

MOTOMASTER

# ELIMINATOR™

200W MOBILE POWER OUTLET  
AND INVERTER WITH USB



P R O D U C T M A N U A L

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## SAVE THESE INSTRUCTIONS!

This manual contains important safety and operating instructions. Read all instructions and follow them with use of this product.

Questions? Call Customer Service Hotline: 1-877-466-8191

**Product Number** 011-1847-4

### AC POWER

**AC output voltage (nominal)** 115 V, 60 Hz

**Maximum continuous AC output power** 200 W

**5 minutes AC output power** 200 W

**Maximum AC output surge power** 400 W

**AC output frequency** 60 ± 1 Hz

**AC output waveform** Modified sine wave

### DC POWER

**USB output** 5 V / 2.1 A

**No load current draw (at 12 V)** < 0.6 A

**Efficiency (maximum)** 85 %

**Low voltage alarm** 10.5-11.0 V

**Low-voltage shutdown** 10.5-11.0 V

**High-voltage shutdown** 15.0-16.3 V

### PHYSICAL SPECIFICATIONS

**Ambient operating temperature range** 0-40 °C (32-104 °F)

**Dimensions (L x W x H)** 5 2/5 x 3 1/5 x 1 13/20" (138 x 82 x 42 mm)

**Weight** 0.59 lb (266 g)

# 4

This manual contains information that relates to **PROTECTING PERSONAL SAFETY** and **PREVENTING EQUIPMENT PROBLEMS**. It is very important to read this manual carefully and understand it thoroughly before using the product. The symbols listed below are used to indicate this information.

## SAFETY INFORMATION

### **DANGER!**

Potential hazard that will result in serious injury or loss of life.

### **WARNING!**

Potential hazard that could result in serious injury or loss of life.

### **CAUTION!**

Potential hazard that may result in moderate injury or damage to equipment.

### **IMPORTANT!**

Installation, operation, or maintenance information that is important but not hazard related.

**⚠ WARNING!**

- **HEATED SURFACE.** The power inverter housing may become uncomfortably warm, and can reach up to 60 °C (140 °F) under extended high power operation.
- Do not operate the inverter if it has been dropped or damaged in any way.
- Always disconnect the device by pulling on the plug itself, not the power cable.
- The device must be fastened so that it does not cause a safety hazard in case of collision or hard braking.
- Route the power cable so that it does not interfere with the driver of the vehicle when plugged into the cigarette lighter socket.
- Prevent the power supply cable from hanging over sharp edges.
- Using improper voltage may result in damage to the device and possible injury to the user. The correct voltage is listed on the rating plate.
- Never leave the device unattended during operation.

**⚠ CAUTION!**

- Do not connect live AC power to the power inverter's AC outlets. The inverter will be damaged even if it is switched off.
- Avoid placing the inverter on or near heating vents, radiators or other sources of heat. Do not place the inverter in direct sunlight (e.g. on the vehicle's dashboard) in order to prevent an overheat shutdown caused by high temperatures. Do not use the inverter in temperatures over 40 °C (104 °F).
- Do not insert foreign objects into the power inverter outlets or ventilation openings.

**CAUTION!**

- **DO NOT USE** the power inverter with the following equipment:

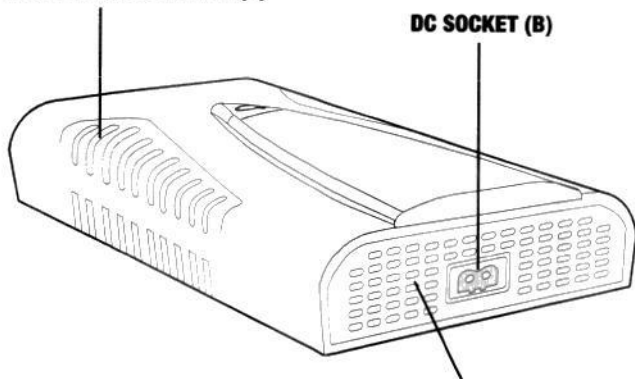
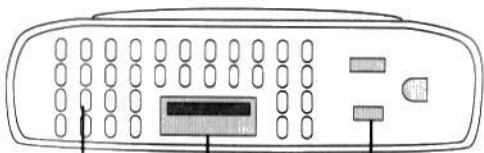


Small battery operated devices such as rechargeable flashlights, some rechargeable shavers, and night lights that are plugged directly into an AC receptacle to recharge. The device can be damaged if connected to the power inverter. Always recharge batteries using a separate battery charger.

