THOR Manufacturing
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RD021309

1000/2000/3000 WATT POWER INVERTER

CONVERSOR ELÉCTRICO DE 1000/2000/3000 VATIOS

CONVERTISSEUR C.A. DE 1000/2000/3000 WATTS

Catalog No./N.º de catálogo/Numéro de catalogue TH1000

Catalog No./N.º de catálogo/Numéro de catalogue TH2000

Catalog No./N.º de catálogo/Numéro de catalogue TH3000

SAVE THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE.
CONSERVE ESTE MANUAL PARA FUTURAS CONSULTAS.
GARDEZ CE MANUEL POUR LA FUTURE RÉFÉRENCE.

Printed in China / Impreso en China / Imprimé en Chine

⚠ GENERAL SAFETY WARNINGS AND INSTRUCTIONS

SAFETY GUIDELINES AND DEFINITIONS

⚠ **DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION: Used without the safety alert symbol indicates potentially hazardous situation which, if not avoided, may result in property damage.

RISK OF UNSAFE OPERATION. When using tools or equipment, basic safety precautions should always be followed to reduce the risk of personal injury. Improper operation, maintenance or modification of tools or equipment could result in serious injury and property damage. There are certain applications for which tools and equipment are designed. Manufacturer strongly recommends that this product NOT be modified and/or used for any application other than for which it was designed.

READ ALL INSTRUCTIONS

⚠ **WARNING:** Read all instructions before operating your inverter. Failure to follow all instructions may result in electric shock, fire and/or serious injury.

- **AVOID DANGEROUS ENVIRONMENTS.** Don't use inverters in damp or wet locations.
- **KEEP CHILDREN AWAY.** Keep away from children. This is not a toy!
- **STORE INDOORS.** When not in use, inverters should be stored indoors in dry, and high or locked-up places – out of reach of children.
- **DON'T ABUSE CORD.** Never carry inverter by cord or yank the cord to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- **DISCONNECT INVERTER.** Disconnect the inverter from the power supply when not in use.
- **PROPER COOLING** is essential when operating the inverter. Do not place it near a vehicle's heat vent or in direct sunlight.
- **USE OF ACCESSORIES AND ATTACHMENTS.** The use of any accessory or attachment not recommended by manufacturer for use with this inverter could be hazardous.
- **STAY ALERT.** Use common sense. Do not operate inverter when you are tired.
- **CHECK FOR DAMAGED PARTS.** Any part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual before further use. Do not use inverter if switch does not turn it on and off.
- **DO NOT OPERATE** inverter near flammable liquids or in gaseous or explosive atmospheres. Motors in tools or appliances used with the inverter may spark, and the sparks might ignite fumes.

IMPORTANT SAFETY INSTRUCTIONS

⚠ **WARNING:** This product or its power cord may contain lead, a chemical known to the State of California to cause cancer and birth defect or other reproductive harm. Wash hands after handling.

⚠ **WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK:**

- DO NOT connect to AC distribution wiring.
- DO NOT make any electrical connections or disconnections in areas designated as IGNITION PROTECTED. This inverter is NOT approved for ignition protected areas.
- NEVER immerse the inverter in water or any other liquid, or use when wet.
- DO NOT insert foreign objects into the inverter's outlets.

⚠ **WARNING: TO REDUCE THE RISK OF FIRE:**

- Do not operate near flammable materials, fumes or gases.
- DO NOT expose to extreme heat or flames.

⚠ **CAUTION: TO REDUCE THE RISK OF INJURY OR PROPERTY DAMAGE:**

- Remove appliance plug from outlet before working on the appliance.
- DO NOT attempt to connect or set up the inverter or its components while operating your vehicle. Not paying attention to the road may result in a serious accident.
- ALWAYS use the inverter where there is adequate ventilation. Do not block ventilation slots.
- ALWAYS turn the inverter off and disconnect it from the power source when not in use.
- 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.
- When using this unit in a vehicle, check the vehicle owner's manual for maximum power rating and recommended output. DO NOT install in engine compartment — install in a well ventilated area.

- DO NOT use with positive ground electrical systems.* Reverse polarity connection will result in a blown fuse and may cause permanent damage to the inverter and will void warranty.
  *The majority of modern automobiles, RVs and trucks are negative ground.
- Keep in mind that this inverter will not operate high wattage appliances or equipment that produce heat, such as hair dryers, microwave ovens and toasters.
- Do not open the inverter — there are no user-serviceable parts inside. Opening the inverter will void manufacturer's warranty.
- Do not use this inverter with medical devices. It is not tested for medical applications.
- Install and operate unit only as described in this Instruction Manual.
- Check inverter periodically for wear and tear. Return to manufacturer for replacement of worn or defective parts immediately.

