing thumb latch.
4. Check pressure with the pressure gauge.
5. When desired pressure is reached, open thumb latch and remove connector from valve stem.
6. Turn OFF Compressor Power Switch.
7. Store Compressor, cord, hose and tire chuck in their respective storage locations.

IMPORTANT: Always leave the thumb latch in the open position when storing the hose unit.

6.4 Typical inflation times

The following are approximate pressure and inflation times for various items.

WARNING: Always follow tire manufacturers recommendations for pressure on item to be inflated.

VEHICLE AND TRAILER TIRES

TIRE SIZE	PRESSURE	TIME FROM "0" PRESSURE
155/80R 13"	26 PSI	2 min.
185/70R 14"	30 PSI	3 min.
235/75R 15"	30 PSI	4 min.
235/85R 16"	50 PSI	10 min.

BICYCLE TIRES

TIRE SIZE	PRESSURE	TIME FROM "0" PRESSURE
27 x 1" racing	10 PSI	20 sec.

6.5 Inflating Items Without a a Tire Stem

Three inflation adapters are stored in the compressor's DC Cord Storage Hatch. Select and connect the appropriate adapter to the compressor's tire chuck. Insert the adapter into the item to be inflated. Turn on the compressor using the On/Off Switch. Inflate the item to desired firmness. This can take a few seconds if the item is small.

WARNING: DO NOT OPERATE COMPRESSOR UNATTENDED.

When item is fully inflated, turn Off the Compressor Switch and disconnect the adapter from the item. Open the tire Chuck and replace the adapter in the DC Cord Storage Hatch.

7 . Fluorescent Lamp

The Fluorescent lamp is turned On by connecting it's DC plug to a 12 Volt DC power source. The lamp must be removed from it's storage location to gain access to the cord and DC plug. Most use will be with ElectroMate by means of an accessory outlet. Starting with a full charge, the ElectroMate's battery can power the lamp for up 100 hours. The lamp has a hook at one end and can be used to hang the lamp on the raised handle. Release the handle by pressing the release bar and raising the handle vertically. After use, disconnect the DC plug and neatly store the cord and plug in the well and replace the lamp cord and lamp in it's storage location. Note that the lamp only fits it's storage channel one way. Use the hook as a guide to the correct location.

NOTE: The lamp may be used with any 12 Volt DC source (vehicle accessory socket) that can supply at least one ampere. This allows great flexibility in positioning the lamp during tire inflation and during under-the-hood inspections. The lamp draws 8 watts so operation from an automobile battery is very efficient. With a full charge, a typical auto battery can power the lamp from 40 to 60 hours.

8 . Recharging ElectroMate

All batteries must be recharged as soon as possible after each use. If a battery is allowed to remain in a discharged state, battery life will be reduced.

Lead-acid batteries require maintenance to maintain a full charge and to ensure good battery life. All lead-acid batteries suffer from self-discharge over time and more rapidly when they are at higher temperatures. Therefore, these types of batteries need periodic charging to replace energy lost through self-discharge. When ElectroMate is not in use Vector recommends that the battery be recharged at least every 60 days.

NOTE: Recharging battery after each use will prolong battery life; frequent heavy discharges between recharges will reduce battery life. Overcharging will reduce battery life. The time required to fully recharge these batteries depends on the charge level of the battery after the use of DC appliances, Inverter and Compressor.

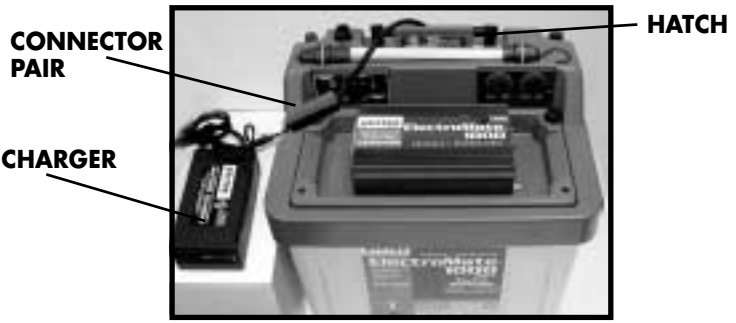
NOTE: Pressing the battery status push-button turns on the battery level display on ElectroMate. Check the battery charge level by pressing the Charge Status Button. The LED Charge Status display will indicate the level of charge of the battery.

8.1 AC Recharge

Recharge requires the use of the supplied VEC077EM Automatic Battery Charger. The charger must be powered from a 110 volt AC, 60 Hz North American standard household AC receptacle. Typical recharge time is ten hours.