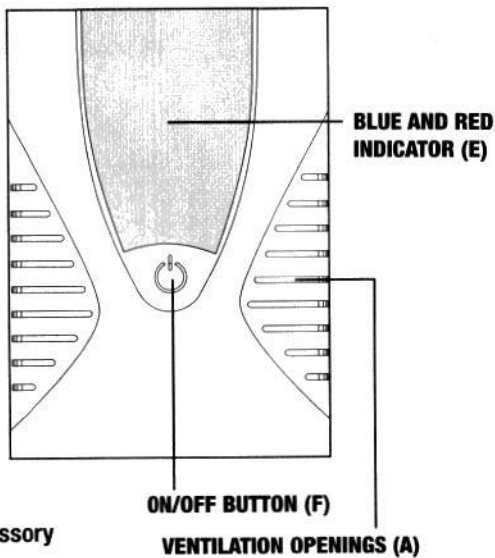


Battery chargers used in power tools. These chargers display a **WARNING LABEL** stating that there are dangerous voltages at the charger's battery terminals.

- Disconnect the power cable whenever the engine is switched off for extended periods of time. In some vehicles, the power does not turn off after the engine has been switched off. If the plug is left connected, the vehicle battery might become discharged or damaged.
- Using the device for extended periods of time can completely discharge the vehicle battery.
- When using a power inverter continuously inside a vehicle that is not running, the engine should be started at least once an hour for 10-15 minutes to keep the battery from discharging. Do not start a vehicle in a closed garage, as the carbon monoxide in the exhaust is fatal.
- Power inverters work best with a battery that is in good condition and fully charged. A weak battery will be drained easily if demands are too high. This could leave you stranded so be sure to check the battery's condition before using a power inverter in a stationary vehicle.

**VENTILATION OPENINGS (A)****DC SOCKET (B)****VENTILATION OPENINGS (A)****USB PORT 5V/2.1A (C)****AC OUTLET (D)****VENTILATION OPENINGS (A)**

**8**  
**KEY PARTS DIAGRAM**



**DC CABLE WITH CIGARETTE LIGHTER PLUG (G)**



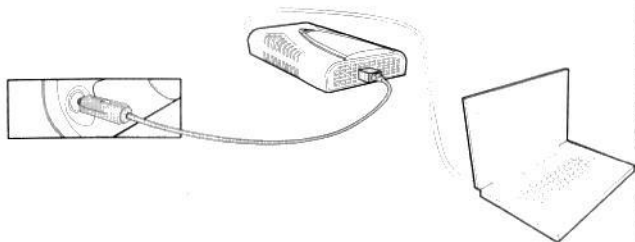
**BATTERY CLIP(H)**



The Motomaster® Eliminator® Power Inverter is an electronic device that converts the low voltage **12 V** (direct current) from a battery, as can be found in cars, motor homes, boats or other similar power sources, to the conventional **115 V** (alternating current) like you have in your home. Do not connect this inverter to batteries below 6 V and above 16 V as it might get damaged.

This conversion process thereby allows you to run standard household devices such as portable music/mp3 player, cell phone, digital camera, handheld video game, portable work light, portable DVD player, battery charger, stereo system, laptop computer.

This inverter uses modified sine wave that delivers power consistent and efficient enough to run most devices adequately.



### Options for connecting devices to the power inverter

According to the wattage of the devices and its features, you can choose to connect the device to the:



**AC OUTLET (D)**



**USB Port**



**USB PORT (C)**



## Determining the maximum load of connected devices

### **WARNING!**

**DO NOT** overload your power inverter! Overloading the inverter, even for a short time, could result in serious damage to the inverter and/or to the connected device.

A few simple steps are necessary to avoid overloading the inverter:

- Identify all devices that you would like to power.
- Add up the total wattage of devices that will be powered. The wattage can be found on the individual device's rating plate, as well as in the instruction manual.

### **IMPORTANT!**

In some cases, the wattage might not be listed on the devices you want to connect to the inverter. In that case, calculate the wattage using the following equation:

$$\text{VOLTS} \times \text{AMPERE} = \text{WATTS}$$

$$\text{Formula: } 120 \text{ Volt} \times \text{X Ampere} = \text{XXXX Watt}$$

$$\text{Example: } 120 \text{ Volt} \times 0.5 \text{ Ampere} = 60 \text{ Watt}$$

### **CAUTION!**

Understand the difference between rated (running) wattage and surge (starting) wattage.

