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**▶ CAUTION**

*Certain rechargers for small nickel cadmium batteries can be damaged if connected to the unit. Two types of equipment are particularly prone to this problem:*

1. Small battery operated appliances that can be plugged directly into an AC receptacle for recharging, including flashlights, razors, and night lights.
2. Certain battery chargers for battery packs used in hand power tools, specifically those that have a WARNING label stating that dangerous voltages are present at the battery terminals.

Problems do not occur with the vast majority of battery operated tools, most of which use a separate charger or transformer that plugs into an AC receptacle and produces a low voltage output. If the label on your tool's AC adapter or charger states that it produces a low voltage AC or DC output (less than 30 volts) you can safely power the charger.

**Connecting to the Power Source**

Your unit comes with a 24 inch cable and cigarette lighter plug.

**STOP WARNING**

*Do not connect to the power source if flammable fumes are present. Explosion or fire may result.*

In order to check the performance of your unit before using it, please have the following on hand:

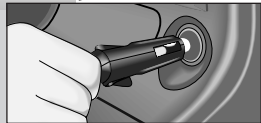
1. A 12 volt DC power source (such as a vehicle battery).
2. A test load such as a lamp or other small appliance that can be plugged into the AC receptacle on the inverter.

**Power Source**

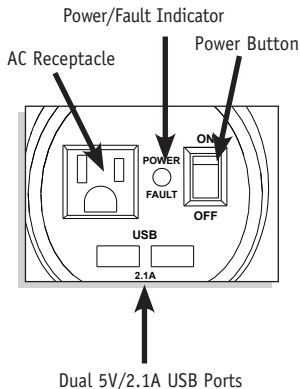
You will need an 10.4 to 11.4 volt DC power source capable of supplying enough current to run the test load. As a rough guide, divide the wattage of the test load by 10 to get the current (in amperes) that the power source must supply. A fully charged standard automotive battery will work fine.

Before Using Your Invertor  
(continued)

**To connect your invertor to the power source:**



1. If the power source is a DC power supply, switch it off.
2. Insert the cigarette lighter plug into your vehicle's cigarette lighter.
3. Press and release power button.
4. Connect load to AC outlet or USB port.



**▶ CAUTION**

*The invertor must only be connected to batteries with a nominal output voltage of 12 volts. It will not work with a 6 volt battery, and will be damaged if it is connected to a 16 volt or greater battery.*

The location where you should use your unit must be:

- **dry**—Do not use the unit where water can drip or splash on it.
- **cool**—Ambient air temperature should be between 30° and 105° F (0° and 40° C). The cooler the better.
- **ventilated**—Allow at least 1 inch (3 cm) of clearance around the unit for proper air flow. Make sure that ventilation openings on the ends of the unit are not obstructed.

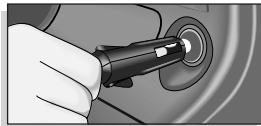
**▶ CAUTION**

*To prevent fire, do not cover or obstruct ventilation openings.*

## 4 CONTROLS & INDICATORS

### Powering Up

To apply power to the unit, simply plug in to 12 Volt DC source (cigarette lighter).

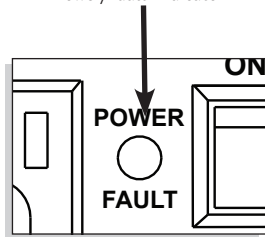


Cigarette Lighter Plug

### Power/Fault Indicator

The "fault" indicator of your unit will light whenever the unit detects excessively high or low input voltage, or unit begins to overheat.

Power/Fault Indicator



**CAUTION NOTE:** Make sure you unplug inverter from power source before you leave your vehicle.

## OPERATING LIMITS INPUT VOLTAGE/AUTO SHUTDOWN 5

### Power Output

#### AC Output:

Your unit will deliver 200 watts continuously. (**NOTE:** the wattage rating applies to resistive loads.)

#### USB Outputs:

5V/2.1A continuous output.

### Input Voltage

Your unit will operate from input voltage ranging from 10.4 to 14.4 volts. Optimum performance occurs when the voltage is between 12 and 14 volts.

The inverter will automatically shut down if the input voltage drops below  $10.0 \pm 0.3$  volts. This protects the battery from being over-discharged. The inverter will restart when the input voltage exceeds  $12.0 \pm 0.3$  volts.

The inverter will also shut down if the input voltage increases to  $15.5 \pm 0.5$  volts. This helps protect the unit from damage due to excessive input voltage. Although the inverter is protected in this way, it may still be damaged should the input voltage exceed 16 volts.