CAUTION: NEVER OPERATE THE VEC077EM CHARGER FROM ELECTROMATE'S POWER INVERTER. THERE IS NO SUCH THING AS A PERPETUAL MOTION MACHINE. HEAT WILL BE GENERATED AND THERE WILL BE A NET LOSS OF BATTERY ENERGY. YOU CAN POWER MOST OTHER APPLIANCE CHARGERS FROM THE POWER INVERTER. The battery charger is stored in the Charger Storage Hatch. Always remove the charger for use. Connect the red and black DC cable connector to the mating connector stored inside the charger storage hatch. The charger must be operated on a flat stable surface with free air space around it. (See Figure 8.) Keep charger 18 inches from the floor.

FIGURE 8 – BATTERY CHARGER HOOKED TO ELECTROMATE



WARNING: NEVER OPERATE THE CHARGER INSIDE THE CHARGER STORAGE HATCH - IT WILL OVERHEAT AND SHUT DOWN. POSSIBLE DAMAGE TO THE CHARGER MAY RESULT.

As recharge progresses, the battery level LEDs will light one by one. Charge the ElectroMate until the Battery Status Display lights the FULL LED. Continue to recharge until the battery is fully charged. The charger is fully automatic and it can be left connected to ElectroMate indefinitely.

The charger can be connected to the supplied battery clamp adapter cable for directly charging a battery in a vehicle, boat or other engine starting battery. For complete operation of the VEC077EM charger away from ElectroMate, refer to the manual supplied with the charger. To ensure rapid charging of the battery, make sure that the inverter, compressor and lamp are turned off during recharging.

8.2 DC Recharge

During an emergency when AC is not available to power the VEC077EM Automatic Battery Charger, DC charging is an option. Recharging ElectroMate's internal battery from an external DC power source requires the use of the Jumper Cables. It is recommended that the engine be left running so the vehicle's battery is not discharged.

To check the battery status, press the Battery Status Display Push-button. If the Jump-Starter's battery is fully discharged, it is recommended that the host vehicle or boat's engine being used for recharging be left operating while the unit is being charged using the 12 Volt DC/DC method.

WARNING: DO NOT recharge main unit for more than 8 hours maximum using 12 Volt DC method. After charging, disconnect the cables and store them in the Cable Storage Area.

8.3 Simultaneous Recharge and Inverter Operation

The inverter can be operated to power up to 80 watts during battery recharge. This will slow recharge, but ElectroMate can be used as a UPS system.

9. Maintenance/Replacement Parts

For replacement parts, cables, etc, contact Vector Technical Support: toll-free (866) 584-5504. ElectroMate is modular in construction. If the charger, lamp, compressor or inverter require service, unit should be returned to Vector. Note that the inverter can be shipped back mounted to the battery compartment cover. Periodically, the cables and connectors should be inspected for damage, corrosion, dust and dirt. If surfaces are dirty, they can be wiped clean with a cloth moistened with water and a small drop of detergent. Contacts can be wiped clean with a dry cloth.

WARNINGS: There are no user serviceable parts inside. Do not operate unit if there is any evidence of damage. The product must be returned to Vector for testing and repair. Replace any damaged cables immediately before further use.

10. Battery Disposal

Contains a maintenance-free, sealed, non-spillable, lead acid battery, which must be disposed of properly. Recycling is required. Contact your local authority for information. Failure to comply with local, state and federal regulations can result in fines or imprisonment. Sealed lead-acid battery must be recycled or disposed of properly.

Battery Disposal Warnings:

1. Do not dispose of the battery in fire as this may result in an explosion.
2. Before disposing of the battery, protect exposed terminals with heavy-duty electrical tape to prevent shorting (shorting can result in injury or fire).
3. Do not expose battery to fire or intense heat as it may explode

11. Specifications:

Jump-Start Clamps	400 Amps - Heavy Duty Copper
Jumper Cables	9mm^2 Welding Cable
Battery	User-Supplied 12 Volt, Group 27 size. Sealed Lead-Acid
Flourescent Lamp	8 Watt Fluorescent Tube
Dual Accessory Socket Protection	30 Amp Self-Resetting Breaker
Power Inverter	1000 Watt,15 minutes, 800 watt continuous, 60 Hz, 110-120 VAC
Power Inverter Momentary Peak	2000 Watts
Inverter Waveform	Modified Sine Wave
Inverter DC Input Range	10.0 to 15.5 VDC
Inverter Low Battery Audible Alarm	10.6 VDC
Automatic Shutdown	Low Voltage, Overload, Over Temperature
Compressor	Max Pressure, 300 PSI
Pressure Gauge Type	Analog Dial
Air Delivery	9kg /cm
Operating temp	-20° C to +80° C
Motor current	9 Amps
Dimensions	20"H x 20"W x 18"D (50.8cm x 50.5cm x 45.72)
Weight	30 lbs without battery (11.2 Kg)

Appendix A – Battery Installation

In most cases, the seald lead-acid battery is installed by the user. The battery is easily installed using the provided hardware. The user will need a medium Phillips head screwdriver and a wrench to do the battery installation.

