

CHICAGO POWER ELECTRIC® SYSTEMS

400W POWER INVERTER

Model 66814

SET UP AND OPERATING INSTRUCTIONS



This product will power up and charge:

Electronics, Appliances, Camcorders, TV's, DVD Players, Video Game Consoles and **CHARGE** Computers using your vehicle's battery power.

Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

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For technical questions or replacement parts, please call 1-800-444-3353.

Revised Manual 09I

SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.

GENERAL SAFETY WARNINGS



WARNING Read all safety warnings and instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

1. **Do not plug small appliances into the inverter to directly recharge their nickel-cadmium batteries.** Always use the recharger provided with the appliance.
2. **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
3. **Keep inverter away from any direct heat source or combustible material.**
4. **Do not use electrically powered products in the presence of flammable gases or liquids.**
5. **Wear ANSI approved safety goggles when replacing fuse.**
6. **Keep children away from this Inverter.** Do not allow them to play with or around this product.
7. **Do not use this item in rain, on a boat, or any other wet area.** Do not expose to direct sunlight or heat.
8. **Delicate device, handle with care.** Do not drop or strike this item.
9. **Replace the fuses in this item ONLY with 25 Amp fuses.** Replac-

- ing the fuses with higher rated fuses or another object is very dangerous and can result in fire, serious personal injury, or death.
10. **Before every use, check for any broken parts or mounting fixtures, and any other condition that may affect proper operation.** Any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function.
 11. **Do not disassemble. Aside from the fuse, this item has no replaceable parts.** If this product is damaged and/or does not function properly with an unbroken fuse, the entire unit must be replaced.
 12. **Use the right inverter for the job.** Do not attempt to force a small inverter or attachment to do the work of a larger industrial inverter. There are certain applications for which this inverter was designed. It will do the job better and more safely at the rate for which it was intended. Do not modify this inverter and do not use this inverter for a purpose for which it was not intended.
 13. **Do not overload this device.** This device is designed for loads up to 400 Watts at 120 Volts AC only. Check the wattage of any device before using this item to power it. Some rechargeable appliances may damage the Power Inverter or the appliance. When first using a rechargeable device, check its temperature for the first 10 minutes. If it becomes abnormally hot, do not use this device with the Inverter.
 14. **This device is designed for use in 12 VDC, negative ground systems only.**
 15. **Allow adequate ventilation. Do not cover this unit while it is plugged in.** This unit generates heat; without proper ventilation it may overheat, potentially causing a fire hazard.
 16. **Leave this device unplugged whenever the car's engine is turned off.** To help prevent draining and perhaps damaging the battery, only plug this device in while the car's engine is on.
 17. **Make sure that the unit to be powered is switched off before being plugged into this device.**
 18. **Do not use this device if under the influence of alcohol, drugs, or medication.** Read warning labels if taking prescription medicine to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not use this device.
 19. **Stay alert.** Watch what you are doing, use common sense. Do not use this device if you are tired.
 20. **An engine must never be run indoors, in a garage, or any other sealed structure. Carbon monoxide is produced by running engines and is DEADLY in a closed environment.** Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, or nausea. If you have these signs, get fresh air immediately.
 21. Store idle equipment. When not in use, this product must be stored in a dry location to inhibit rust.
 22. **WARNING:** This product contains or, when used, produces a chemi-

cal known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

23. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
24. **The warnings, precautions, and instructions discussed in this instruction sheet cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.**

SPECIFICATIONS

Continuous Power	400 Watts
Start up Peak	750 Watts
Input Voltage	12 Volts Nominal DC
Output Voltage	120V/60Hz
Fuse	25A x 2 (Blade Type)
Indicators	Green LED = power on Red LED = error (fault)
Switch	Button type. ON/OFF
Output Wave Form	Modified Sine Wave
Cables	5mm dia. Heavy duty input 23" length
Outlets	2 - 120V grounded AC 1 - USB 5V DC, 500mA
Features	- Overload Shutoff @ 450W - Low Voltage Shutoff @ 10.5VDC - Low Battery Alarm @ 10.8VDC - Over Voltage Shutoff @ 15.3VDC - Cooling Fan

This product will power up and charge:

Electronics, Appliances, Camcorders, TV's, DVD Players, Video Game Consoles and **CHARGE** Computers using your vehicle's battery power.

UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353 as soon as possible.

