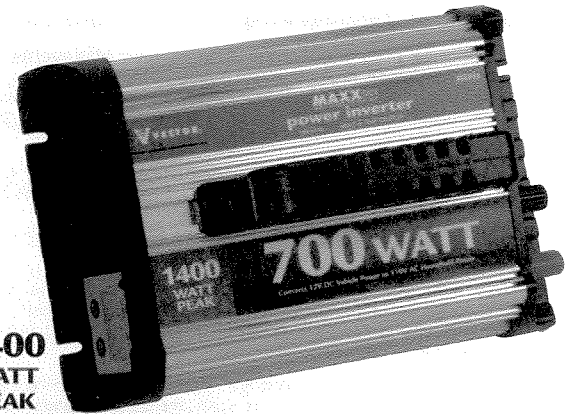


VECTOR

MAXXEST
SOFT START TECHNOLOGY

power inverter

Converts 12V DC Vehicle Power
to 110V AC Household Power
FOR CAR • TRUCK • BOAT • SUV • RV



**1400
WATT
PEAK**

OWNER'S MANUAL & WARRANTY INFORMATION

THIS MANUAL CONTAINS IMPORTANT INFORMATION REGARDING SAFETY, OPERATION, MAINTENANCE AND STORAGE OF THIS PRODUCT. BEFORE USE, 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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TEL 954-584-4446 • FAX 954-584-5556
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IMPORTANT SAFETY INSTRUCTIONS

To ensure reliable service, your power inverter must be installed and used properly. Please read the installation and operating instructions thoroughly prior to installation and use. Pay particular attention to the WARNING and CAUTION statements in this manual. The CAUTION statements advise against certain conditions and practices that may result in damage to your inverter. The WARNING statements identify conditions or practices that may result in personal injury.

Read All Instructions Before Using This Power Inverter!

WARNINGS:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, EXPLOSION OR INJURY:

- Do not connect to AC distribution wiring
- Remove appliance plug from outlet strip or turn off inverter before working on the appliance. Multiple outlet power strips with switches and circuit breakers only interrupt power to the "hot" receptacle terminals. The "neutral" terminals remain powered with respect to the "ground" terminals
- NOT approved for ignition protected areas. Do not make any electrical connections or disconnections in areas designated as IGNITION PROTECTED
- This is not a toy - keep away from children

CAUTIONS:

- Do not use with positive ground electrical systems (the majority of modern automobiles, RVs, trucks and boats are negative ground). Reverse polarity connection will result in a blown fuse and may cause permanent damage to the inverter and will void warranty
- This inverter will not operate high wattage appliances or equipment that produce heat, such as hair dryers, microwave ovens and toasters
- Grounding the Neutral will cause the inverter to shut down. Do not operate this inverter if it is wet. Do not install in engine compartment - install in a well ventilated area
- This inverter is not tested for use with medical devices

IMPORTANT CABLE INFORMATION

Substantial power loss and reduced battery operating time results from inverters installed with cables that are not able to supply full power. Symptoms of low battery power can result from cables that are either excessively long or an insufficient gauge. Marine installations are also subjected to vibration and stresses that exceed those of other mobile installations. Therefore, the installer/operator should be especially aware of the requirements to maintain secure, tight, water-resistant electrical connections and to provide for strain relief for DC cables and appliance wiring. Cable insulation must be the appropriate type for the environment.

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1. INTRODUCTION

Your new Vector MAXXSST700 inverter is one in a series of the most advanced DC to AC inverters available. With proper care and appropriate usage, it will give you years of dependable service in your car, truck, RV or boat.

The MAXXSST700 supplies 700 watts of continuous power, with a 1400 watt peak, in the form of three household-type outlets that are ready to deliver 110 volt AC power whenever and wherever you need it! The heavy-duty inverter has enough power to run most household or electronic appliances. It also comes equipped with battery clips to handle higher amperage/load applications, such as: power tools, stereo amplifiers, vacuums, etc. Added safety features include automatic shutdown and a low battery alarm to prevent damage to your battery.

This Power Inverter is configured with the latest Soft Start Technology (SST). Before introduction of Soft-Start, high startup currents from large inductive loads could shut down the inverter. Soft Start improves inverter operation. Three major features incorporated in SST include: First, gradual voltage ramp-up during inverter startup. This eliminates failed cold starts under load. Second, output that momentarily dips in voltage and quickly recovers to allow large motorized loads to start. This eliminates almost all shutdowns from momentary overloads. Last, the inverter automatically re-starts when an overload that causes inverter shutdown is removed. Previously, manual reset was required.

