

POWERTECH



**12V 18Ah Jump Starter
with Air Compressor and Inverter
MB3738
User Manual**

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A). IMPORTANT SAFETY INFORMATION

READ AND SAVE THESE SAFETY INSTRUCTIONS BEFORE USING THIS PRODUCT

WARNING! SHOCK HAZARD

- Do not open the case of the Power Station. The high voltage inside your DC to AC Power Station generates the same potentially lethal AC power as a normal household wall outlet.
- Keep away from children.
- Do not insert foreign objects into the Power Station's AC outlet or vent openings.
- Do not expose unit to water, rain, snow or spray with water.
- Do not operate the Power Station with wet hands. The AC voltage of the unit produces an electrical shock hazard if operated with wet hands.
- Do not operate the unit if it has received a sharp blow, been dropped or otherwise damaged in any way.
- Do not disassemble the unit; refer to the warranty section of this manual for instructions on obtaining service. Attempting to service the unit yourself may result in a risk of electrical shock or fire.

WARNING! HEATED SURFACE

- The power inverter generates heat during operation. Allow at least 3cm of clearance around the unit for airflow. To avoid a risk of fire, ensure the ventilation openings on the rear of the unit are not obstructed. During operation, keep away from materials that may be affected by high temperatures.

WARNING! EXPLOSION HAZARD

- Do not use this unit in the presence of flammable fumes or gases, such as propane.
- Do not use this unit in an enclosure containing automotive-type, lead-acid batteries. These batteries, unlike sealed batteries, vent explosive hydrogen gas, which can be ignited by sparks from electrical connections.
- A battery can present a risk of electrical shock, burn from high short-circuits, and fire or explosion from vented gases. Observe proper precautions.
- When working on electrical equipment always ensure someone is nearby to help you in an emergency.

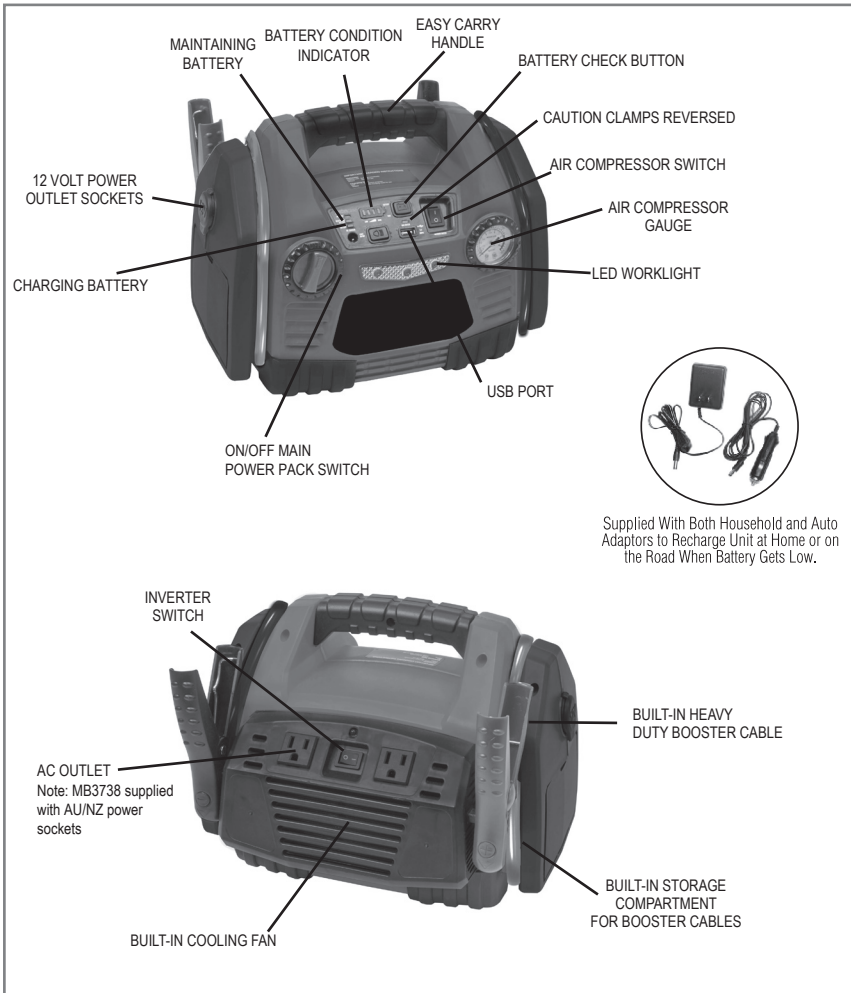
WARNINGS!