COMPONENTS AND CONTROLS

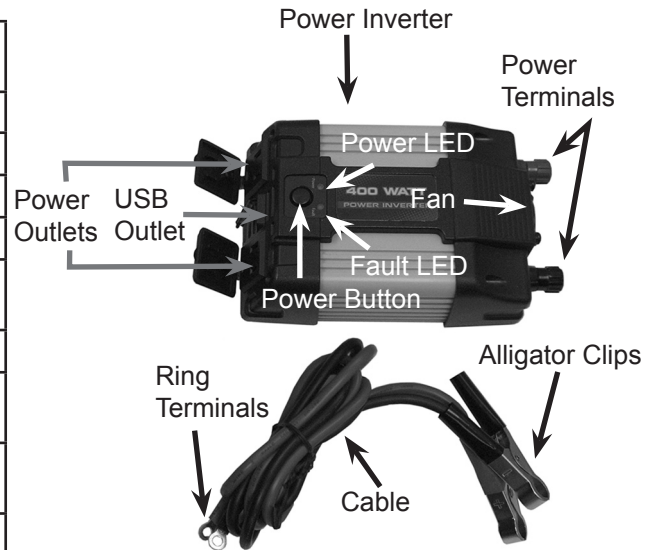


Figure 1

IMPORTANT SAFETY INFORMATION



Use caution when opening the plastic case; risk of electric shock.

Connect all wires securely and cover the connections with insulating rubber boots (not included). Store metal objects away from the inverter.

WARNING! Risk of Fire!

The negative battery terminal connection must be the **LAST** connection.

OPERATING INSTRUCTIONS



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this document including all text under subheadings therein before set up or use of this product.

SET UP AND USE PRECAUTIONS

1. Set up only according to these instructions. Improper set up can create hazards.
 2. Wear ANSI-approved safety goggles and heavy-duty work gloves during set up.
 3. Keep area clean and well lit.
 4. Do not set up when tired or when under the influence of alcohol, drugs or medication.
 5. This product is not a toy. Do not allow children to play with or near this item.
 6. Use as intended only.
 7. Inspect before every use; do not use if parts are loose or damaged.
 8. Maintain product labels and nameplates. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
- Caution:** This inverter must only be connected to batteries with a nominal output voltage of 12 volts. Lower voltage will not operate the inverter properly, and more voltage could damage the inverter or the device being powered. If more than one 12 volt battery is to be used, the batteries must be connected in a parallel circuit; batteries connected in a series circuit will produce too much voltage.
1. Place the Power Inverter on a flat surface. Make sure it has adequate ventilation and is not in direct sunlight. Locate the Inverter close enough to the car battery so that the Cables can easily reach between the Inverter and the car battery. Position the Inverter so that the Outlets are easily and safely accessible.
 2. To connect the Cable Ring Terminals to the (Positive) red and (Negative) black Power Terminals on the back of the Inverter:
 - a. Unthread the knobs covering the Power Terminals.
 - b. Slide the red Cable's Ring Terminal over the post of the red Power Terminal and the black Cable's Ring Terminal over the post of the black Power Terminal.
 - c. Replace the knobs and tighten securely.
 3. Apply the parking brake to the vehicle connected to the battery. Place the transmission in "Park" for an automatic transmission, or in "Neutral" for a manual transmission. Start the car engine.
 4. Attach the red Cable's Alligator Clip to the Positive (red) terminal on the battery, then attach the black Cable's Alligator Clip to a clean unpainted metal part of the chassis. (Note: If connecting to a battery not installed in a vehicle, connect to the Negative (black) terminal.)
 5. The red Fault LED will light up momentarily and the alarm will sound as the Inverter draws power. Then the alarm and red LED will turn off and

the green Power LED of the Inverter will light up.

Note: If the green LED fails to light and the alarm and red Fault LED lights stay on instead, check the Troubleshooting Tips section near the end of this manual to correct the issue before continuing.

6. To power each device or appliance:
 - a. With the device or appliance switched off, plug it into one of the Power Outlets or the USB Outlet on the Power Inverter.
 - b. Turn on the device and/or appliance.
7. After use, turn all connected devices or appliances off, unplug them, then turn off the car engine if it is running. Keep the inverter turned on and remove the alligator clips from the battery posts, removing the Negative (black) clip first, then the Positive (red) clip. The Inverter green LED will turn off, and the alarm and red LED light will turn on as the Inverter powers down. Turn off the Inverter power button.

Note: The total wattage of all items plugged into the Power Inverter must not use more than 400 watts during continuous operation, otherwise the Inverter may overload.

Note: If an alarm sound is heard, turn off the appliances and check the Troubleshooting Tips section near the end of this manual to correct the issue before continuing.

Caution: Some rechargeable appliances may damage the Power Inverter or the appliance. When first using a rechargeable device, check the inverter's temperature for the first 10 minutes. If it becomes abnormally

hot, do not use this device with the Inverter.