Read And Understand This Instruction Manual Before Using This Inverter.

SAVE THESE INSTRUCTIONS

⚠ **WARNING: TO REDUCE THE RISK OF INJURY:** FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY BATTERY MANUFACTURER AND THE MANUFACTURER OF ANY EQUIPMENT YOU INTEND TO USE WITH THIS UNIT. REVIEW CAUTIONARY MARKINGS ON THESE PRODUCTS AND ON ENGINE.

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing this ***THOR Power Inverter.*** Please read this Instruction Manual carefully before use to ensure optimum performance and to avoid damage to this product.

This power inverter is configured to supply continuous power in the form of 120 volt AC outlets and a USB port to run or recharge most household or electronic appliances.

FEATURES

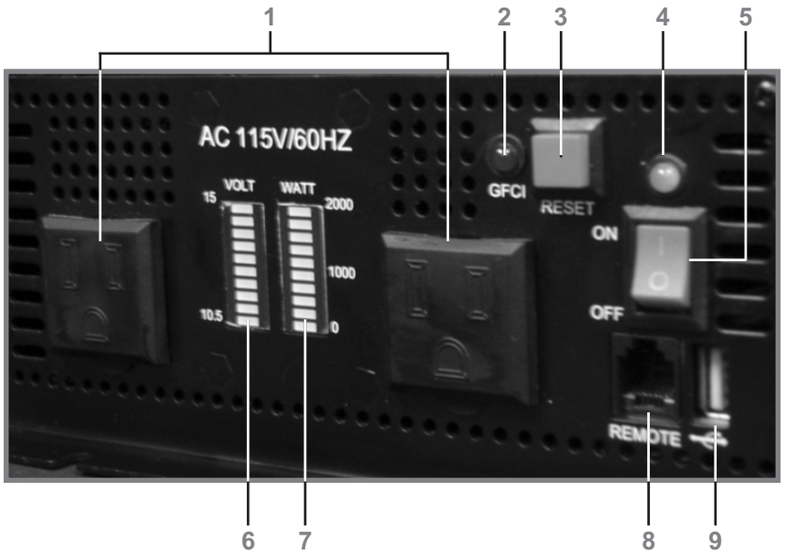
On the front panel are two LED indicators. The green LED indicates power and proper operation of the inverter; the red LED indicates inverter shutdown from over-load or over-temperature condition, or abnormal input voltages. The

ON/OFF Switch turns the inverter ON and OFF. The switch can also be used to force reset of inverter circuits by switching it OFF, then back ON again if the Reset Pushbutton does not reset the unit. All models also feature a port to attach a remote control (sold separately).

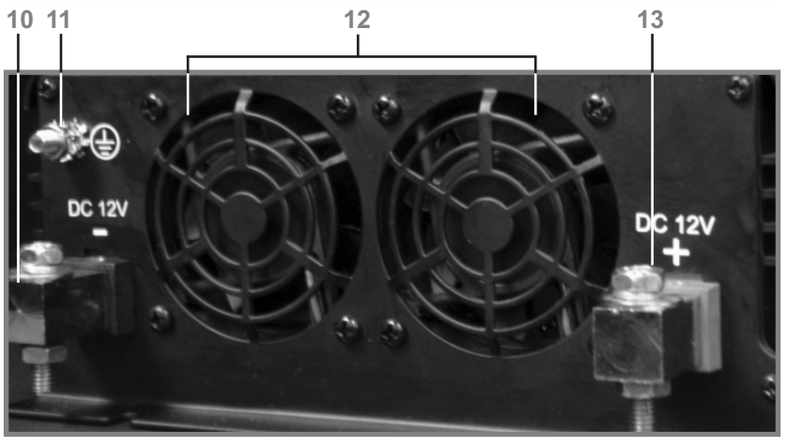
120 volt AC power is supplied through two North American three-prong type outlets. The outlets can accommodate either two- or three-pin AC plugs.

Controls and Functions

FRONT (TOP ILLUSTRATION) AND BACK (BOTTOM ILLUSTRATION) OF UNIT (ALL MODELS)



1. 115 volt AC three-prong outlets
2. GFCI Red Fault LED Indicator
3. GFCI Reset Pushbutton
4. Bicolor Power/Fault LED Indicator
5. ON/OFF Switch
6. DC Input Voltage Indicator
7. Output Power Indicator
8. Remote Control Port (Remote Control sold separately)
9. USB Charging Port
10. Negative (–) DC Power Connection
11. Grounding Post
12. High-Speed Cooling Fans
13. Positive (+) DC Power Connection



HOW THESE INVERTERS WORK

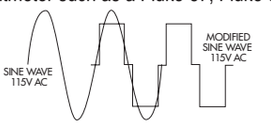
Your inverter converts low voltage DC (direct current) electricity from a battery to 115 volt AC (alternating current) household power in two stages. The first stage is a DC-to-DC conversion process that raises the low voltage DC at the inverter input to 145 volts DC. The second stage converts the high voltage DC into 115 volts, 60 Hz AC.