This power inverter also incorporates a new cooling technology that directly benefits our customers. The new design more efficiently cools the power transistors, and combined with Soft Start, dramatically increases reliability and the life of the product.

2. CONTROLS, INDICATORS AND CONNECTORS

Figure 1 details the front panel of the inverter. The digital display shows voltage and wattage. Power is supplied through two grounded standard North American outlets. Outlets accommodate either two or three pin AC plugs. An On/Off Switch turns the inverter circuitry On and Off. The switch is used to force reset of inverter circuits if it is switched Off, then On. A select switch allows you to select the display to be input voltage or output wattage. A beep will sound everytime when you push either the on/off button or select button.

FIGURE 1

1. ON/OFF SWITCH
2. VOLTS/WATTS SELECTOR
3. DIGITAL LED DISPLAY SHOWS INPUT VOLTAGE/OUTPUT WATTAGE/ FAULT PROTECTION CODE
4. TWO AC RECEPTACLES
5. HIGH SPEED COOLING FAN

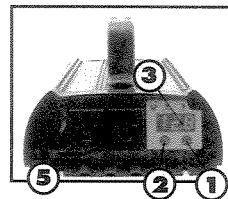
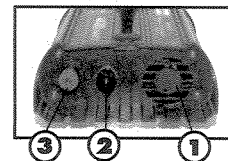


FIGURE 2

1. HIGH SPEED COOLING FAN
2. (-) DC POWER CONNECTION
3. (+) DC POWER CONNECTION



3. HOW YOUR VECTOR INVERTER WORKS

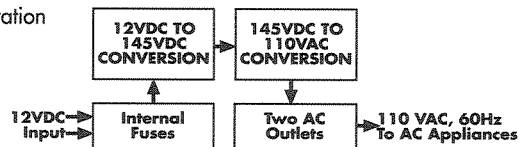
The inverter converts low voltage DC (direct current) from a battery or other power source to standard 110 volt AC (alternating current) household power.

3.1 PRINCIPLE OF OPERATION

The 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.

The DC-to-DC converter stage uses modern high frequency power conversion techniques that have replaced the bulky transformers found in less technologically-advanced models. The inverter stage uses advanced power MOSFET transistors in a full bridge configuration. This ensures excellent overload capability and the ability to operate reactive loads like small induction motors.

FIGURE 3
Principle of Operation

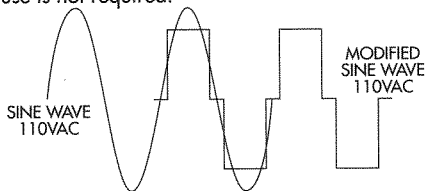


3.2 THE MAXXSST700 OUTPUT WAVEFORM

The AC output waveform of the MAXXSST700 is known as “modified sine wave”. It 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 MAXXSST700 inverter has an RMS (root mean square) voltage of 110 volts, which is the same as standard household power. Most AC voltmeters (both digital and analog) are sensitive to the average value of the waveform rather than the RMS value. They 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 inverter. For accurate measurement of the output voltage of this unit, use a true RMS reading voltmeter such as a Fluke 87, Fluke 8060A, Fluke 77/99 series, Beckman 4410, or Triplet 4200. The built-in digital LED display shows the AC voltage and watts, so external meters use is not required.

FIGURE 4



Modified Sine Wave and Sine Wave Comparison

4. INSTALLATION

4.1 POWER SOURCE REQUIREMENTS

The power source must provide between 10.5 and 14.7 volts DC and must be able to supply the necessary current to operate the load. The power source may be a battery or a well-regulated DC power supply. To obtain a rough estimate of the current (in amperes) the power source must deliver, simply divide the power consumption of the load (in watts AC) by 9.

Example: If a load is rated at 700 watts AC, the power source must be able to deliver: $700 \text{ divided by } 9 = 77.8 \text{ amperes}$

CAUTION: The MAXXSST700 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.

4.2 CONNECTION TO POWER SOURCE

The MAXXSST700 comes equipped with battery clip cables for connection to the power source:

CAUTION: Do not use with positive ground electrical systems (the majority of modern automobiles, RVs, and trucks are negative ground).

To operate at full 700 watts output, either use the battery clip cable (supplied) or directly wire to the power source with user supplied wire and fuse. Use wire #8AWG for lengths of four feet or less and #6 AWG for lengths to 10 feet.

