OWNER'S MANUAL

Schumacher® ELECTRIC

Model: PI-140

Power Inverter

Converts 12V DC battery power
to 120V AC household power

⚠WARNING **READ THE ENTIRE MANUAL BEFORE USING THIS PRODUCT. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.**

IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.

SAVE THESE INSTRUCTIONS – This manual will show you how to use your inverter safely and effectively. Please read, understand and follow these instructions and precautions carefully, as this manual contains important safety and operating instructions. The safety messages used throughout this manual contain a signal word, a message and an icon.

The signal word indicates the level of the hazard in a situation.

⚠DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or bystanders.

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.

⚠CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in moderate or minor injury to the operator or bystanders.

IMPORTANT Indicates a potentially hazardous situation which, if not avoided, could result in damage to the equipment, vehicle or property.

⚠WARNING

Pursuant to California Proposition 65, this product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

1. IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS.
This manual contains important safety and operating instructions.

RISK OF ELECTRIC SHOCK OR FIRE.

1.1 Keep out of reach of children.

1.2 For the most effective use, place the power inverter on a flat surface.

1.3 Keep the inverter well ventilated in order to properly disperse heat generated while it is use. Make sure there are several inches of clearance around the top and sides and do not block the slots of the inverter.

1.4 Make sure the inverter is not close to any potential source of flammable fumes or clothing.

1.5 Do not place the inverter in areas such as battery compartments or engine compartments where fumes or gases may accumulate.

1.6 Keep the inverter dry. DO NOT allow the inverter to come into contact with rain or moisture.

1.7 DO NOT operate the inverter if you, the inverter, the device being operated or any other surfaces that may come into contact with any power source are wet. Water and many other liquids can conduct electricity, which may lead to serious injury or death.

1.8 Do not place the inverter on or near heating vents, radiators or other sources of heat or flammable materials.

1.9 Do not place the inverter in direct sunlight. The ideal air temperature for operation is between 50° and 80°F.

1.10 Only connect the power inverter to a 12 volt battery or power supply. Do not attempt to connect the inverter to any other power source, including an AC power source. Connecting to a 6 volt or 16 volt battery will cause damage to the inverter.

1.11 Make sure the AC plug is tight.

1.12 Do not modify the AC receptacle in any way.

1.13 Do not try extending or otherwise changing the 12 volt power cord supplied with your inverter. Make sure the cord connections are tight.

1.14 Incorrect operation of your inverter may result in damage and personal injury.

⚠WARNING The inverter output is 120V AC and can shock or electrocute the same as any ordinary household AC wall outlet.

1.15 Do not use the inverter with a product that draws a higher wattage than the inverter can provide, as this may cause damage to the inverter and product.

1.16 Do not open – No user serviceable parts inside.

1.17 This device does not include an internal Ground Fault Circuit Interrupter (GFCI).

2. INVERTER FEATURES

1. LED Indicator Light (Green = Power ON)
2. Standard Electrical 120V AC Outlet
3. 12 Volt Power Plug
4. USB Power Port
5. Low-Battery Protection

3. BEFORE USING YOUR POWER INVERTER

NOTE: This inverter is designed to be used with a single battery, up to group 31 type (130 Ah or smaller in size).

NOTE: Do not use the inverter with a product that draws a higher wattage than the inverter can provide, as this may cause damage to the inverter and product.

When you turn on a device or a tool that runs on a motor, the device basically goes through two stages:

1. Start Up – Requiring an initial surge of power (commonly known as the “starting or peak load”).
2. Continuous Operation – Power consumption drops (commonly known as the “continuous load”).

The wattage (WATTS) or amperes (AMPS) can normally be found stamped or printed on most devices and equipment, or in the user’s manual. Otherwise, contact the manufacturer to find out whether the device you want to use is compatible with a modified sine wave.

To calculate the wattage: Wattage = AMPS x 120 (AC Voltage).

To calculate the starting load: Starting Load = 2 x WATTS. In general, the start up load of the device or power tool determines whether your inverter has the capability to power it.

To calculate the continuous load: Continuous Load = AMPS x 120 (AC Voltage).

IMPORTANT Always run a test to establish whether the inverter will operate a particular piece of equipment or device. In the event of a power overload, the inverter is designed to automatically shut down. This safety feature prevents damaging the inverter while testing devices and equipment within the wattage range of the inverter.

If a device does not operate properly when first connected to the inverter, turn the inverter ON (I), OFF (O), and ON (I) again in quick succession. If this procedure is not successful, it is likely that the inverter does not have the required capacity to operate the device in question.

IMPORTANT This inverter is designed to power 100 watt devices or less when used with the vehicle 12 volt accessory port. To use the full output you must use the battery clips adapter and connect the inverter directly to the battery.