Power Inverter Output Waveform

The AC output waveform of your inverter is known as a modified sine wave. It is a stepped 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 small motors.

The modified sine wave produced by this inverter has an RMS (root mean square) voltage of 115 volts. 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 correctly read the RMS voltage of a modified sine wave. Non-TRUE RMS meters will read about 20 to 30 volts low when measuring the output of this inverter. For accurate measurement of the output voltage of this unit, use a TRUE RMS reading voltmeter such as a Fluke 87, Fluke 8080A, Beckman 4410 or Triplett 4200.

115 VOLT AC OUTPUT



APPLIANCE POWER CONSUMPTION

Most electrical tools, appliances and electronic equipment have labels that show the unit's power consumption in amps, watts or both. To avoid inverter shutdown and possible damage to the inverter or equipment, do not exceed the inverter's wattage rating. To obtain a rough estimate of the current (in amperes) the power source must deliver where the power consumption of the tool or device is given in watts AC, simply divide the power consumption of the load by 10. For example, if a load is rated at 200 watts AC, the power source must be able to deliver: 200 divided by 10 = 20 amperes.

Your inverter will operate most AC loads within its power rating. Some induction motors used in refrigerators, freezers, pumps and other motor-operated equipment, require very high surge currents to start them. Your inverter may not be able to start some of these motors even though their rated current draw is within specifications for this power inverter.

If a motor refuses to start, observe the battery voltage using a DC voltmeter while trying to start the motor. If the battery voltmeter drops below 11 volts while the inverter is attempting to start the motor, this may be why the motor won't start. Make sure the battery connections are tight and the power source battery (or batteries) is (are) fully-charged. If the connections are good and the power source is charged, but the voltage still drops below 11 volts, you may need to use a larger power source battery (or battery combination).

Your inverter has built-in overload protection so that if you do exceed the inverter's output capacity continuously, the unit will automatically shut down. Once the excess load is removed, the inverter can be restarted and resume normal operation.

Note: To restart the inverter, turn it off, and then on again. The ON/OFF Switch is located on the inverter's Front Panel (refer to the "Control and Functions" section of this Instruction Manual).

The inverter powers resistive loads the easiest; however, larger resistive loads, such as electric stoves or heaters, could draw more wattage than the inverter can deliver on a continuous basis.

⚠ CAUTIONS

Ensure that total continuous power consumption of all tools and appliances to be used simultaneously with your inverter does not exceed the inverter's continuous wattage rating. Also ensure that start-up wattage for inductive loads does not exceed peak watts for more than a second.

Appliances such as microwave ovens will normally draw more than their rated current and could possibly overload the inverter when operated simultaneously with other appliances. For example: A 600 watt microwave oven draws approximately 940 watts.

Rechargeable Devices

⚠ CAUTIONS

- Some rechargeable devices are designed to be charged by plugging them directly into an AC receptacle. These devices may damage the inverter or the charging circuit.
- When using a rechargeable device with your inverter, monitor its temperature for the initial ten minutes of use to determine if it produces excessive heat. If excessive heat is produced, the device should not be used with your inverter.
- This problem does not occur with most battery-operated appliances and tools. Most of these appliances use a separate charger or transformer that is plugged into an AC receptacle.
- Your inverter is capable of running most chargers and transformers.

POWER SOURCE AND PROTECTIVE FEATURES

Power Source Requirements

Your inverter will operate from input voltages between 11 and 15 volts DC. If the voltage drops below 10.5 volts, an audible low battery warning alarm will sound. If the input voltage drops below 10 volts DC, the inverter will shut down. This feature protects the battery from being completely discharged.

The inverter will also shut down if the input voltage exceeds 15 volts. This protects the inverter against excessive input voltage. Although the inverter has built-in protection against over voltage, it may still be damaged if the input voltage exceeds 15 volts.

Your inverter is engineered to be connected directly to standard electrical and electronic equipment in the manner described in the "Installation" section of this Instruction Manual. Do not connect the inverter to household or RV AC distribution wiring. Do not connect the inverter to any AC load circuit in which the neutral conductor is connected to ground (earth) or to the negative of the DC (battery) power source.