Caution: It is recommended that the vehicle be running when you first connect the Power Inverter. Thereafter the engine can be on or off. If you run the Power Inverter with the engine off it is recommended that you start and run the engine every hour for at least 10 minutes to recharge the battery. Doing this will help prevent any unexpected shutdown of the equipment. This will also help ensure that there will be enough battery power to start the vehicle. **Due to the risk of carbon monoxide inhalation, do not run the vehicle's engine within an enclosed area.**

You should not use your car battery to power the Inverter for extended periods of time with appliances requiring high continuous load levels. The battery may become drained to the point that it will not be able to start your car.

Note: Deep cycle (marine and RV) batteries can be charged more times than a car battery, and are a better choice for repeated use of the Power Inverter.

Do not discharge your car battery more than 10% of its total capacity, and deep cycle batteries more than a 50% discharged state.

MAINTENANCE

⚠ WARNING TO PREVENT SERIOUS INJURY FROM ELECTRICAL SHOCK: Avoid touching any interior parts of the Inverter except the fuses when replacing the fuses.

1. Keep this unit clean and dry. Disconnect the unit before cleaning. Clean only the outside of this unit with a soft, dry cloth; never clean this unit with water or harsh cleaners.

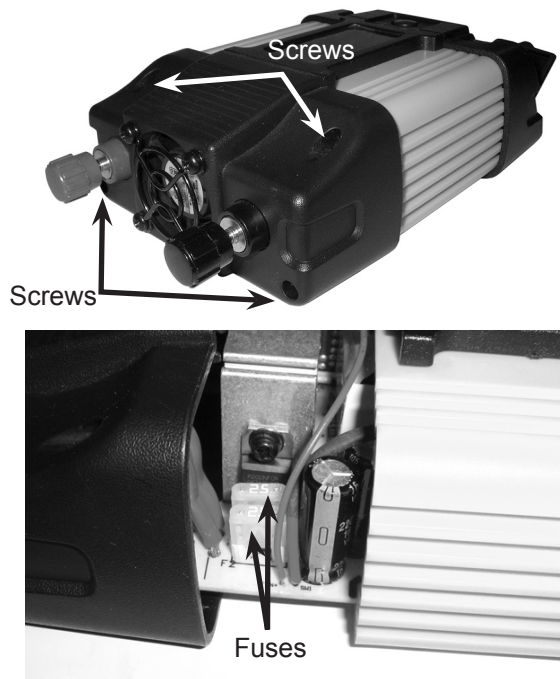


Figure 2

2. If the fuses need replacing:
 - a. Disconnect the Inverter and remove the Power Cables from Inverter.
 - b. Unthread the four screw from the Power Terminal Cover.
 - c. Slowly slide off The Cover far enough to reveal the Fuses - See Figure 2. CAUTION! Do not over extend the Cover.

- d. Replace the old fuses with another set of 25 Amp blade type fuses.
- e. Replace the Cover and secure the four screws. Do not overtighten.

Note: Aside from the fuses, this device does not contain any user replaceable parts. If it needs service, take it to a qualified technician.

TROUBLESHOOTING TIPS

1. If the alarm sounds, this means that the input voltage is at or below 10.8 V. The battery needs recharging. You should stop using the Power Inverter and recharge the battery. If this is not done, the Inverter will shut off automatically at 10.5V.
2. If you are unsure if the inverter will have the proper amount of current to run your devices, add up the total of the continuous wattage for the items. If this figure is under 400 then the Inverter will be able to run the items at the same time.
3. If your television will not start, it is important to keep in mind that some appliances (including many televisions) may require two to six times their wattage to start up.
4. If your audio system buzzes while using this inverter, it is because some sound systems can not filter out the modified sine wave produced by the inverter. Use a sound system that incorporates a higher quality power supply.
5. This inverter is made to minimize the interference with TV signals. However, especially with weak TV signals, some interference may still be visible. To correct this, place the inverter as far away as possible from the television antenna and it's cables. Next, adjust the orientation of the inverter to the antenna cables and TV power cord to minimize the interference. Also use a shielded antenna cable.
6. If the low battery alarm is on all the time, try these corrective measures: Recharge battery if in poor condition. Next, check the battery connection. You may need to clean the connectors.
7. If you are getting a low output voltage, try reducing the load to minimize watts. You may have overloaded the inverter. Reduce the number of watts you are powering. Also, keep input voltage above 11 volts to maintain a constant flow of power.
8. If you are not getting any power output, turn the power switch Off and On again, until the green power light comes on. Your devices may draw too much power to operate them. The inverter may be in thermal shutdown. Let it cool down and make sure there is adequate ventilation around the unit.

PLEASE READ THE FOLLOWING CAREFULLY

NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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Record Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.