



300 W POWER INVERTER



model no. 011-1870-6

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

**INSTRUCTION
MANUAL**

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AC POWER

AC output voltage (nominal)	115 V, 60 Hz
Continuous power	300 W
Peak power	600 W
Rated frequency	60 ± 1 Hz
AC output waveform	Modified sine wave

DC POWER

USB output	5 V / 2.1 A max
No load current draw (at 12 V)	< 0.35 A
Efficiency (maximum)	85%
Low-voltage shutdown	10.0 – 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)	7 3/8 x 3 7/8 x 2" (18.7 x 10 x 5 cm)
Weight	1 lb 3 oz (550 g)

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.

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 use the power inverter in a vehicle in which the plus pole of the car battery is connected to the chassis! Before using the device, please determine how the battery is connected in the respective vehicle.
- Do not operate the power 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 vehicle's 12 V outlet.
- Prevent the power supply cable from coming into contact with hot parts of the engine or from hanging over sharp edges and make sure it will not get caught on moving parts of the engine.
- When using car batteries, always follow the advice from the manufacturer of the battery and in the vehicle instruction manual.
- 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!

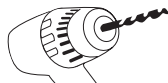
- Do not connect live AC power to the power inverter's AC outlets. The power inverter will be damaged even if it is switched off.
- Avoid placing the power inverter on or near heating vents, radiators or other sources of heat. Do not place the power inverter in direct sunlight (e.g. on the vehicle's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

CAUTION!

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



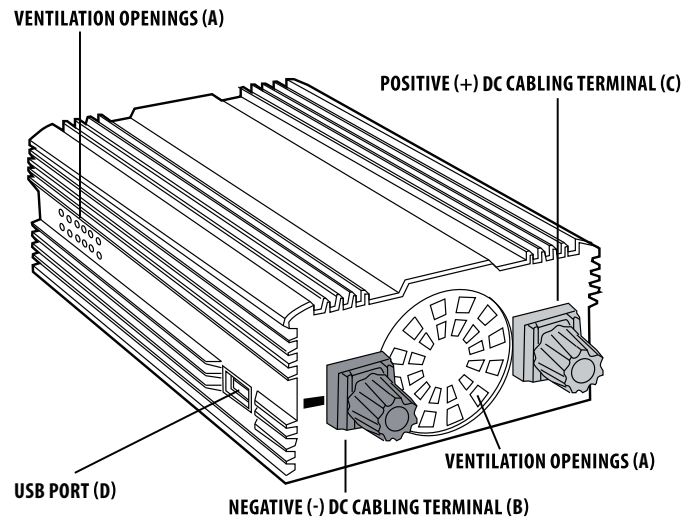
Small battery-operated devices such as rechargeable flashlights, some rechargeable shavers, and night lights that are plugged directly into an AC receptacle to recharge. The device can be damaged if connected to the power inverter. Always recharge batteries using a separate battery charger.



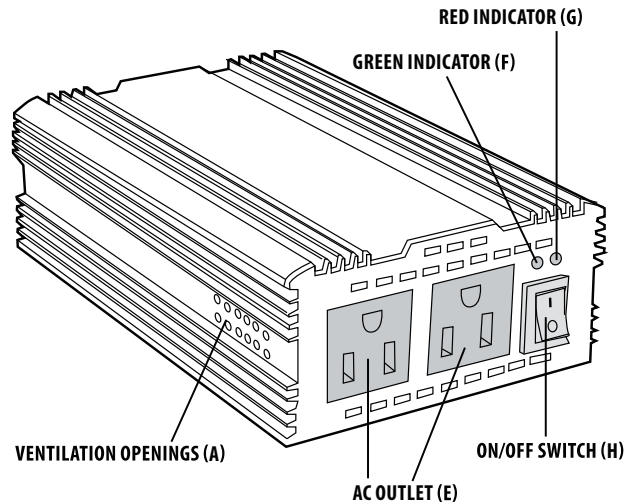
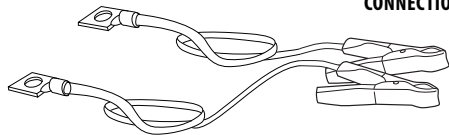
Battery chargers used in power tools. These chargers display a WARNING LABEL stating that there are dangerous voltages at the charger's battery terminals.