### Automatic Shutdown

The unit will automatically go into thermal shutdown if it becomes overheated due to excessive input voltage, poor circulation or high ambient temperature.

| Problem/<br>Symptom  | Possible<br>Causes | Solution   |
|--|--------------------|--|
| Low output voltage   | Overload           | Reduce the load.   |
| No output voltage  | Low input voltage  | Recharge battery.<br>Check connections and cable.  |
| No output voltage and "fault" indicator is lit                       | High input voltage | Make sure the inverter is connected to a 12 volt battery.<br><br>Check regulation of charging system.  |
| No output voltage when load is in excess of 200 watts or 1.3 amperes | Thermal shutdown   | Allow inverter to cool down<br>Improve ventilation—make sure ventilation openings in the inverter are not obstructed. Lower ambient temperature. |

## Maintaining Your Inverter

Your unit requires very little maintenance to keep it operating properly. The exterior of the unit should be cleaned periodically with a damp cloth to prevent accumulation of dust and dirt. Keep vents and fans free from dust or debris.

## Product Service and Support

For any questions about operating or installing this new Cobra product, PLEASE CONTACT COBRA FIRST...do not return this product to the retail store. The contact information for Cobra will vary depending on the country in which you purchased and utilize the product. For the latest contact information, please go to [www.cobra.com/support](http://www.cobra.com/support)

For products purchased in the U.S.A. you may also call 1-800-262-7212 (1-800-COBRA-12).

For Products Purchased in the U.S.A., if your product should require factory service, please go to [www.cobra.com/support](http://www.cobra.com/support) and follow the instructions for returning your product to the Cobra Factory Service Department for service.

**WARNING:** This product contains lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**

## 7 MAINTENANCE & SERVICE

You can receive technical assistance with your unit through one of our customer support services:

- **Automated Help Desk** is available 24 hours a day, 7 days a week at 773-889-3087.
- **Customer Service Operators** are available at 773-889-3087 Monday - Friday, 8:00 a.m. to 5:30 p.m. Central Time.
- **Questions can be faxed** to 773-622-2269.
- **Automated Technical Assistance** is available 24 hrs., 7 days a week via e-mail at: [productinfo@cobra.com](mailto:productinfo@cobra.com).
- **On-line answers** to frequently asked questions can be found at: [www.cobra.com](http://www.cobra.com)

## POWER CONSUMPTION 8

For each piece of equipment you will be powering with your unit, you must determine the battery's capacity (how long the battery can deliver a specific amount of current). For example, automotive batteries usually provide 25 amperes of current. A battery with a reserve capacity of 180 minutes can deliver 25 amperes for 180 minutes before it is completely discharged.

Calculate the total watt-hours of energy consumption (power X operating time), then divide the watt-hours by 10 to determine how many 12 volt ampere hours will be consumed.

## 9

**SPECIFICATIONS**

| Specifications                                   |                            |
|--|----------------------------|
| 1. Continuous output power                       | 200w                       |
| 2. Surge rating (0.1second)                      | 400w                       |
| 3. Peak efficiency (12V—1/2 load)                | 90%                        |
| 4. Efficiency (full load, 12V)                   | >78%                       |
| 5. No load current draw                          | < 0.45 A (12.6V)           |
| 6. Output waveform (resistive load)              | Perfect modified sine wave |
| 7. Output frequency                              | 60Hz $\pm$ 2Hz             |
| 8. Output voltage                                | 115V +/- 10%               |
| 9. USB output                                    | 5V/2.1A                    |
| 10. Input voltage                                | 10.4 - 14.4 VDC            |
| 12. Shutdown voltage (without load)              | 10.0V $\pm$ 0.3V           |
| 13. Operating temperature range                  | -10° C + 40° C             |
| 14. Storage temperature range                    | -40° C to 85° C            |
| 15. Protection Overload, short-circuit, Overtemp |                            |
| 16. Reverse polarity, under/over voltage         |                            |

**NOTES:** All protection is automatically recovered. To protect the battery, if the unit needs to be restarted after low voltage protection, the voltage of DC input should be above 12V.