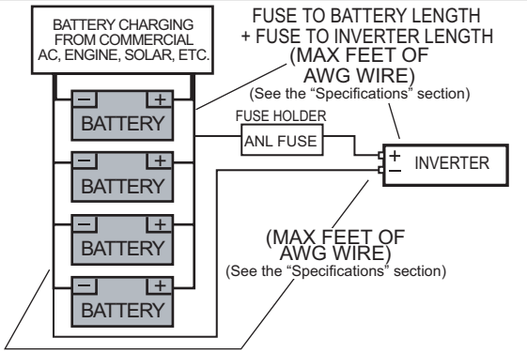
The inverter will operate most AC loads within its power rating. Some induction motors used in refrigerators, freezers, pumps and other motor-operated equipment, require very high surge currents to start them. The inverter may not be able to start some of these motors even though their rated current draw is within specifications for this power inverter. If a motor refuses to start, observe the battery voltage using a DC voltmeter while trying to start the motor. If the battery voltmeter drops below 11 volts while the inverter is attempting to start the motor, this may be why the motor won't start. Make sure the battery connections are tight and the battery (or batteries) is (are) fully-charged. If the connections are good and the battery is charged, but the voltage still drops below 11 volts, you may need to use a larger battery (or battery combination).

Inductive loads, such as TVs and stereos, require more current to operate than resistive loads of the same wattage rating. Induction motors, as well as some TVs, may require two to six times their rated wattage to start up. Because these inverters have a peak watt power rating, many such appliances and tools may be safely operated. The equipment that needs the highest starting wattage are pumps and compressors that start under load. This equipment can be safely tested. If an overload is detected, the inverter will simply shut down until the overload situation is corrected. Use the front panel Reset Pushbutton to reset the inverter.

⚠ CAUTIONS

- Exceeding recommended voltage limits will void manufacturer's warranty.
- NEVER try to use your inverter with any 12 volt DC power source that uses a positive ground. (Most vehicles and boats use negative ground systems.)
- The Power 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.
- Reverse polarity connection will result in a blown fuse and may cause permanent damage to the inverter.

Battery Configuration



Note: For heavy-duty use, manufacturer recommends an ANL fuse be added as close as possible to the power source (battery) positive terminal. The fuse amperage must be appropriate to allow simultaneous operation of all the AC appliances to be powered, with delay characteristics that allow for the momentary high start-up current requirements of inductive loads. Use the recommended fuse block (fuse holder) and fuse, or an electrical equivalent. See the "Specifications" section of this Instruction Manual to determine the proper fuse for your inverter. For full rated and motor start-up surge output, ensure that the installation is configured to handle the full load.

Determining Battery Size

To determine the minimum battery size you will need to operate appliances from your inverter, follow these steps:

1. Determine the wattage of each appliance and/or tool you will need to simultaneously operate from the inverter. To do this, read the labels on the equipment to be operated.
2. Estimate the number of hours the equipment will be in use between battery recharges.
3. Determine the total watt-hours of energy use, the total running time and the average power consumption.

Keep in mind that some appliances are not drawing the same power continuously. For example, a typical home-use coffee maker draws 500 watts during brew time (approx. 5 minutes), but maintains the pot temperature at only about 100 watts. Typical use of a microwave is only for a few minutes, sometimes at low power.

Protective Features

The inverter has electronic circuit protection against overload and short circuit conditions; and monitors for 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 below 10.5 volts and the inverter will automatically shut down when input voltage drops below 10.0 volts. This indicates that the DC (battery) power source needs to be charged or there is an excessive voltage drop between the battery power source and the inverter. When the condition is corrected, the inverter will automatically restart.

Over Voltage Protection — The inverter will automatically shutdown when input voltage exceeds 15 volts DC.

Overload Protection — The unit will automatically shut down when the continuous draw exceeds the inverter's wattage rating. Reduce the load and manually reset using the inverter's Reset Pushbutton.

Over Temperature Protection — If the temperature inside the inverter reaches 150°F, the unit will automatically shut down. Allow the inverter to cool for at least 15 minutes before restarting after a heat-related shutdown. Unplug the inverter from the power source and disconnect all appliances or tools from the inverter's outlets while cooling.

If the Fault LED lights when the (battery) power source is fully charged, follow the steps outlined in the "Troubleshooting" section of this Instruction Manual. The Fault LED will light if there is an excessive voltage drop between the (battery) power source and the inverter.

Note: Reverse polarity or short circuit condition may cause external or internal fuses to open and may cause irreversible damage to the Power Inverter. Take extra care to ensure a proper polarity hook-up.