- Do not allow the positive and negative booster clamps of the jumpstart system to come into contact with each other (or a common piece of metal) at any time. This can result in an explosion or damage to the unit.
- When jumpstarting a vehicle, make sure that the positive and negative booster clamps are properly connected to the vehicle and battery. Failure to connect the clamps properly may cause sparks, an explosion or damage to the unit.
- Always wear eye protection when working with batteries.
If battery acid comes into contact with eyes, flush the eyes with water for at least 10 minutes.
- Seek medical attention immediately.
- If skin or clothing come into contact with battery acid, immediately wash the affected area with soap and water. Seek medical attention.
- Be sure to remove all metal items (watches, necklaces, rings, etc.) before using the jumpstart system.
- Always turn the jumpstart system off when not in use. Store in a cool, dry place.

B). INTRODUCTION

This MB3738 product has been carefully engineered and manufactured to give you dependable operation. Please read this manual thoroughly before operating your new product as it contains the information you need to become familiar with its features and obtain the performance that will bring you continued enjoyment for many years. Please keep this manual on file for future reference.

THE PORTABLE POWER STATION MUST BE FULLY CHARGED FOR 24 HOURS BEFORE FIRST USE. FAILURE TO DO SO MAY PERMANENTLY DAMAGE BATTERY. (See section on charging)



OPERATION INSTRUCTIONS

C). CHARGING THE POWER STATION

CHARGING THE PORTABLE POWER STATION

This unit has a maintenance free, built in sealed lead acid battery. Although the Power Station arrives partially charged from the factory, it **MUST BE FULLY CHARGED FOR 24 HOURS BEFORE FIRST USE**, even if the battery status gauge indicates a "full" charge. This initial charge pre-conditions the battery. Failure to follow this procedure may permanently damage the battery.

NOTE: MAKE SURE ALL SWITCHES ARE IN THE "OFF" POSITION

CHARGING WITH AC ADAPTOR

Plug the AC adaptor cord into the input charging jack on the front of the unit and the adaptor into any 240V AC wall outlet. The battery status indicator light will illuminate red to indicate the unit is charging. Charge for 34-36 hours or until battery is full. The battery status indicator light will illuminate yellow when the unit is fully charged.

CHARGING WITH DC ADAPTOR

Due to safety circuits built into the input charging jack, DC charging through this location will not fully charge the battery. Plug input of DC adapter plug into charging port of Jumpstart and the other end into the cigarette lighter socket of your vehicle. Yellow light on DC adapter outlet will illuminate to confirm good connection. Full charge will take approximately 12-14 hours. Vehicle should be running for full charging to take place.

CHARGING TIPS AND WARNINGS

Keep battery power topped up, ready for emergencies. Unlike some rechargeable batteries, frequent charging will not harm and in fact, will improve the performance of the internal battery. Recharge battery as soon as possible after each use to prolong battery life. Frequent heavy discharges between recharging will reduce battery life. Do not leave Power Station in a total discharged state for an extended period of time as this can cause battery failure. All lead acid batteries will self-discharge over time, especially under extreme temperatures. Store in a cool dry place. It is recommended to recharge unit every 3 months when not in use and more frequently in warmer or colder storage conditions to keep battery at peak operating efficiency. Your PORTABLE POWER STATION should not be charged for more than 40 hours continuously. Use only the charging adaptors provided with this unit.

CAUTION!

DO NOT OPERATE ANY OF THIS UNIT'S FUNCTIONS WHILE CHARGING IS IN PROGRESS.

BATTERY STATUS

Press and hold the Battery Test Button, the Battery Level Indicator LEDs will illuminate to indicate the amount of charge remaining in the Power Pack.

Yellow Light: Battery is fully charged.

Amber Light: Battery can be used.

Red Light: Recharge the battery.

D). OPERATING AS A POWER SUPPLY

The Portable Power Station is capable of supplying power for 240V AC household products and 12V DC products up to the rated capacity of the unit. The length of time the product will operate will depend on the condition of the battery and the current draw of the appliance. Low wattage appliances can be operated for several hours while higher wattage products will operate for less time. A reference chart with some typical operating times is enclosed for your reference.