CAUTION: Reverse polarity connection will result in a blown fuse and may cause permanent damage to the inverter.

Connecting to a Power Source Using Provided Cables:

Use the provided cables to connect the MAXXSST700 directly to the 12 volt power source using the following guidelines:

1. Check to be sure the MAXXSST700 power switch is turned off and that no flammable fumes are present.
2. Connect the black cable to the black post marked “(-)” on the back of the inverter. Connect the battery clip to the negative terminal of the battery.
3. Connect the red cable to the red post marked “(+)” on the back of the inverter. Connect the battery clip to the positive terminal of the battery.
4. Check to be sure that all connections between battery clips and terminals are secure.

Direct Hardwiring to Power Source:

Use #8 AWG wire if the inverter to power source connection is 4 feet or less. For longer cable lengths use #6 AWG wire for lengths to 10 feet. In either case, protect the positive (+) wire from shorts by installing a 150 Amp fuse or circuit breaker close to the DC power source (battery) terminal.

1. Check to be sure the inverter's power switch is turned off and that no flammable fumes are present.
2. Identify the positive (+) and negative (-) DC power source (battery) terminals.
3. Install a fuse holder or breaker close to the positive (+) terminal of the DC source (battery).
4. Connect a length of wire on one side of the fuse holder or circuit breaker. Connect the other end of the wire to the Positive (+) terminal of the inverter.
5. Connect a length of wire between the inverter's negative (-) terminal and the DC power source negative (-) terminal.
6. Connect a short length of wire to the other terminal of the fuse holder or circuit breaker. Mark it "POSITIVE" or "+".
7. Connect the free end of the fuse or breaker wire to the positive terminal of the DC power source (battery).
8. Insert an 150 Amp fuse in the fuse holder.
9. Test the inverter by turning it on and plugging in a 100 watt lamp or equipment.
10. If the inverter is not properly operating, then refer to the troubleshooting sections of this manual.

CAUTION: Loose connectors may cause overheated wires and melted insulation. Check to make sure you have not reversed the polarity. Damage due to reversed polarity is not covered by our warranty.

4.3 CONNECTION TO LOAD

The MAXXSST700 is equipped with dual standard North American AC power receptacles. Plug the cord from the equipment you wish to operate into the AC receptacle(s). Press the select button, check the output wattage on digital display. Make sure the combined load requirement of your equipment does not exceed 700 watts.

The MAXXSST700 is engineered to be connected directly to standard electrical and electronic equipment in the manner described above. Do not connect the Power Inverter to household or RV AC distribution wiring. Do not connect the Power Inverter to any AC load circuit in which the neutral conductor is connected to ground (earth) or to the negative of the DC (battery) source.

WARNING: Do not connect to AC distribution wiring!

CAUTION: RECHARGEABLE APPLIANCES

Certain rechargeable devices do not operate well from a modified sine wave inverter. They only operate properly from a standard household outlet which provides a pure sine wave. Therefore, Vector recommends that these types of devices be operated from a standard household outlet only, not from the 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. The MAXXSST700 is easily capable of running most chargers and transformers.

4.4 PLACEMENT OF THE INVERTER

For best operating results, the inverter should be placed on a flat and/or solid surface. A power cord measuring 3 feet (1.0 meter) has been provided for easy positioning of the inverter. The inverter should only be used in locations that meet the following criteria:

DRY - Do not allow water and/or other liquids to come into contact with the MAXXSST700 inverter.

COOL - Ambient air temperature should be between 30°F (-1°C) non-condensing, and 105°F (40°C). Do not place the inverter on or near a heating vent or any piece of equipment which is generating heat above room temperature. Keep the inverter away from direct sunlight, if at all possible.

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. A fan is helpful if the inverter is operating at maximum power outputs for extended periods of time. The unit will shut down if the internal temperature exceeds operating temperatures. The unit will restart after it cools.

SAFE - Do not use the inverter near flammable materials or in any locations that may accumulate flammable fumes or gases.

5. OPERATING TIPS

5.1 RATED VERSUS ACTUAL CURRENT DRAW OF EQUIPMENT

Most 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 700 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 700 watts or less. The inverter will shut down if it is overloaded. The overload must be removed before the inverter will restart. Resistive loads are the easiest for the MAXXSST700 to run. However, larger resistive loads, such as electric stoves or heaters, usually require more wattage than the MAXXSST700 can deliver on a continuous basis. Inductive loads, such as TV's and stereos, require more 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, remove the overload.