⚠ CAUTION

- If the Reset Pushbutton does not reset the inverter, turn the ON/OFF switch off, then on again.
- If turning the ON/OFF Switch off, then on again does not reset the inverter, DO NOT ATTEMPT TO OPEN THE INVERTER. Opening the inverter for any reason will void the warranty. The unit must be returned to manufacturer for testing and repair by professional factory technicians.

INSTALLATION

Your inverter will provide you with continuous electrical power when powered by a reliable 12 volt DC source, such as a vehicle battery or a multiple battery configuration. This manual does not describe all of the possible configurations.

Operating Environment

For best operating results, your inverter should be placed on a flat surface, such as the ground, car floor or seat, or other solid surface to help diffuse the heat that is generated. Position the inverter as close to the DC power source as possible.

The inverter should only be operated in locations that meet the following criteria:

DRY – Do not allow water and/or other liquids to come into contact with the 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 that is generating heat above room temperature. Keep the inverter out of direct sunlight.

VENTILATED – Allow at least three inches of clearance from other objects to ensure free air circulation around the inverter. Never place items on or over the inverter during operation.

SAFE – Do not locate inverters in an area, room or compartment where explosives or flammable fumes might be present, such as engine rooms, engine compartments, and boats or small, unvented battery compartments.

Marine Applications

In all marine applications, DO NOT install the inverter below or near the waterline, and keep the inverter away from moisture and water.

Use ONLY non-corrosive marine fasteners and fittings for installation. Only connect the inverter's DC input to existing wiring (that has been approved for marine use) at the appropriate gauge, cable and length. The cable, fuse holder and fuse (not supplied) can be purchased at an electrical supply company. Call the manufacturer for additional installation information.

Quick Operational Test or Emergency Use

You will need:

- A heavy-duty jumper cable set of the specified AWG wire rating (refer to the "Specifications" section of this Instruction Manual)
- A fully-charged automobile battery
- A common slip joint plier for loosening and tightening terminal nuts

PROCEDURE

1. Unscrew nuts in input terminal block.
2. Identify the positive and negative terminals on the 12 volt DC battery (or other 12 volt DC power source) and identify the positive and negative terminals on the inverter.
3. Using a set of heavy-duty jumper cables, attach the red cable to the inverter's positive (+) terminal and the black cable to the inverter's negative (–) terminal.
4. Connect the clamps on the other ends of the jumper cables to the corresponding positive (+) and negative (–) terminals on the 12 volt DC vehicle battery (or other 12 volt DC power source). There may be some minor sparking.
5. Turn the inverter ON/OFF Switch on.
6. Plug in a lamp with a 100 watt light bulb and switch the lamp on. If the lamp works normally, the inverter is functioning properly and you can proceed to a permanent installation or continue to use the inverter with low wattage appliances. If the lamp does not light or does not work correctly:
   A. Check all connections and tighten any that may be loose.
   B. Ensure that the source battery has adequate charge.
   C. If steps A and B do not correct the problem, refer to the "Service Information" section of this Instruction Manual for assistance.

Permanent Installation (Cables and Fuse Not Supplied)

For permanent installation to heavy-duty battery power you will need:

- Two cables (as indicated in the "Specifications" section of this Instruction Manual)
- Terminals to fit cable ends and stud terminals to inverter
- Hardware and battery connector to connect cables to the battery bank
- A single length of AWG cable multi-stranded, flexible, insulated cable (as indicated in the "Specifications" section of this Instruction Manual) for chasis ground connection
- A holder and fuse (see the "Specifications" section of this Instruction Manual)
- Mounting screws, bolts and nuts for mounting the inverter and fuse holder
- A drill for mounting the inverter and fuse holder
- Lead-tin solder, flux, propane torch and an igniter for the torch
- Wire stripper/cutting tool

PRELIMINARY STEPS

The inverter has four slots in its mounting bracket that allow the unit to be fastened against a bulkhead, floor, wall or other flat surface. Ideally, the mounting surface should be cool to the touch. It is more efficient to use longer AC wiring than DC wiring, so install the inverter as close as possible to the 12 volt DC power source.

The inverter should be operated in horizontal position; if it is to be mounted on a wall, mount it horizontally so that indicators, switches, outlets and terminal blocks on the front panel are visible and accessible.

1. If inverter is to be installed in a vehicle, manufacturer recommends that it be shock mounted to either the floor (in a clear, safe area) or on a secure flat surface.
2. Locate a convenient place to mount the inverter and fuse holder.
3. Perform a test routing of the proposed cable length, but don't do any cutting at this time (refer to the diagram in the "Battery Configuration" section of this Instruction Manual).
4. Be sure that the positive (+) and negative (–) cables to the battery do not exceed six feet.
5. Using an appropriate AWG cable (refer to the "Specifications" section of this Instruction Manual), reposition the inverter and fuse holder if necessary.
6. After you have performed the above preliminary installation steps, proceed with the actual inverter installation.