AC Powered Products	Typical Watts*	Approx. Running Time **
Cordless Telephone	5	30 hours
Clock Radio	8	16.5 hours
Portable Stereo	10	12 hours
Table Lamp	40	2 hours
13" Color TV	50	1.9 hours
Jigsaw	200	25 minutes

**INVERTER SPECIFICATIONS: Maximum continuous Output Power - 200W
Output Surge Capacity - 400W**

DC Powered Products	Typical Watts*	Approx. Running Time **
Cell Phone	4	30 hours
Fluorescent Lantern	4	30 hours
Car Fan	9	14 hours
Portable 12 Volt Cooler	48	3 hours
Spotlight	55	2 hours
Car Vacuum	80	1.5 hours

DC 12 VOLT SOCKET SPECIFICATIONS: Maximum Output Power - 11A

*Actual wattage of different models may vary

**Approximate running time for reference only based on fully charged battery and model used. Actual running time may vary based on model load and battery condition.

D1). FOR 240V AC HOUSEHOLD PRODUCTS

1.1 Introduction

The Portable Power Station is equipped with a 200 watt power inverter that converts the power from the internal battery to ~230V AC household power. The Power Inverter supplies 200 watts of continuous power with 400 watts of surge power. When you turn on an appliance or a tool that operates using a motor or tubes, it requires an initial surge of power to start up. This surge of power is referred to as the "starting load" or "peak load". Once started, the tool or appliance requires less power to continue to operate. This is referred to as the "continuous load" in terms of power requirements.

You will need to determine how much power your tool or appliance requires to start up and its continued running power requirements. Power consumption is rated either in wattages (watts) or in amperes (amps).

Multiply: AMPS X 230 (AC voltage) = WATTS

This formula yields a close approximation of the continuous load of your appliances.

Multiply: WATTS x 2 = Starting Load

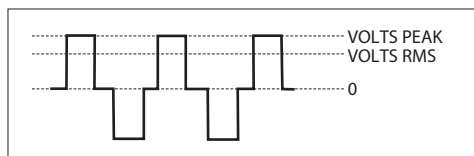
This formula yields a close approximation of the starting load of your appliances.

Most often the start up load of the appliance or power tool determines whether the inverter has the capability to power it

CAUTION!

Know the wattage requirements of your appliances. Use only those appliances that do not exceed the capacity of this unit.

The output waveform of this inverter is a MODIFIED SINE WAVE. It has a total harmonic distortion of 28% and maximum single harmonic of 18%. If you choose to measure the AC output voltage, you must use a TRUE RMS VOLT METER.



INVERTER - MODIFIED SINE WAVE

CAUTION !

Some equipment including the types listed below, may be damaged by the inverter's modified sine wave output (non-sinusoidal).

Do not use the following with this Power Station:

- Electronics that modulate RF (radio frequency) signals on the AC line will not work and may be damaged.
- Speed controllers found in some fans, power tools, kitchen appliances, and other loads may be damaged.
- Some chargers for small rechargeable batteries can be damaged.
- Small battery-operated appliances like flashlights, razors, and night lights that can be plugged directly into an AC receptacle to recharge.
- Some chargers for battery packs used in hand power tools. These affected chargers display a warning label stating that dangerous voltages are present at the battery terminals.
- Metal halide arc (MHI) lights can be damaged.

Note: If you are unsure about powering any device with the inverter, contact the equipment manufacturer to determine the appliance's compatibility with the modified sine wave (non-sinusoidal) AC waveform.

1.2 Operating instructions

Before using the inverter, ensure that the battery of your Power Station is fully charged. Place the inverter power switch in the on position. The green LED light will come on to confirm that the AC outlet is powered. If the AC product you are operating has a power switch, we recommend that it be put in the "off" position. Plug product into the AC outlet and proceed to use according to the directions on the product. The Power Station will operate most devices rated up to 200 watts. As the battery is used, its voltage begins to fall. When the inverter senses that the voltage at its DC has dropped to 10.5 volts, the inverter automatically shuts down and the LED indicator will light red. Turn off any devices, switch the main Jump-start to OFF position. Allow one hour cool down period before recharging. Recharge battery before further use.