The **RATED (RUNNING) WATTAGE** is the average amount of power that a device consumes continuously.

The **SURGE (STARTING) WATTAGE** is the amount of power that a device consumes at start-up for a limited period of time (2-3 seconds). Some devices (e.g. induction motors of small fans) may have a start-up surge of 3 to 7 times the rated wattage.

### **IMPORTANT!**

The power inverter can supply momentary surge power that is higher (400 W) than its maximum power rating (200 W). Some products with a rated wattage lower than the maximum power rating for your inverter may still exceed the inverter's surge capability and trigger an overload shutdown.

Products rated with the following power and surge ratings or less can be connected to the power inverter.

POWER RATING	MAXIMUM WATTAGE
5 min max. power rating	200 W
Continuous power rating (RATED WATTAGE)	200 W
Surge rating max. (SURGE WATTAGE)	400 W

### Wattage of commonly used devices

#### **IMPORTANT!**

The wattages given below are estimates. The actual wattage required for your devices may differ from those listed. Be sure to check the specific wattage requirements on the rating label and in the operating instructions of devices to be used.

DEVICE	RATED WATTAGE(TYPICAL VALUES)
Clock radio	50 W
13" TV / VCR	100 W
Laptop	50-75 W
Stereo system	50 W
Portable work light	25 W
Cell phone/camcorder charger	10 W
Handheld gaming device	20 W
Table Fan	200 W

#### **IMPORTANT!**

Add up the total wattage of devices to be powered.

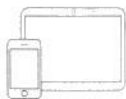
**TAKE INTO CONSIDERATION THE SURGE WATTAGE REQUIRED BY ELECTRICAL MOTORS AS WELL AS THE RATED WATTAGE.**

**Example:**

These devices can be operated simultaneously.

DEVICE	SURGE (STARTING) WATTAGE MAX. 400 W	RATED (RUNNING) WATTAGE MAX. 200 W
Light bulb	25	25
Table fan	50	50
<b>Total wattage used</b>	<b>75</b>	<b>75</b>

These devices usually CAN be connected to the Motomaster® Eliminator® power inverter:



These devices CANNOT be connected to the Motomaster® Eliminator® power inverter, as they usually have a too high start-up surge or continuous rating.



> 200 W



**IMPORTANT!**

The device is not suitable for professional or industrial use.

## Before you start

- Unpack the power inverter. Inspect the unit for damage. If the unit has been damaged, contact the retailer immediately.

### The carton should contain:

- Power inverter
  - DC cable with cigarette lighter plug
  - Batter Clip
  - Owner's manual
- Check the power inverter's identification label to ensure that you have purchased the intended model and that it has the required specifications for its intended use.

### Positioning of the power inverter:

Position the power inverter on a flat and stable surface in a location that is:

<b>DRY</b>	Do not expose to water, rain, moisture, snow or spray.
<b>COOL</b>	Operate the inverter in ambient temperatures between 0 °C and 40 °C (32 °F and 104 °F). Keep it away from heating vents and direct sunlight. We recommend using the inverter in environments not exceeding 25 °C (77 °F).
<b>WELL-VENTILATED</b>	For proper cooling, allow at least 2" (5 cm) of clearance around the inverter.
<b>CLEAN</b>	Choose a location that is free of any debris that could get into the inverter.
<b>SAFE</b>	Do not install the inverter in a compartment with batteries or flammable liquids, such as gasoline, or explosive vapours.

## Connecting the Motomaster® Eliminator® digital power inverter

**⚠ CAUTION!**

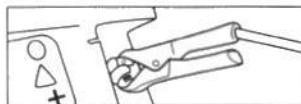
Prior to connecting to the power source:

Make sure that the total wattage of the devices you are planning to connect to the power inverter does not exceed the maximum load of the respective power outlet:

LOAD CONNECTED (W)	CONNECTION WITH LIGHTER PLUG	CONNECTION WITH CARBATTERY
Continuous load under 100 W	Yes	Yes
Continuous load between 100 and 200W	No	Yes



< 100 W



< 200 W

## Connecting the connector cables to the power inverter

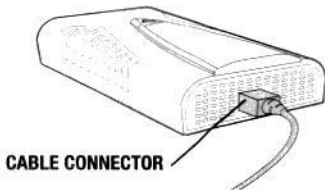
- Make sure that the power inverter is switched off by verifying that the on/off switch(F) is off.
- If the power source can be switched off, switch it off as well.
- Choose the quick connector cable(G/H) suitable for connecting the AC products that you want to operate.