Contact the manufacturer for any further installation information or questions.

PERMANENT INSTALLATION PROCEDURE

The cables between the power source and inverter should be set up as illustrated in the diagram in the "Battery Configuration" section of this Instruction Manual. Unscrew terminal nuts before beginning permanent installation. Proceed with DC cable and fuse installation as follows:

1. Ensure the inverter's ON/OFF Power Switch is in the off position.
2. Using tools and hardware, mount the inverter to a flat, stable surface.
3. Ensure that mounting hardware does not touch any fuse holder or fuse contacts. Select an appropriate fuse (refer to the "Specifications" section of this Instruction Manual) and ensure that the fuse is removed from its holder.
4. Select appropriate cable (refer to the "Specifications" section of this Instruction Manual). Measure the cable twice before cutting.
5. Cut one cable length to connect the negative (–) battery terminal to the inverter's negative terminal, leaving a little slack in the cable.
6. Cut another cable to connect the positive (+) battery terminal to one side of fuse holder, leaving a little slack.
7. Cut the final cable to connect the other side of fuse holder to the inverter's positive (+) terminal.
8. Strip the end insulation of all three cables to 1-inch (2.45 cm).
9. Sweat-solder end ends of all cables. For safety, do this in an open space because it may require the use of a propane torch.
10. Connect one end of the negative (–) cable to a ring terminal* going to the battery(ies).
11. Connect the short end of the positive (+) cable to a ring terminal* going to the battery(ies).

12. Crimp or clamp ring terminals of the negative (–) and positive (+) cables (going to the battery), but do not connect to the battery yet.
13. Connect the stripped, soldered (longer) end of the positive (+) cable to the red stud marked (+) on the inverter and tighten the retaining nut.
14. Connect the stripped, soldered end of the negative (–) cable to the black stud marked (–) on the inverter and tighten the retaining nut.
15. Connect the other (long) end of the (+) positive cable to one terminal of the heavy-duty fuse holder.
16. Connect the other conductor of the heavy-duty fuse holder to the (short) positive (+) battery terminal.
17. Connect the other end of the (–) negative cablewith the ring terminal to the negative (–) battery terminal.
18. Connect an appropriate insulated wire (refer to the "Specifications" section of this Instruction Manual) between the chassis grounding screw on the inverter's case and a solid electrical ground to minimize possible electrical noise in TV and radio reception. *Do not connect this wire to the negative DC input terminal.*
19. Ensure that all electrical connections have been tightened.
20. Insert the fuse into the fuse holder. There may be some sparking.
21. Ensure the 12 volt DC power source has an adequate charge.
22. Turn the inverter on and apply a test load to the 120 volt AC outlets.

* Ring terminals are not included and must be supplied by user.

If, after following all of the above steps, the inverter does not perform properly, the source voltage may be too low or the cables may be too long (or the gauge too light). Having checked and corrected these conditions, if necessary, refer to the "Service Information" section of this Instruction Manual for assistance if problems persist.

⚠ 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 manufacturer's warranty.

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.

OPERATING INSTRUCTIONS

⚠ CAUTION: Make sure the combined load requirement of your equipment does not exceed your inverter's maximum continuous power.

Operation of the 115 Volt AC Outlets

This unit features two 115 volt AC GFCI (ground fault circuit interrupter) protected outlets, that function in the same way as GFCI outlets you would typically use in your home. GFC outlets are intended to protect equipment by interrupting the circuit if current leakage exceeds 30 mA of current within 25 milliseconds.

1. Connect the inverter to a functioning 12 volt DC power source as described in this Instruction Manual. Make sure there is adequate space for proper ventilation of the inverter.
2. Press the Power Pushbutton to turn the unit ON.
3. The Power/Fault LED Indicator will light green, indicating a proper connection. If the Power/Fault LED Indicator lights red, indicating a fault condition exists, refer to the "Troubleshooting" section of this Instruction Manual.
4. Plug the (110/120 volt AC) appliance into one of the Inverter's three-prong AC outlets and operate normally.

Note: The Inverter will not operate appliances and equipment that generate heat, such as hair dryers, electric blankets, microwave ovens and toasters.

Remember to disconnect the inverter from any power source when not in use.