NOTE 1: Operating a TV

When operating a TV monitor or TV/DVD combo, please note that picture tubes have a degaussing coil, which uses a high initial surge of power to light up the screen from a "cold start". If the TV does not start up on the first try, switch the TV on every 2-3 seconds until the screen comes on. Some screens may take 2-5 tries before starting.

NOTE 2: Operating with an extension cord

We recommend that you use an extension cord no longer than 30m. Between the AC output and AC appliance. A longer cord may result in reduced output.

NOTE 3: Extended Operating with an external battery.

You can extend the Power Station operating times by connecting it to a larger external battery. For example, an external 60 Ah battery gives approximately four times the operating time of the Power Station's internal battery.

Remove cables from holder and connect the red positive (+) clip of the cables to the red positive (+) terminal of the external battery. Connect the black negative (-) clip of the cables to the black negative(-) terminal of the external battery. Turn booster cable safety switch to the "on" position.



WARNING! SPARKING & EXPLOSION

- Never allow boosting cables' red and black clamps to touch each other or another common metal conductor. This action could cause damage to the unit and/or create a sparking/explosion hazard.
- Boosting cable clamps must be connected positive to positive (red clamp to battery "+") and negative to negative (black clamp to battery "-"). A reverse polarity connection (positive to negative) may cause damage to the unit and/or create a sparking/explosion hazard.



WARNING! ACID

- Use a sealed, non-spillable battery for indoor use. Common auto and marine batteries are not suitable for indoor use unless their fumes are vented outdoors. Common auto and marine batteries contain acid, which is hazardous if spilled.
- Always wear eye protection when working with batteries.
- If battery acid comes into contact with eyes, flush the eyes with water for at least 10 minutes. Seek medical attention immediately.
- If skin or clothing come into contact with battery acid, immediately wash the affected area with soap and water. Seek medical attention.

After use is completed, disconnect unit from the external battery. Remove black negative (-) clip first, then remove red positive (+) clip. Restore cables in storage compartment and recharge Power Station battery as soon as possible after allowing to cool for one hour and before next use.



CAUTION !

Do not recharge Power Station battery while it is connected to an external battery.

1.3 Inverter Specifications

Output Power Continuous:	300W
Output Power Surge:	600W
AC Output Voltage (RMS Meter):	230V \pm 10%
Output Wave Form:	Modified Sine Wave
Low Battery alarm:	DC 10.5V \pm 0.5V
Low Battery Shut Down:	DC 9.5V \pm 0.5V
Frequency:	60 Hz
Efficiency:	88%
No Load Current Draw	< 0.65A
Over temperature Protection:	65°C

D2). USB PORT

The power station is equipped with a USB port with a 5V 2.4A power output. This port is ideal for charging the latest iPads® and iPhones® and other portable devices. Connect device to port and power will automatically turn on. Output power will automatically turn off when disconnected.

D3). FOR 12V DC PRODUCTS

The Portable Power Station is equipped with one outlet socket and can be used to operate most 12 volt auto accessories and appliances (10 AMP maximum) equipped with a cigarette lighter plug.

CAUTION!

Remove the protective cover and plug in appliance. The Powerstation has a 12amp automatic overload protection circuit breaker.

E). JUMPSTARTING AN ENGINE

CAUTION!

MAKE SURE THAT ROTARY BOOSTER CABLE SAFETY SWITCH IS IN THE "OFF" POSITION. JUMPSTART MUST BE FULLY CHARGED TO JUMPSTART AN ENGINE.

Do not attempt to Jumpstart an engine if the indicator is 50% or less when you press the battery check button as you could permanently damage the battery. Battery level should be at 90 % capacity or higher for best results.

Turn off ignition and all accessories (light radio, heater, air conditioning, etc.) in the vehicle with the weak battery that will not start. Place vehicle in park and set hand brake. For maximum power, turn off all switches on your Power Station and disconnect any accessories plugged into the power outlets.

Check that vehicle is negatively grounded (most vehicles). Remove the cables from their channels. Securely connect the red positive clamp to the positive (+) terminal of the vehicle battery. Then, securely connect the black clamp to a grounding point on the vehicle such as the metal frame, as far away from the battery as possible. DO NOT connect it to the negative battery terminal. Make sure both clamps have good contact. Check cable connection polarity indicator.