- Do not insert foreign objects into the power inverters or ventilation openings.
- The power inverter must only be connected to a battery that has a nominal output of 12 V. It will not operate if connected to a 6 V battery and may be damaged if connected to a battery with 16 V or more.

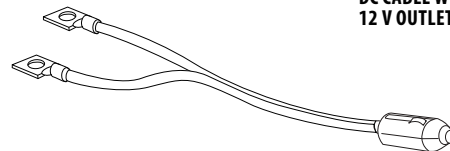
- **REVERSE POLARITY.** Power connections from a 12 V battery to the power inverter must be positive to positive and negative to negative. A reverse polarity connection (positive to negative) will blow a fuse in the power inverter and might permanently damage the unit. Damage caused by a reverse polarity connection is not covered by your warranty.
- 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.



DC CABLE WITH CLAMPS FOR DIRECT CONNECTION TO 12 V VEHICLE BATTERY (I)



DC CABLE WITH 12 V OUTLET PLUG (J)

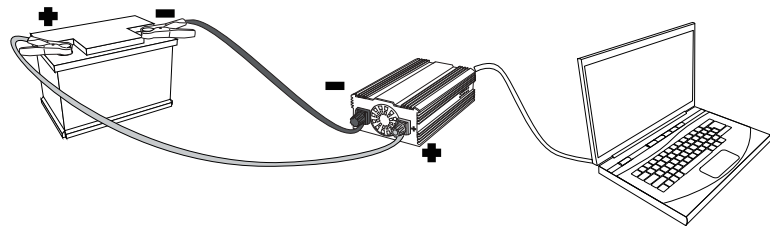


The power inverter is an electronic device that converts the low-voltage **12 V** (direct current) from a battery, as can be found in cars, motor homes, boats or other similar power sources, to the conventional **115 V** (alternating current) like you have in your home.

Do not connect this power inverter to batteries below 6 V and above 16 V as it might get damaged.

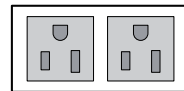
This conversion process thereby allows you to run standard household devices such as a cell phone, digital camera, portable work light, portable DVD player, battery charger, stereo system, laptop computer, 13" TV, soldering gun, finishing sander, 27" TV, 3/8" drill, 12" 3-speed fan, and other similar devices in automobiles, boats, tractors, trucks and virtually anywhere else.

This power inverter uses a 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 their features, you can choose to connect the device to the:



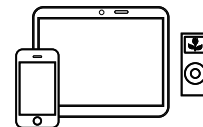
AC OUTLET (E)



USB Port



USB PORT (D)



Determining the maximum load of connected devices

WARNING!

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

A few simple steps are necessary to avoid overloading the power 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 power inverter. In that case, calculate the wattage using the following equation:

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

Formula: 120 Volts x X Amperes = XXXX Watts

Example: 120 Volts x 2 Amperes = 240 Watts

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 drills and 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 (600 W) than its maximum power rating (300 W). Some products with a rated wattage lower than the maximum power rating for your power inverter may still exceed the power 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
Continuous power output (RATED WATTAGE)	300 W
Peak power (SURGE WATTAGE)	600 W

Wattage of commonly used devices

IMPORTANT!

The wattages given on next page 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.

PRODUCTS	WATTS REQUIRED
Portable music / MP3 player	10 W
Digital Camera	10 W
Smartphone / Tablet	20–30 W
Laptop Computer	60 W
13" television	100 W
Handheld gaming device	130 W
27" television	280 W

NOTE: Power requirements for product examples are estimates only. To calculate the wattage of a product, use the following equation: amperage x 115.