Operation of the USB Charging Port

1. Connect the inverter to a functioning 12 volt DC power source as described in this Instruction Manual. Make sure there is adequate space for proper ventilation of the inverter.
2. Press the Power Pushbutton to turn the unit ON.
3. The Power/Fault LED Indicator will light green, indicating a proper connection. If the the Power/Fault LED lights red, indicating a fault condition exists, refer to the "Troubleshooting" section of this Instruction Manual.
4. Plug the USB-powered device into the inverter's USB Charging Port and operate normally.

Note: This unit's USB Charging Port does not support data communication. It only provides 5 volts/300mA DC power to an external USB-powered device.

Remember to disconnect the inverter from any power source when not in use.

Reading the DC Input Voltage and Output Power Indicators (back of unit)

DC INPUT VOLTAGE INDICATOR			
	TH1000	**TH2000**	**TH3000**
7 green LEDs (0.5V per LED)	11.0-15.0V	11.0-15.0V	11.0-15.0V
1 orange LED	<11.0V	<11.0V	<11.0V
1 red LED (bottom)	<10.5V	<10.5V	<10.5V
1 red LED (top)	>15.0V	>15.0V	>15.0V

OUTPUT POWER INDICATOR			
	TH1000	**TH2000**	**TH3000**
8 green LEDs	Step 0W up to 800W	Step 0W up to 1600W	Step 0W up to 2400W
1 orange LED	Step 800W up to 900W	Step 1600W up to 1800W	Step 2400W up to 2700W
1 red LED	Output load >900W	Output load >1800W	Output load >2700W

Notes on Using the Remote Control (sold separately)

The manufacturer offers (as a separate item) a Remote Control specifically designed for this line of inverters. The inverter On/Off Switch must be in the off position when connecting the Remote Control to the unit or the Remote Control will not operate. Once the unit has been turned on using the Remote Control, inverter operation will continue to be controlled through the Remote Control. Turn the inverter off before disconnecting the Remote Control. For more information about attaching and using the Remote Control, please refer to the Remote Control Instruction Manual.

TROUBLESHOOTING GUIDE

Common Audio/Visual Problems

PROBLEM	SOLUTION
"Buzzing" sound in audio systems	Inexpensive stereo systems and "boom boxes" may emit a buzzing sound from their speakers when operated from your 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.
Television Interference	Your inverter is shielded to minimize interference with TV signals. However, in some instances, some interference may still occur, particularly where TV signals are weak. Try the following corrective measures:
	• Place the inverter as far as possible from the television. Use an extension cable, if necessary.
	• Readjust the orientation of the inverter, the antenna cables and the TV power cord to minimize interference.
	• Make sure the antenna feeding the television provides an adequate ("snow free") signal and that high quality, shielded antenna cable is used.
	• Do not use the inverter to operate high-power appliances or tools at the same time you are using it to operate the TV.
	• Make sure the inverter's case is properly grounded (refer to the "Permanent Installation Procedure" section of this Instruction Manual).

Fault Protection and Troubleshooting Guide

PROBLEM/ INDICATION	POSSIBLE CAUSE	SUGGESTED SOLUTION
No AC output — Power/Fault LED lit Red (Fault)	DC input is below 10.7 volts	Recharge or replace (battery) power source.
	Excessive appliance load	• Reduce load to inverter's maximum wattage output. • Reset inverter using the GFCI Reset pushbutton on the front of the unit.
	Inverter hot	Disconnect all appliances from inverter. Run inverter with no load for a few minutes. Reconnect load.
No AC output — Power/Fault LED not lit	Bad connection or wiring	Check all connections to the (battery) power source. Tighten if necessary.
Power/Fault LED lights red (Fault) while inverter is in use	Low (battery) power source voltage	Disconnect all appliances from inverter, then recharge or replace (battery) power source.
Power tool will not operate when plugged into inverter	Excessive start-up load	Power tool (or appliance) draws too much voltage; and cannot be used with your inverter.
Power tool will not operate at correct speed	Purely inductive load	**TH1000:** Power tool cannot be used with your inverter. **TH2000/TH3000:** Modify the load so that it isn't purely inductive; for example, operate an incandescent lamp plugged into the inverter's other outlet at the same time.

Resetting the Inverter

After over-voltage or thermal automatic shutdown, your inverter will reset automatically. To manually reset the inverter, use the GFCI Reset Pushbutton on the front of the unit. This pushbutton trips the circuit in exactly the same way the TEST pushbutton does on a typical GFCI outlet, allowing you to reset the unit without having to turn it off and back on again.

CARE AND MAINTENANCE

Storage

1. Ideal storage temperature range is 50-68°F (10-20°C).
2. Store and use the inverter in a cool, dry place with adequate ventilation.
3. Avoid locations that are exposed to heating units, radiators, direct sunlight or excessive humidity or dampness.