### **⚠ CAUTION!**

Only use the cables provided with your power inverter.

- Connect the cable with the DC cabling terminal(B) on the back of the inverter

**Push the cable connector into the cabling terminal(B) until it is fully inserted.**



### **⚠ CAUTION!**

Do not operate in the event of the following two faulty connections, which will damage the inverter.

- A) The connection is not fully inserted, leaving the copper rod visible.
- B) The connection is not fixed in the locking position.

**Connecting the inverter to a lighter socket (loads under 200 W)**

- Follow the instructions in the previous chapter. Choose the cable with cigarette lighter plug (G) (↳ Connecting the connector cables to the power inverter).
- Fasten the **POSITIVE / + (RED) CLAMP TO THE POSITIVE / + BATTERY POST**, and then fasten the **NEGATIVE / - (BLACK) CLAMP TO THE NEGATIVE / - BATTERY POST**. Make a secure connection.



- The power inverter is now ready for use.

**⚠ CAUTION!**

If you are going to disconnect the battery, switch the inverter off first (↳ Switching on/off.)

**⚠ CAUTION!**

Always disconnect the power cables from the car battery when you are not using the device.



**⚠ CAUTION!**

Always disconnect the power wer cable from the cigarette lighter socket when you are not using the device.

**➡ IMPORTANT!**

The normal voltage drop that occurs when the vehicle's engine is started may trigger the inverter's low voltage shutdown feature. We recommend having the inverter disconnected from the cigarette lighter plug while starting the engine.

**Switching on/off**

- Be sure to have your power inverter properly placed and connected before attempting to switch it on.
- Plug in the device that you want to operate by using either the AC outlet (D) or the USB port (C).
- Press and hold the on/off button (F) until the blue indicator (E) lights up.  
The **BLUE INDICATOR** (E) indicates that the inverter is operating normally and that the AC outlet and the USB port are powered.
- To switch the inverter off, press and hold the on/off button (F) until the blue indicator (E) goes off.

**⚠ CAUTION!**

Switch the inverter off and disconnect it from the cigarette lighter socket when it is not in use.

**➡ IMPORTANT!**

When the inverter is switched off, it draws no current from the battery. When the inverter is switched on without any load connected to it, the inverter draws approx. 0.6 A from the battery. This low current draw will eventually discharge the battery.

## Using the USB port



Plug the USB-powered device into the inverter's USB port (C) and operate normally.

USB Port



### IMPORTANT!

The USB port (C) does not support data communication. It only provides 5V / 2.1 A DC power to an external USB-powered device. Not all mobile phones are provided with a charging cable. Data cables are not supported by this device. Please check with your mobile phone dealer for the correct charging cable.

## Automatic safety features

The MotoMaster® Eliminator® Power Inverter includes the following automatic safety features to ensure safe and trouble-free operation:

- Vehicle battery low-voltage automatic alarm and shutdown: activated when the battery voltage drops to 10–11 V, to protect the battery from being damaged.
- Vehicle battery high-voltage automatic shutdown: activated when the battery voltage rises to a dangerously high level due to a defective battery.
- Overload protection with automatic shutdown: activated when a device rated more than 200 W is plugged into the inverter.
- Overheat protection with automatic shutdown: activated in case the inverter overheats due to improper ventilation or a high ambient temperature.
- Output short-circuit protection: activated in case of a short-circuit in the connected device.
- Built-in fan: activated when a significant amount of power increases the internal temperature and it exceeds its ambient operating temperature.
- Replaceable 8 A fuse: used for continued protection against a risk of fire or electric shock and should be replaced manually, if necessary.

The **RED INDICATOR** (E) indicates a shut-down of the inverter due to low-voltage, high-voltage, overloading or overheating (→ Troubleshooting).

**⚠ WARNING!**

Before cleaning make sure the inverter is switched off and disconnected from the power source.

- The exterior of the device should be cleaned periodically with a damp cloth or sponge and a mild soap solution.
- Be sure vents and fans are free of dust or debris.
- Never immerse the device in water or any other liquid.
- For cleaning never use corrosive detergents, wire brushes, abrasive scourers, or metal or sharp objects.
- Store the device in a cool, dry, location that is protected from moisture and out of the reach of children.