CAUTION: MAKE SURE THE RED (POSITIVE) CABLE CONNECTS TO THE POS (+) BATTERY TERMINAL AND THE BLACK (NEGATIVE) CABLE CONNECTS TO THE NEG (–) TERMINAL.

Reverse connections will cause damage and void the warranty.

NOTE: The inverter is attached to the battery compartment cover. The inverter is not separated from the cover during battery installation. The battery compartment cover is removed by unscrewing (counterclock-wise) two Phillips head screws located on the left and right forward corners of the cover. The two inverter terminal covers (red and black) are unsrcewed (counterclock-wise) and lifted off. (See Figures A1 and A2) Remove the lock washer on each terminal. The entire inverter and battery compartment cover are carefully lifted and placed on a flat stable surface. The battery compartment should contain the battery clamp adapter cable and the universal terminal adapter. Remove any items from the battery compartment. Lift the two cables out of the way so they are not down inside the battery compartment. Carefully lower the battery into the battery compartment. The terminals on the battery can be one of several types. The user should take the supplied universal connector and configure it to adapt the cable ends to the battery posts. Make sure all connections are mechanically tight. Replace the inverter and battery compartment cover. Replace the two Phillips screws and the lock washers and terminal covers. Make sure the red and black covers are on the correct terminals.

FIGURE A1

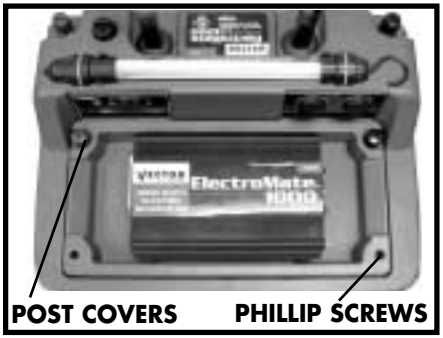
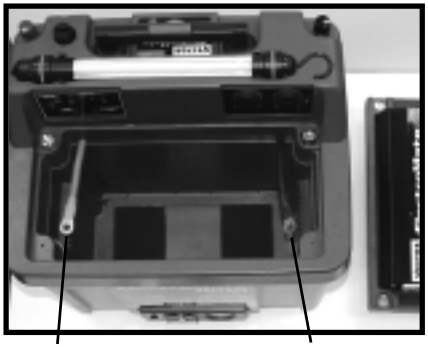


FIGURE A2



Appendix B

Extending Operating Time

Longer operating time can be realized by connecting ElectroMate to an external battery. The external battery will combine the Ampere Hour ratings of connected batteries. If your original configuration contains an 80 ampere hour rated battery, connecting another similar battery will provide 160 ampere hours of capacity. This at least doubles the run time of your unit before the batteries must be recharged. The user should be aware that with two similar batteries connected, (one inside and one external) the charger will take twice as long to recharge as with a single battery. There are two methods to connect to an external battery: One is to use the Jumper cables; the other way is to direct wire to the high current posts. Use the jumper cables for extending run times of lighter temporary loads. Use the direct wiring method for extended and more permanent higher power loads.

WARNINGS:

Never use the jumper cables to connect to a battery that is not stationary – vibration can shake loose the cable clamps. A moving vehicle or boat can shake loose connections. Never operate ElectroMate or an external battery without securing them first. Cover any battery terminals.

Vector Manufacturing has #2 AWG cable sets that will ease connection to an external battery. These are equipped with a fuse, fuse holder and ring terminals on the cable ends. The cables are easily connected between the external battery and the high current posts. The only cautions are that the high current post connection polarities must agree with the battery polarities. The red cable must connect the red cap post and Pos or (+) battery terminal. The black cable must connect the black cap post and Neg or (-) battery terminal. Make sure all connections are tight. If you require a cable set, contact Vector Technical Support at 866-584-5504.