NOTE: DO NOT PLACE POWER STATION WHERE IT COULD FALL WHEN VEHICLE STARTS UP. MAKE SURE THAT CABLES ARE ROUTED AWAY FROM MOTOR FAN OR BELTS.

If indicator light is green, turn rotary switch to the "on" position and start your vehicle. If indicator light is red, reverse clip connections before proceeding. Once vehicle starts, turn rotary switch to "off" position and disconnect black clamp first and then, red clamp. Restore cables in Jumpstart System and recharge unit at first opportunity after allowing to cool for one hour.

NOTE: WHEN STARTING VEHICLE, CRANK ENGINE IN 5-6 SECOND BURSTS. IF VEHICLE DOES NOT START UP WITHIN 2-3 ATTEMPTS, ALLOW THE JUMPSTART TO COOL FOR 3 MINUTES BEFORE ATTEMPTING TO START VEHICLE AGAIN. RETRY ONLY IF BATTERY CONDITION IS SATISFACTORY

WARNINGS! EXPLOSION HAZARD

- Do not turn cable safety switch to "on" position if indicator light is red and/or alarm buzzer is sounding. Turn "on" only when light is green.
- Do not allow the positive and negative booster clamps of the Power Station to come into contact with each other (or a common piece of metal) at any time. Sparking, an explosion, or damage to the unit may result.
- When jumpstarting a vehicle, make sure that the positive and negative booster clamps are properly connected to the vehicle and battery. Failure to connect the clamps properly may cause sparks, an explosion or damage to the unit.
- Always wear eye protection when working with batteries.
- If battery acid comes into contact with eyes, flush the eyes with water for at least 10 minutes.
- Seek medical attention immediately.
- If skin or clothing come into contact with battery acid, immediately wash the affected area with soap and water. Seek medical attention.
- Be sure to remove all metal items (watches, necklaces, rings, etc.) Before using the jumpstart system.
- Always turn the system off when not in use. Store in a cool, dry place.

F). OPERATING THE AIR COMPRESSOR

The Air Compressor operates from the internal battery of the Jumpstart System. Check battery condition to make sure it is satisfactory before operating compressor. Fully charged condition is best but you may be able to perform a short inflating job in 50% condition. If operating under this condition, check battery during operation and discontinue immediately if battery condition falls below 25%. Recharge unit as soon as possible and before further use.

To use the Compressor, remove hose from storage compartment in the back of the unit. With thumb lock lever in the raised position, push connector firmly over valve stem and press down lever to lock it in place. Slide Compressor switch to the on position. Monitor the pressure gauge while inflating. When desired pressure is reached, turn unit off and disconnect connector by unlocking lever. Replace hose in storage compartment.

Storage compartment contains adaptors for inflating athletic balls, thinner valve stems and small inflatables. For inflating these objects, select the appropriate adaptor and insert it into the hose connector. Press lever down to lock in place. Inflate object as above. For athletic balls, moisten needle before inserting it into the ball valve. For pneumatic articles, the tapered nozzle should be inserted into the valve and held tightly to insure a good seal.

CAUTION : This compressor is capable of inflating objects to high pressures. It will typically take approximately 6-8 minutes to inflate a regular car tire to 30 PSI. Do not over inflate objects beyond their rated capacity. Never leave compressor unattended while in use.

This Compressor is designed for periodic use only. Operation over an extended period of time will overheat the unit and damage the motor. Do not operate continuously for over 10 minutes. If you require more than 10 minutes of use, turn off and let it cool for approximately 30 minutes before resuming operation.

Pressure gauge on this unit is designed to monitor inflation only and readings may be +/- 2 PSI up to 150 PSI. For readings over 150 PSI or requiring tighter accuracy, please employ a separate gauge designed for measuring pressure to check reading.

G). MAINTENANCE INSTRUCTIONS

All batteries lose charge with time. AC recharge is recommended after each use or every two months when not in frequent use. Use the AC charger and charge for the recommended time.

If the unit gets dirty, gently clean the outer surfaces with a soft cloth moistened with a mild solution of water and detergent. Do not use solvents or other chemical cleaners. Periodically inspect the condition of charging adapters, connectors, and wires. Replace any components that may have become worn or broken. These parts are not serviceable. Do not open or disassemble. Service on Jump starter is confined to replaceable parts only. All other servicing should be performed by a qualified technician.