Fuse Replacement

Your 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 trained personnel should attempt fuse replacement.*** Refer to the "Service Information" section of this Instruction Manual.

Preventive Maintenance

Inverters require minimal maintenance. For optimum performance, the manufacturer recommends periodically performing the following preventive maintenance.

1. Turn the inverter off using the front panel On/Off Switch.
2. Check and tighten all electrical connections, including the ground.
3. Using a non-metallic vacuum cleaner hose, vacuum the air slots and fan area.
4. Clean the outside of the unit using a damp (not wet) cloth.
5. Wipe unit surfaces thoroughly with a dry cloth.
6. Resume operation.

Accessories

If you need assistance regarding accessories, please call: **1-866-955-THOR** or visit www.thorpowerproducts.com.

⚠ WARNING: The use of any accessory not recommended for use with this tool could be hazardous and will void manufacturer's warranty.

Service Information

To locate your nearest service location or for details on replacement parts, contact the manufacturer at **1-866-955-THOR**.

FULL TWO-YEAR HOME USE WARRANTY

THOR Manufacturing warrants this product for two years against any defects in material or workmanship. The defective product will be replaced or repaired at no charge in either of two ways.

The first option, which will provide an exchange only, is to return the product to the retailer from whom it was purchased (provided that the store is a participating retailer). Returns should be made within the time period after the sale of the retailer's usual policy for exchanges. Proof of purchase may be required. Please consult with the retailer for their specific policy regarding returns that are beyond the time set for exchanges.

WARRANTY ACTIVATION: Please complete the Warranty Activation Card and mail to THOR Manufacturing. Enter the model number and product type. All THOR Manufacturing products must be registered within 30 days of purchase to activate this warranty. Mail the completed registration form, along with a copy of the original sales receipt to: THOR Manufacturing, 7040 W. Palmetto Park Rd., Suite 4, Boca Raton, FL 33433.

This warranty does not apply to accessories. This warranty gives you specific legal rights and you may have other rights which vary from state to state or province to province. Should you have any questions, contact THOR Manufacturing at 1-866-955-THOR. This product is not intended for commercial use.

SPECIFICATIONS

	TH1000	TH2000	TH3000
Maximum continuous power	1000W	2000W	3000W
Surge capacity (peak power)	2000W	4000W	6000W
DC input static current (no load)	≤0.8 amp	≤1.0 amp	≤1.0 amp
DC input over load current	100-130 amps	200-250 amps	300-360 amps
AC output wave form	Modified Sine Wave (MSW)	Modified Sine Wave (MSW)	Modified Sine Wave (MSW)
Input voltage range	11-15V	11-15V	11-15V
High voltage shutdown	>15.0V	>15.0V	>15.0V
Low voltage alarm	10V-11V	10V-11V	10V-11V
Low voltage shutdown	9.5-10.5V	9.5-10.5V	9.5-10.5V
AC output voltage / frequency	115V ± 10% 60 ± 3 Hz	115V ± 10% 60 ± 3 Hz	115V ± 10% 60 ± 3 Hz
Overload power range	1000W +5%-+25%	2000W +5%-+25%	3000W +5%-+25%
USB port output	5V ± 5%, 500mA	5V ± 5%, 500mA	5V ± 5%, 500mA
Over voltage shutdown	>15.0V	>15.0V	>15.0V
Temperature protection	≤65°C (≤149°F)	≤65°C (≤149°F)	≤65°C (≤149°F)
Output connection	North American standard receptacles; USB charging port	North American standard receptacles; USB charging port	North American standard receptacles; USB charging port
Full load efficiency	≥80%	≥80%	≥80%
Fan run	≥45°C (≥113°F)	≥45°C (≥113°F)	≥45°C (≥113°F)
AC output short circuit protection	automatic shut down (no damage)	automatic shut down (no damage)	automatic shut down (no damage)
Fuse	35A*4PCS	35A*8PCS	40A×12PCS
Operating temperature	0-40°C (32-104°F)	10-20°C (50-68°F)	10-20°C (50-68°F)
Storage temperature	–10-50°C (14-122°F)	–10-50°C (14-122°F)	–10-50°C (14-122°F)
Operating relative humidity	10-90% RH	10-90% RH	10-90% RH
Storage relative humidity	10-95% RH	10-95% RH	10-95% RH

Permanent Installation Specifications (equipment not provided with unit)

	TH1000	TH2000	TH3000
ANL fuse rating for direct hardwire	200	500	500
Proper cable gauge (AWG) @ 6 ft.	#3	1/0	2/0
Proper cable gauge (AWG) @ 10 ft.*	#1	3/0	250 mcm

*For lengths greater than 10 feet, please contact manufacturer.