NOTE: The 100 watt limit is to accommodate the fuse ratings for all vehicles. Some vehicles may allow the full output. If the fuse blows when you switch on the device you are trying to use, you have to either use a smaller device or you must purchase the 12 volt accessory outlet to battery clips adapter (Schumacher Model SAC-103) and connect the inverter directly to the battery.

IMPORTANT This inverter uses a nonsinusoidal waveform. Therefore, we do not recommend you use it to power the following devices:

1. Switch mode power supplies
2. Linear power supplies
3. Class 2 transformers
4. Line filter capacitors
5. Shaded pole motors
6. Fan motors
7. Microwave ovens
8. Fluorescent and high intensity lamps (with a ballast)
9. Transformerless battery chargers

Doing so may cause the device to run warmer or overheat.

4. OPERATING INSTRUCTIONS

1. Push the 12 volt power plug firmly into the 12V accessory outlet.
2. The LED indicator light should glow GREEN, verifying the inverter is receiving power.
3. Make sure the device to be operated is turned OFF.
4. Plug the device into the inverter AC outlet or USB port.
5. Turn the device on.
6. To disconnect, reverse the above procedure.

NOTE: You may hear a “buzzing” sound being emitted from inexpensive sound systems when operated with the inverter. This is due to ineffective filters in the sound system’s power supply. Unfortunately, this problem can only be resolved by purchasing a sound system with a higher quality power supply or higher quality filter.

5. POWER SOURCE

Your average automobile or marine battery at full charge will provide an ample power supply to the inverter for approximately 3 hours when the engine is off. The actual length of time the inverter will function depends on the age and condition of the battery and the power demand being placed by the device being operated with the inverter.

If you decide to use the inverter while the engine is off, we recommend you turn OFF the device plugged into the inverter before starting the engine. To maintain battery power, start the engine every 2 to 3 hours and let it run for approximately 10 minutes to recharge the battery.

Although it is not necessary to disconnect the inverter when turning over the engine, it may briefly cease to operate as the battery voltage decreases. While the inverter draws very low amperage when not in use, it should be unplugged to avoid battery drain.

6. LED INDICATOR AND SHUTDOWN PROTECTION

The LED glows GREEN automatically when plugged into a 12 volt DC source and will not glow under the following conditions:

1. When the power input from the vehicle’s battery drops to approximately 10V, low battery shutdown occurs and inverter shuts off. Solution: Recharge or replace the battery.
2. When the power input from the vehicle’s battery exceeds 15V, high voltage protection occurs. Solution: Reduce the voltage range to between 12V and 14V.
3. The continuous load demand from the equipment or device being operated exceeds the continuous load rating of the inverter being used. Solution: Use a higher capacity inverter or lower rated device.
4. The case temperature becomes hot (exceeds 145°F). Solution: Allow the inverter to cool. Do not block the cooling slots or air flow over and through the inverter. Reduce the load on the inverter to the continuous rated output.

RESET: To reset after shutdown occurs, remove the 12 volt plug from the accessory outlet. Check the source of the problem and correct. Reinsert the 12V plug into the accessory outlet.

7. IF THE INVERTER FUSE BLOWS

Your power inverter is fitted with a fuse, which should not have to be replaced under normal operating conditions. A blown fuse is usually caused by reverse polarity or a short circuit within the device or equipment being operated.

If the fuse does blow:

1. Disconnect the device or equipment immediately.
2. Find the source of the problem and repair it.
3. Install a new fuse (15A). The fuse can be found on the end of the plug on the inverter.
4. Do not tighten the fuse cap too tight; finger-tight is sufficient.

ATTENTION: Do not install a fuse higher than 15A, as this may damage the inverter. Make sure to correct the cause of the blown fuse before using the inverter again.

8. TROUBLESHOOTING

PROBLEM	REASON	SOLUTION
LEDs do not light, or inverter does not function.	Poor contact at terminals.	Unplug and reinsert the 12 volt plug.
	Fuse blown.	See “IF THE INVERTER FUSE BLOWS” section.
	Inverter shutdown.	See “LED INDICATOR AND SHUTDOWN PROTECTION” section.

9. SPECIFICATIONS

Maximum Continuous Power	140 Watts
Surge Capability (Peak Power)	280 Watts
No Load Current Draw	<0.2A
Wave Form	Modified Sine Wave
Input Voltage Range	10.5V – 15.5V DC
Output Voltage Range	120V ± 5% AC
Low Battery Shutdown	10.5V ± 0.3V DC
High Battery Shutdown	15.0V – 16.0V DC
Optimum Efficiency	85%
AC Outlet	One, 120V AC 3-Prong
USB Port	One, 5V 0.5 Amp
Fuse	15A (250V)
Dimensions	5.5" L x 2.5" W x 1.5" D
Weight	approximately .45 lb.

10. REPLACEMENT PARTS

Fuses – Replacement fuses can be purchased at most electronic component retailers.