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:

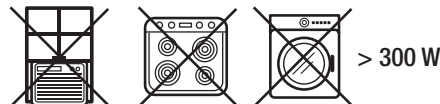
These devices can be operated simultaneously.

DEVICE	SURGE (STARTING) WATTAGE MAX. 600 W	RATED (RUNNING) WATTAGE MAX. 300 W
Light bulb	40	40
Table fan	400	200
Total wattage used	440	240

These devices usually **CAN** be connected to the power inverter:



These devices usually **CANNOT** be connected to the power inverter, as they might have a start-up surge or continuous rating that is too high.



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 12 V outlet plug (J)
- DC cable for direct connection to 12 V battery (I)
- 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:

DRY	Do not expose to water, rain, moisture, snow or spray.
COOL	Operate the power 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 power inverter in environments not exceeding 25°C (77°F).
WELL-VENTILATED	For proper cooling, allow at least 2" (5 cm) of clearance around the power inverter.
CLEAN	Choose a location that is free of any debris that could get into the power inverter.
SAFE	Do not install the power inverter in a compartment with batteries or flammable liquids, such as gasoline, or explosive vapours.

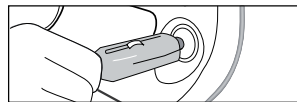
Connecting the power inverter

CAUTION!

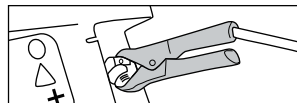
Prior to connecting to the power source:

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 12 V OUTLET PLUG	CONNECTION WITH VEHICLE BATTERY
Continuous load under 100 W	Yes	Yes
Continuous load between 100 and 240 W	No	Yes



< 100 W



< 240 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 (H) is set on the "0" position.
- Choose the DC cable (I / J) suitable for connecting the AC products that you want to operate.

CAUTION!

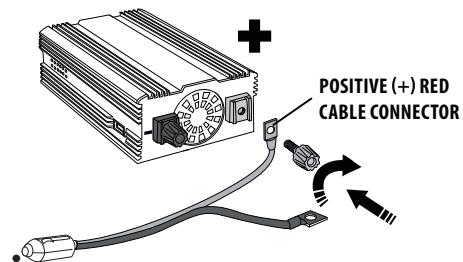
Only use the cables provided with your power inverter.

- Screw off the caps of the DC cabling terminals (B / C).
- Connect the cable with the DC cabling terminals (B / C).

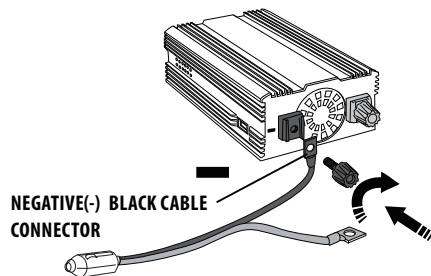
CAUTION!

Make sure to connect the **RED CABLE TO POSITIVE PORT (+)** and the **BLACK CABLE TO NEGATIVE PORT (-)**.

- Place the red cable connector on the positive DC cabling terminal (+ / red). Make sure that the respective holes are matching. Screw the red cap back on the cabling terminal until the cable connector is tightly fixed.

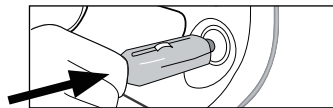


- Place the black cable connector on the negative DC cabling terminal (- / black). Make sure that the respective holes are matching. Screw the black cap back on the cabling terminal until the cable connector is tightly fixed.



Connecting the power inverter to a 12 V outlet (loads under 100 W)

- Follow the instructions in the previous section. Choose the DC cable with the 12 V outlet plug (J) (See connecting the connector cables to the power inverter).



- Plug the 12 V outlet plug into the vehicle's 12 V outlet of your vehicle. Make sure the plug is fully inserted.
- The power inverter is now ready for use.