CAUTION: This inverter will not operate high wattage appliances or equipment that produce heat, such as hair dryers, microwave ovens, and toasters.

5.2 BATTERY OPERATING TIME

With a typical vehicle battery, a minimum operating time of 1 hour can be expected. In most instances, 1 to 2 hours of operating time is achievable. However, Vector recommends that the operator start the vehicle every half hour to recharge the battery system. This will guard against any unexpected shut-down of the equipment and will ensure that there is always sufficient battery capacity to start the vehicle's engine. The inverter will sound it's alarm when DC voltage drops to 10.5V.

The inverter may be used whether or not the vehicle's engine is running. However, the inverter may not operate while the engine is starting since the battery voltage can drop substantially during cranking. The inverter draws less than 0.3 ampere from the battery when it is not supplying power to a load and switch is in ON position. In most instances, the inverter can be left connected to the battery when not in use since it draws so little current. However, if the vehicle is to remain unused for several days, disconnect the inverter from the battery.

6. PROTECTIVE FEATURES OF THE INVERTER

Your MAXXSST700 monitors the following potentially hazardous conditions:

Low Battery Voltage - This condition is not harmful to the inverter but could damage the power source. An alarm will sound when input voltage drops to 11 Volts. The MAXXSST700 automatically shuts down when input voltage drops to 10.5 volts. When the condition is corrected, the unit may be restarted.

Over Voltage Protection - The MAXXSST700 will automatically shut down when the input voltage exceeds 14.7 volts DC the display will show fault code "HI".

AC Output Short Circuit Protection - Short circuit conditions at the AC output will result in an automatic inverter shutdown condition the display will show fault code "SC". Removing the short circuit condition and pushing the on/off again will allow the inverter to re-start. A reverse polarity condition at the DC input may cause internal fuses to open and may cause irreversible damage to the inverter. Take extra care to insure a proper polarity hook-up at the DC input.

Overload Protection - The inverter will automatically shut down when the continuous draw exceeds 700 watts the display will show fault code "OL".

Over Temperature Protection - If the temperature inside the MAXXSST700 is too high to operate, the unit will automatically shut down The display will show fault code "OH". Allow the unit to cool for at least 15 minutes before restarting after a heat-related shutdown. Unplug unit while cooling.

Low Battery Alarm - An alarm will sound when the voltage from the battery drops to 11 volts. This is an indication that the battery needs to be recharged. The user should stop operation of the electronic device at this time, since the inverter will shut down automatically shortly thereafter, when the battery voltage drops to 10.5 volts. Start your engine to recharge the battery.

7. COMMON PROBLEMS

“Buzzing” sound in audio systems:

Some inexpensive stereo systems and “boom boxes” emit a buzzing sound from their speakers when operated from the MAXXSST700 power inverter. This occurs because the power supply in the electronic device does not adequately filter the modified sine wave produced by the inverter. The only solution to this problem is to use a higher quality sound system that incorporates a higher quality power amplified supply.

Television Interference:

The Vector MAXXSST700 is shielded to minimize interference with TV signals. However, in some instances, some interference may still be visible, particularly with weak TV signals. Try the following corrective measures:

- Position the inverter as far as possible from the television, the antenna and the antenna cables. Use an extension cable, if necessary

- Adjust the orientation of the inverter, the antenna cables and the TV power cord to minimize interference
- Make sure that the antenna feeding the television provides an adequate (“snow free”) signal and that high quality, shielded antenna cable is used

8. FAULT PROTECTION CODE AND TROUBLESHOOTING GUIDE:

TABLE 1 - INVERTER POWER SWITCH TURNED ON

TROUBLE/INDICATION	POSSIBLE CAUSE	SUGGESTED REMEDY
LO	Low battery voltage input	Recharge or replace battery
HI	Overvoltage/ high voltage input	Battery voltage is too high. Remove all sources of charging and check to be sure that the proper type of battery is being used. This inverter will NOT operate with 24 volts.
OL	Overload	Excessive load at AC output. Reduce load to less than or equal to 700 watts.