INVERTER FUSE

The power inverter is equipped with a 25 amp spade type fuse located at the back of the unit. With reasonable care it should not be necessary to replace this fuse.

Most blown fuses are the result of a short circuit within the appliance or equipment being operated. If the fuse happens to blow, disconnect the appliance or equipment immediately and turn the power inverter off.

To replace fuse, gently pull out the blown fuse and install a new 25 amp spade fuse .

Fuse Replacement - 12 volt adapter plug

This 12 volt plug is fitted with a fuse in the tip. Should fuse need replacing, unscrew end cap and replace with equivalent.



FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE

BATTERY

This unit is equipped with a 12 Volt maintenance free, sealed lead acid rechargeable battery which will give many years of dependable service if properly cared for following the directions above. In the event that the battery needs replacement in the future, the unit will have to be opened up by loosening the screws holding the housing together. Carefully lift off back housing to gain access to the battery. Replace and reassemble.

Replacement batteries may be purchased from an electrical supply store. Old battery should be disposed of properly and safely. Some states required recycling. Please contact your local solid waste authority for recycling information.

H). TROUBLE SHOOTING GUIDE

Buzz in Audio Equipment

Some inexpensive stereo systems have inadequate internal power-supply filtering and may buzz slightly when powered by the Power Station. The best solution to eliminate the buzzing is to use an audio system with a good quality filter.

Television Interference

The Power Station is shielded to minimize interference with TV signals. If TV signals are weak, you may see interference in the form of lines scrolling across the TV screen. Try one of the following suggestions to minimize or eliminate the interference

- Use an extension cord to increase the distance between Power Station and the TV, antenna, and cables.
- Adjust the orientation of the Power Station, television, antenna, and cables.
- Maximize TV signal strength by using a better antenna. Use a shielded antenna cable where possible.
- Try a different TV. Different models vary considerably in their susceptibility to interference.

AC Power Supply Problems

Problem	Possible Cause	Solution
AC product could not operate	AC product is drawing more than 200 W. AC product is rated at less than 200 W, but the high starting surge has tripped the safety overload. Battery has discharged to $9.5V \pm 0.5V$ Inverter fuse is blown	Use only AC product with a power rating less than 200W. Use only AC product with a starting surge within 400W surge rating of the Power Station Turn the AC outlet off and recharge the Power Station Replace with new 25A blade fuse
Overload shutdown	Appliance power requirements exceed the capability of the Power Station	Unplug the appliance and confirm that the appliance's power requirement is 200W or less before attempting to restart the appliance.
Over temperature shutdown	Inverter has overheated due to poor ventilation or excessively warm environmental conditions.	Turn the AC Outlet On/Off switch off and allow Power Station to cool for 15 minutes or more. Clear blocked fan opening or remove objects covering the unit. Move to a cooler environment.
Alarm sounds	Internal battery is nearly discharged ($10.5V \pm 0.05V$) If you ignore this warning, the Power Station will automatically shut down when the battery reaches $9.5V \pm 0.05V$	Recharge the Power Station

Problem	Possible Cause	Solution
Run time is less than expected	Internal battery was not fully charged AC product power consumption is higher than expected	Recharge using the AC Charger, until Charging Status is green Check AC product power or wattage rating (or current draw for 12 V DC appliances) and compare with chart. NOTE: Start up load will affect running time of appliance

Jumpstart Problems

Problem	Possible Cause	Solution
The engine being boosted will not start.	Power Station battery is not fully charged The engine condition is poor. The engine start capacity exceeds the boosting capability of the Power Station	Recharge the battery. Have the engine serviced.

Charging Problems

Problem	Possible Cause	Solution
Charging Status light is off when AC charger is connected	No AC power at the AC wall outlet. AC Charger is faulty	Ensure power is available at the AC wall outlet. Replace the AC Charger.
Power Station has been charging for more than 40 hours but Charging Status is still not green	Status Gauge may have temporarily malfunctioned.	Disconnect charger and allow Power Station to rest for 15 minutes. Recheck battery voltage



WARNING! ELECTRIC SHOCK HAZARD

Do not remove the housing or disassemble the Power Station except to replace the internal battery. The Power Station does not contain any internal user-serviceable parts and attempting to service the unit yourself could result in electrical shock or burn.