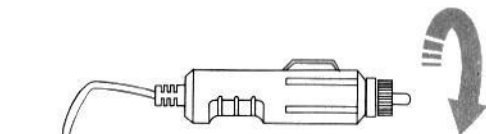
**Maintaining battery condition**

- Vehicle batteries are designed to provide brief periods of very high current needed for engine starting. They are not intended for constant deep discharge.
- The battery operating time depends on:
  - the charge level of the battery,
  - the battery capacity,
  - the amount of power drawn by the devices that are connected to the inverter.
- With an average load of about 200 W connected to the inverter, consider that the engine should be started at least once an hour for 10-15 minutes to keep the battery from discharging.
- If you need to start the engine to recharge the battery, we recommend first disconnecting the power inverter from the cigarette lighter socket. While the engine is running, the power inverter can be connected to the cigarette lighter socket again.

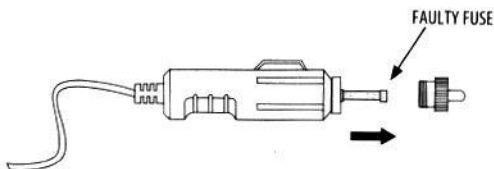
**Fuse replacement****⚠ WARNING!**

For continued protection against risk of fire or electric shock, replace only with a fuse of the same type and ratings (12 V, 8 A).

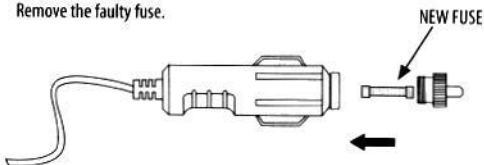
Follow the instructions to replace the fuse inside the cigarette lighter plug of your connector cable (G):



Screw off the upper cover of the cigarette lighter plug.



Remove the faulty fuse.



Insert a new fuse and screw the cover of the plug back on.

The inverter is equipped with protective shut-down features. A red indicator (E) shows that the alarm function has been activated. The details are listed in the following table:

ALARM	POSSIBLE CAUSE	SOLUTION
<b>Low battery alarm and low-voltage shutdown</b>	As the battery discharges, its voltage decreases. Voltage drops to: 10.5 - 11.0 V = alarm.	Shut down sensitive loads such as computers and then recharge the battery.
	Voltage drops to: 10.0 - 10.5 V = shutdown This protects the battery from being over-discharged.	Recharge the battery.
<b>High-voltage shutdown</b>	A defective battery charging system can cause the battery voltage to rise to high levels (15.0–16.3 V). Although the inverter has a protection against high-voltage, it might still be damaged if the input voltage were to exceed 16 V.	Disconnect the connected devices. Verify that the charging system is properly regulated and the battery is 12 V nominal.
<b>Overload shutdown</b>	If you connect a device that is rated too high or a load that draws excessive surge power, the power inverter shuts down.	Connect a device with a power rating within the inverter's continuous power rating (→ Operating instructions).
<b>Overheat shutdown</b>	The power inverter shuts down automatically if it exceeds its safe operating temperature.	<ul style="list-style-type: none"> <li>• Switch the inverter off and disconnect it from the cigarette lighter socket.</li> <li>• Disconnect all connected devices and allow the inverter to cool for at least 15 minutes.</li> <li>• Use a brush to clear any blocked ventilation holes.</li> <li>• Move the inverter to a cooler place. Reduce the load if continuous operation is required.</li> </ul>

PROBLEM	POSSIBLE CAUSE	SOLUTION
The connected device does not switch on.	The battery is defective.	Check the battery and replace it if required.
	The inverter is damaged and needs to be repaired.	Have the inverter repaired by an authorized service centre.
	Connection to the inverter or cigarette lighter plug is not tight.	Check all connections. Make sure the connection is correct and tight.
Measured inverter output is too low.	The battery voltage is too low.	Recharge the battery.
No power to inverter.	Blown fuse.	Replace fuse.
Buzz in the audio system.	Inadequate internal power supply filtering of stereo system.	Use an audio system with a high-quality filter.
Television interference.	TV signals are weak.	<ul style="list-style-type: none"> <li>• Adjust the orientation of the power inverter, television, antenna and cables.</li> <li>• Maximize TV signal strength by using a better antenna and use shielded antenna cable where possible.</li> <li>• Try a different TV model.</li> </ul>

This MotoMaster® Eliminator product carries a one (1) year warranty against defects in workmanship and materials. At its discretion, MotoMaster Canada agrees to have any defective part(s) repaired or replaced free of charge, within the stated warranty period, when returned by the original purchaser with proof of purchase. This product is not guaranteed against wear or breakage due to misuse and/or abuse.