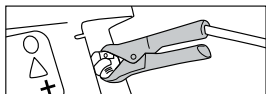
CAUTION!

Always disconnect the power cable from the vehicle's 12 V outlet when you are not using the device.

IMPORTANT!

The normal voltage drop that occurs when the vehicle's engine is started may trigger the power inverter's low-voltage shutdown feature. We recommend having the power inverter disconnected from the vehicle's 12 V outlet when starting the engine.

Connecting the power inverter to a 12 V vehicle battery (loads up to 240 W)



Safety guidelines for handling batteries

DANGER!

A spark may be visible when making the connection to a battery because a current will flow to charge the capacitors in the power inverter. Do not make this connection in the presence of flammable fumes. Explosion or fire may result. Thoroughly ventilate the battery compartment before making this connection.

DANGER!

Take special care when working with a car battery. Batteries contain corrosive materials and present an **ELECTRICAL SHOCK HAZARD**.

DANGER!

Do not use the car battery in the proximity of open flames. Do not smoke when using a car battery.

WARNING!

Remove any jewellery (watch, ring, etc.). Be careful not to short-circuit the battery with any metallic object (wrench, etc.).

WARNING!

To prevent irritation and burns, wear protective eyewear and clothing when you install the power inverter or work with a vehicle battery. Should battery acid come into contact with skin or eyes, flush it with water and consult your physician.

CAUTION!

Power connections from a 12 V battery to the power inverter must be **POSITIVE (RED) TO POSITIVE AND NEGATIVE (BLACK) TO NEGATIVE**. A reverse polarity connection (positive to negative) will blow a fuse in the power inverter and may permanently damage the unit. Damage caused by a reverse polarity connection is not covered by your warranty.

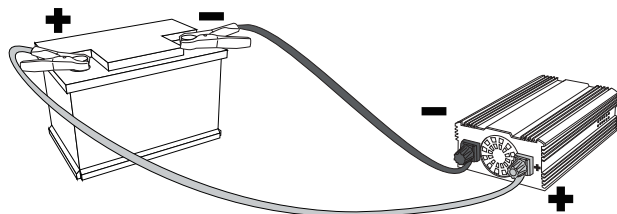
CAUTION!

Loose connectors result in an excessive voltage drop and may result in overheated wires and melted insulation.

CAUTION!

Do not start the vehicle engine during operation.

- Follow the instructions in the section (See connecting the connector cables to the power inverter) to connect the DC cable to the power inverter.
- If the battery can be switched off, switch it off.
- Fasten the positive / + (red) clamp to the positive / + battery post, and then fasten the negative / - (black) clamp to the negative / - battery post. Make sure to have a secure connection.



- The power inverter is now ready for use.

CAUTION!

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

CAUTION!

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

Switching on/off

- Be sure to have your power inverter properly placed and connected according to the wattage that is to be connected before attempting to switch it on.
- Switch the battery on in case it is switched off.
- Set the on/off switch (H) to the "I" position to switch on the power inverter.

The green indicator (F) lights up, indicating that the power inverter is operating normally and that the AC outlet and the USB port are powered.

- Plug in the devices that you want to operate to either the AC outlet or the USB port.

CAUTION!

After plugging in the devices, turn them on **ONE AT A TIME**. This will ensure that the power inverter does not have to deliver the surge currents required for all the loads at once.

- Set the on/off switch (H) to the "0" position to switch off the power inverter.

CAUTION!

Switch the power inverter off and disconnect it from the power source when it is not in use.

IMPORTANT!

When the power inverter is switched off, it draws no current from the battery. When the power inverter is switched on without any load connected to it, the power inverter draws approx. 0.3 A from the battery.

This low current draw will eventually discharge the battery.

Using the USB port



USB Port

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

IMPORTANT!

This unit's USB charging port does not support data communication. It only provides (5 V / 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 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 100 W is plugged into the power inverter.
- Overheat protection with automatic shutdown: activated in case the power 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** (G) indicates a shutdown of the power inverter due to low-voltage, high-voltage, overloading or overheating.