Troubleshooting – Appendix C

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Inverter Alarm Sounds	Low battery voltage	Check Battery Level Display and recharge battery if low
Inverter will not operate No LEDs lit	Battery below 10.0 Volts	Charge battery
Inverter shuts down, Red LED lit	Overloaded inverter	Reduce AC load and reset inverter
Inverter shuts down, Red LED lit	Overheated Inverter	Let inverter cool 15 minutes, reduce AC load and reset
Inverter shuts down, Red LED lit	Bad connection on battery cover posts or battery terminal connections	Clean all contacts, tighten the post connectors and battery terminals
Inverter will not operate, No LEDs lit, battery is charged	Internal failure of inverter	Call Vector Technical Support- Return to Vector for service
No inverter output. Inverter Green LED lit, battery charged and no alarms sound.	GFCI outlet assemble is tripped	RESET GFCI assembly
Battery is charged but won't handle large loads.	Loose battery connections	Clean all contacts, tighten the post connectors and battery terminals
Fluorescent Lamp does not light	DC plug not fully inserted in DC socket.	Insert plug in socket and rotate to make good contact
Fluorescent Lamp does not light	Dead battery	Charge battery
Fluorescent Lamp does not light	Tube burned out or cracked	Call Vector Technical Support - Return to Vector for service
Compressor is laboring and slow	Low battery voltage	Check Battery Status Display and recharge battery
Compressor is laboring and slow (external DC Source)	Low battery, bad connections	Recharge battery, clean and tighten connections
Compressor does not operate but fan is turning	Compressor motor failure	Call Vector Technical Support - Return to Vector for service
Noise in Radio or TV	Appliance antenna too close close to inverter	Move antenna away from inverter use shielded cable

Contact Vector Technical Support toll free (866) 584-5504.

1 YEAR LIMITED WARRANTY REGISTRATION FORM

This Vector Manufacturing, Ltd. product is warranted, to the original purchaser only, to be free of defects in materials and workmanship for One Year from the date of purchase without additional charge. In no event will Vector Manufacturing, Ltd. be responsible for any amount of damages beyond the retail purchase price of the product. All Vector Manufacturing, Ltd. products must be registered within (10) days of purchase. To activate this warranty, mail the completed registration form along with a copy of the original sales receipt to the address shown below.

RETURN/REPAIR POLICY: Defective products, other than accessories, may be returned postage prepaid to Vector Manufacturing. Any defective product, other than accessories, that is returned to Vector Manufacturing within 30 days of the date of purchase will be replaced free of charge. If such a product is returned more than 30 days but less than one year from the purchase date, Vector Manufacturing will repair the unit or, at its option, replace it free of charge.

LIMITATIONS: This warranty does not cover accessories, bulbs, fuses and batteries, defects resulting from normal wear and tear (including chips, scratches, abrasions, discoloration or fading due to usage or exposure to sunlight), accidents, damage during shipping to our service facility, alterations, unauthorized use or repair, neglect, misuse, abuse, failure to follow instructions for care and maintenance, fire, flood and Acts of God.

If your problem is not covered by this warranty, call our Technical Support Department at (954) 584-4446 for general repair information and charges if applicable.

STATE LAW RIGHTS: This warranty gives you specific legal rights. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the exclusions or limitations stated herein may not apply. This warranty gives the purchaser specific legal rights; other rights, which vary from state to state, may apply.

TO REQUEST WARRANTY SERVICE FOR THIS PRODUCT: Contact Vector Manufacturing Technical Support by telephone, fax or mail. We suggest that you keep the original packaging in case you need to ship the unit. When returning a product, include your name, address, phone number, dated sales receipt (or copy) and a description of the reason for return and product serial number if available. After replacing the unit, we will attempt to return it to you within four weeks.

All Vector Manufacturing, Ltd. products must be registered within (10) days of purchase to activate this warranty. Mail the completed registration form, along with a copy of the original sales receipt to:

❒ Please activate my Limited Warranty for Model# ❑ VEC095. I have enclosed a copy of my original sales receipt.

Name _____ Street Address _____
City _____ State _____ Zip Code _____
Phone _____ Fax _____ E-mail _____
Store where purchased _____
UPC Number from package (12 digits) _____

All Vector Manufacturing, Ltd. products must be registered within (10) days of purchase to activate this warranty. Mail the completed registration form, along with a copy of the original sales receipt to:

ATTN.: CUSTOMER SERVICE / VECTOR MANUFACTURING, Ltd.
4140 SW 28th Way, Ft. Lauderdale, FL 33312

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