# 200 Watt POWER INVERTER

MODEL CPI290CH

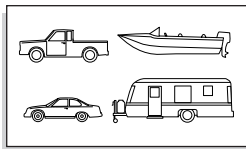
## Congratulations

Thank you for purchasing the CPI290CH Power Inverter from Cobra. When used properly, your unit will give you many years of reliable service. The operating features include:

- Dual USB 5V/2.1A Output
- AC receptacle
- Low battery shutdown
- Automatic thermal protection/shutdown

## How Your Cobra® Power Inverter Works

The Cobra® Power Inverter takes low voltage DC (direct current) power from your automobile or other low voltage power supply and converts it to standard 110 volt AC (alternating current) power like the electrical current you have in your home. Simply by plugging your unit into your vehicle's cigarette lighter socket, you can use many of your household appliances and electronic products in automobiles, RVs, boats, tractors, trucks, and virtually anywhere else.



A3

## Customer Assistance

You can receive technical assistance with your unit through one of our customer support services:

- **Automated Help Desk** is available 24 hours a day, 7 days a week at 773-889-3087.
- **Customer Service Operators** are available at 773-889-3087 Monday - Friday, 8:00 a.m. to 5:30 p.m. Central Time.
- **Questions can be faxed** to 773-622-2269.
- **Automated Technical Assistance** is available 24 hrs., 7 days a week via e-mail at: [productinfo@cobra.com](mailto:productinfo@cobra.com).
- **On-line answers** to frequently asked questions can be found at: [www.cobra.com](http://www.cobra.com).

For additional Customer Service information, see page 8-9.

## LIMITED 1-YEAR WARRANTY

# 10

Cobra Electronics Corporation warrants that this product and the component parts thereof, will be free of defects in workmanship and materials for a period of one year from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser. If the product is under warranty, it will be repaired or exchanged depending on the model as determined at Cobra's sole discretion. Such remedy shall be your sole and exclusive remedy for any breach of warranty.

The procedure for obtaining service and support, and the applicability of this warranty, will vary depending on the country or jurisdiction in which you purchased and utilize the product. For the details on obtaining product service, support and warranty please visit [www.cobra.com/support](http://www.cobra.com/support)

Provided that the product is utilized within the U.S.A.- Cobra will, without charge, repair or replace, at its option, defective products, products or component parts upon delivery to the Cobra Factory Service department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt. You must pay any initial shipping charges required to ship the product for warranty service, but the return charges, to an address in the U.S.A., will be at Cobra's expense, if the product is repaired or replaced under warranty.

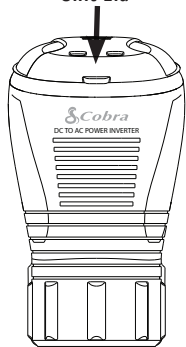
This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state and country to country.

**Exclusions:** This limited warranty does not apply: 1) To any product damaged by accident; 2) In the event of misuse, ordinary wear, failure to follow directions, or improper maintenance of the product or as a result of unauthorized alterations or repairs; 3) If the serial number has been altered, defaced, or removed; 4) If the product was purchased or is utilized in a jurisdiction not covered by the limited warranty.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. Cobra shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

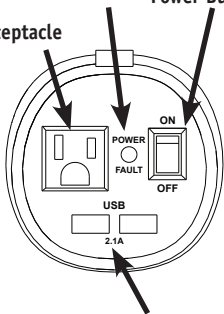
Some states and countries do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.

Unit Lid



Power/Fault Indicator Power Button

AC Receptacle



5V/2.1A USB Ports

A2

12





The Cobra® line of quality products includes:

CB Radios

microTALK® 2-Way Radios

Radar/Laser Detectors

Mobile GPS Navigations Systems

HighGear® Accessories

CobraMarine® VHF Marine Radios

Accessories

For more information about our products, or to order online please visit our website:

[www.cobra.com](http://www.cobra.com)

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Chicago, IL 60707 USA



Operating Instructions for Your  
Cobra® 200 Watt

# POWER INVERTER

MODEL CPI290CH



Nothing Comes Close to a Cobra®

## INTRODUCTION

### Cobra® 200W Output Waveform

This unit's output waveform is referred to as "square wave" or "modified sine wave." It is a stepped waveform designed to have characteristics similar to the sine wave shape of utility power. A waveform of this nature is suitable for most AC loads (including linear and switching power supplies used in electronic equipment, transformers and motors).

### For Best Results

Your CPI290CH must be used properly in order to provide the best possible results. Please read all instructions carefully before using the unit. Pay special attention to CAUTION and WARNING statements in this manual.

**CAUTION** statements specify conditions that could cause damage to the unit or other equipment.

▶ **CAUTION**

**WARNING** statements identify conditions that could result in personal injury or loss of life.

STOP **WARNING**