An **AUDIBLE ALARM** warns you if a low-voltage or a high-voltage shutdown is about to occur (See troubleshooting).

WARNING!

Before cleaning, make sure the power 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.
- Regularly operating the power inverter from a vehicle's battery until the low-voltage alarm sounds will shorten the battery's life.
- 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 power inverter.

With an average load of about 240 W connected to the power 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, first disconnect the power inverter from the battery or the vehicle's 12 V outlet.

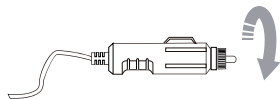
- While the engine is running, the power inverter can be connected to the vehicle's 12 V outlet again.
- Consider connecting the power inverter to a separate deep-discharge type of suitable battery if you will be frequently running electrical devices for extended periods of time.

Fuse replacement

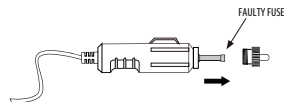
WARNING!

For continued protection against risk of fire or electric shock, replace only with a fuse of the same type and rating (125 V, 8 A).

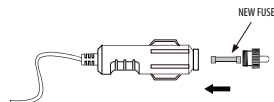
Follow the instructions to replace the fuse inside the 12 V outlet plug of your connector cable (J):



Screw off the upper cover of the 12 V outlet plug.



Remove the faulty fuse.



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

The power inverter is equipped with protective shutdown features and an acoustic signal. The details are listed in the following table:

ALARM	POSSIBLE CAUSE	SOLUTION	ERROR SIGNAL
Low battery alarm and low-voltage shutdown	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.	Audible alarm
	Voltage drops to: 10.0–10.5 V = shutdown. This protects the battery from being over-discharged.	Recharge the battery.	Red indicator light (G) turns on
High- Voltage shutdown	A defective battery charging system can cause the battery voltage to rise to high levels (15.0–16.3 V). Although the power 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.	Red indicator light (G) turns on
Overload shutdown	If you connect a device that is rated too high or a load that draws excessive surge power, the power inverter shuts down.	Use a product with a power rating within the power inverter's continuous power rating (See operation).	Red indicator light (G) turns on

ALARM	POSSIBLE CAUSE	SOLUTION	ERROR SIGNAL
Overheat shutdown	The power inverter shuts down automatically if it exceeds its safe operating temperature.	<ul style="list-style-type: none"> Switch the power inverter off and disconnect it from the vehicle's 12 V outlet. Disconnect all connected devices and allow the power inverter to cool for at least 15 minutes. Use a brush to clear any blocked ventilation holes. Move the power inverter to a cooler place. Reduce the load if continuous operation is required. 	Red indicator light (G) turns on

PROBLEM	POSSIBLE CAUSE	SOLUTION
The connected device does not switch on.	The battery is defective.	Check the battery and replace it if required.
	The power inverter is damaged and needs to be repaired.	Have the power inverter repaired by an authorized service centre.
	Incorrect connections to the inverter.	Check all connections. Make sure the connection is correct and tight.
The power inverter will run some small loads, but not larger ones.	The cables are either too long or not heavy enough.	Only use the cables provided with your power inverter.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Measured power inverter output is too low.	The battery voltage is too low.	Recharge the battery.
Battery run time is less than expected.	The AC product power consumption is higher than rated.	Use a larger battery to make up for the increase in power requirement.
	The battery is old or defective.	Replace the battery.
	The battery is not being charged properly.	Some chargers are not able to fully recharge a battery. Make sure that you use a powerful charger.
	Power dissipation in DC cables.	Only use the cables provided with your power inverter.
No power to power 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"> Adjust the orientation of the power inverter, television, antenna and cables. Maximize TV signal strength by using a better antenna and use shielded antenna cable where possible. Try a different TV model.

This MotoMaster® 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.

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