TROUBLE/ INDICATION	POSSIBLE CAUSE	SUGGESTED REMEDY
OH	Overheat	Internal temperatures too high. Allow inverter to cool for at least 30 minutes. Ensure that fan is NOT blocked, and that there is proper ventilation.
SC	AC output short circuit	Turn the inverter off and remove the short circuit condition and re-start the inverter
Motorized power tool won't start	Excessive start-up load	If appliance does not start, then appliance is drawing excessive wattage and will not work with inverter
Motorized power tool does not operate at correct speed	Purely inductive load	Make the load not purely inductive. Operate an incandescent lamp at same time as motor
Television/Radio interference	Snow in picture, buzz in speaker	Keep inverter and antenna distant from each other. Use shielded antenna cable. Connect antenna to amplifier

9. REPLACEMENT

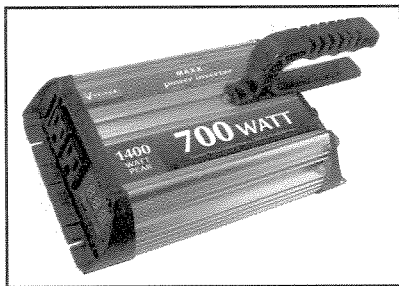
This power inverter is equipped with multiple internal fuses. Normally, these fuses will not blow unless there is a serious problem inside the unit. Internal fuses are replaceable, however, only electronically knowledgeable people should attempt fuse replacement. If the unit is damaged during fuse replacement, the warranty may be voided. Vector recommends contacting Technical Support for guidance. Based on experience, it is best to return the unit to Vector for repair. Vector Technical Support can be reached by calling 954-584-4446. You may also contact us by visiting our website@www.vectormfg.com.

10. SPECIFICATIONS

Output Connection	Dual North American Standard Receptacles
Output Voltage	110-120 VAC RMS 60 Hz
Output Waveform	Modified Sine Wave
Input Voltage Range	10.5 to 14.7 VDC
Low Voltage Shutdown	10.5 VDC
No Load Input Current	0.3 Amps
Input Fuses	Internal
Input Cables:	Battery Clip Cable
Additional Protection	Output short circuit, overload, over volt, over heat

11. PLACING HANDLE OVER INVERTER

Slide handle into position on the inverter and tighten.



WARRANTY REGISTRATION
VECTOR MANUFACTURING, Ltd.
4140 S.W. 28th Way, Ft. Lauderdale, Florida 33312
www.vectormfg.com
REV.121802

VECTOR.

TWO YEAR LIMITED WARRANTY REGISTRATION FORM

This limited warranty program is the only one that applies to this product, and it sets forth all the responsibilities of Vector Manufacturing, Ltd., regarding this product. There is no other warranty, other than those described herein.

This Vector Manufacturing, Ltd. product is warranted, to the original purchaser only, to be free of defects in materials and workmanship for two years from the date of purchase without additional charge. The warranty does not extend to subsequent purchasers or users. Vector Manufacturing, Ltd. will not be responsible for any amount of damage in excess of the retail purchase price of the product under any circumstances. Incidental and consequential damages are specifically excluded from coverage under this warranty.

This product is not intended for commercial use. This warranty does not apply to accessories or damage to units from misuse or incorrect installation. Misuse includes wiring or connecting to improper polarity power sources.

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 two years from the purchase date, Vector Manufacturing will repair the unit or, at its option, replace it free of charge. If the unit is repaired, new or reconditioned replacement parts may be used, at Vector Manufacturing's option. A unit may be replaced with a new or reconditioned unit of the same or comparable design. The repaired or replaced unit will then be warranted under the terms of the remainder of the warranty period. The customer is responsible for the shipping charges on all returned items after 30 days. During the warranty period, Vector Manufacturing, Ltd. will be responsible for the return shipping charges.

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 or toll free at 866-584-5504 for general repair information and charges if applicable. You may also contact us through our website at www.vectormfg.com.

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. After repairing or replacing the unit, we will make every effort to return it to you within four weeks.

WARRANTY ACTIVATION: Please complete Warranty Activation Card and mail to Vector Manufacturing. Enter "TVEC036" as Model. 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

PH: 954-584-4446 • TOLL FREE: 866-584-5504 • Fax: 954-584-5556.

You may also contact us at our web site www.vectormfg.com



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FT. LAUDERDALE, FL 33312 MADE IN CHINA

WARRANTY REGISTRATION CARD

Please activate my Limited Warranty for Model TVEC036
I have enclosed a copy of the original sales receipt.

Name

Street Address

City State Zip code

Phone Fax

E-mail

Item Purchased

Date of Purchase

Store Where Purchased

UPC Number from package (12 digits)

VECTOR MANUFACTURING, Ltd.
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