



Pure Sine Inverter
GPSW-150
GPSW-300

Owner's Manual





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1.0 Introduction

The Go Power![™] SW150 and SW300 Sine Wave Inverters convert DC power to AC power and can be used in a wide range of applications including remote homes, RVs, sailboats, powerboats, laptops, cell phone chargers, and even gaming equipment. The inverters operate most televisions, VCRs, personal computers, small appliances, and can charge cordless tools such as drills, sanders and grinders, mixers, and blenders.

An inverter must have a greater power rating than the load to which it is providing power. To get the most out of the inverter, ensure it is installed and used correctly. Please read the instructions in this manual before installing and using the inverters.



2.0 Specifications

2.1 GPSW-150 W Inverter

SPECIFICATIONS*	GPSW-150 (12V)	GPSW-150 (24V)
Continuous Output Power	150 W	
Surge Rating	260 W	
Output Waveform	Pure Sine Wave <3% THD	
Output Voltage \pm 5%	115 VAC RMS	
Input Voltage	10.5 – 15 VDC	21.0-30.0
Efficiency	80-90%	
No Load Current Draw / Powersave	0.20 A	0.15 A
Protection	Overload, Short Circuit, Reverse Polarity (Fuse), Over/Under Input Voltage, Over Temperature	
Low Battery Alarm \pm 2%	10.5 V	21.0 V
Low Battery Shut-Down \pm 2%	10.5 V	21.0 V

SPECIFICATIONS*	GPSW-300 (12V)	GPSW-300 (24V)
Continuous Output Power	300 W	
Surge Rating	450 W	
Output Waveform	Pure Sine Wave <3% THD	
Output Voltage \pm 5%	115 VAC RMS	
Input Voltage	10.5 – 15 VDC	21.0-30.0
Efficiency	80-90%	
No Load Current Draw / Powersave	0.26 A	0.23 A
Protection	Overload, Short Circuit, Reverse Polarity (Fuse), Over/Under Input Voltage, Over Temperature	
Low Battery Alarm \pm 2%	10.5 V	21.0 V
Low Battery Shut-Down \pm 2%	10.5 V	21.0 V

Operating Temperature Range	0 - 40°C / 32°F - 104°F	
Storage Temperature Range	-30°C - 70°C / -22°F - 158°F	
Cooling	Thermostatically Controlled Fan	
AC Receptacle	Dual GFCI	
Remote Port Option	Yes	
Dimensions (L x W x H) in mm	237 x 155 x 72	
Dimensions (L x W x H) in inches	9.3 x 6.1 x 2.8	
Weight	2.7 kg / 5.9 lbs	
Warranty	2 Year	





Pure Sine Wave Inverter
GPSW-150
GPSW-300

Inverter Install Kits

Anderson Lug Terminals

UPC

8-39085-00004-5

8-39085-00060-1

2.2
GP
SW-

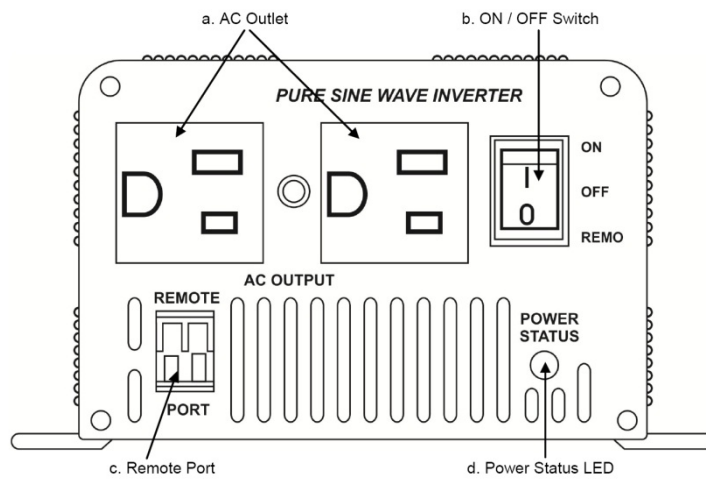
300 W Inverter



3.0 Name and Main Function

3.1 GPSW-150

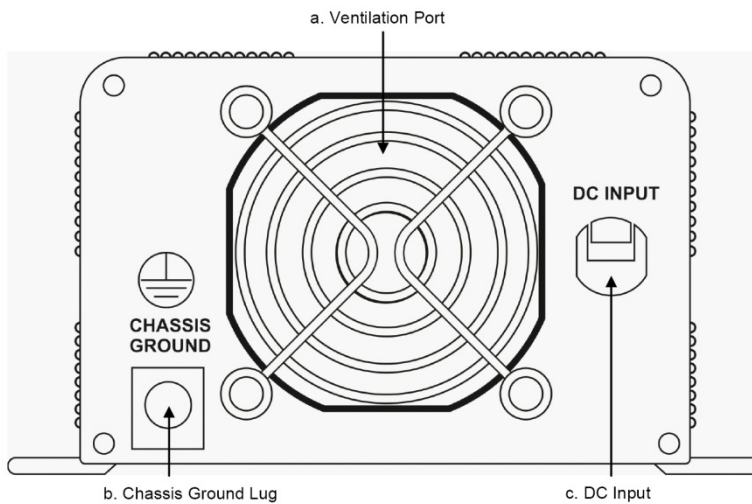
Front View





- a. AC outlet:
Outlet sockets available: North America (NEMA 5-15R)
- b. ON / OFF switch:
Power ON/OFF switch, leave in the OFF position during installation.
- c. Remote port:
Allows customer to connect 2 wire switch to use as ON/OFF remote. Ex. Toggle switch or light switch.
- d. Power status LED:
The LED display indicates the power status of the inverter; see section 0 5.2 Power *Status* for more information.
 - Solid Green: AC power OK
 - Fast Red Blink: Over voltage protection (OVP)
 - Slow Red Blink: Under voltage protection (UVP)
 - Intermittent Red Blink: Over temperature protection (OTP)
 - Solid Red: Overload protection (OLP)

3.1.2 Rear View GPSW-150



Operation of the inverter without a proper ground connection may result in an electrical safety hazard.

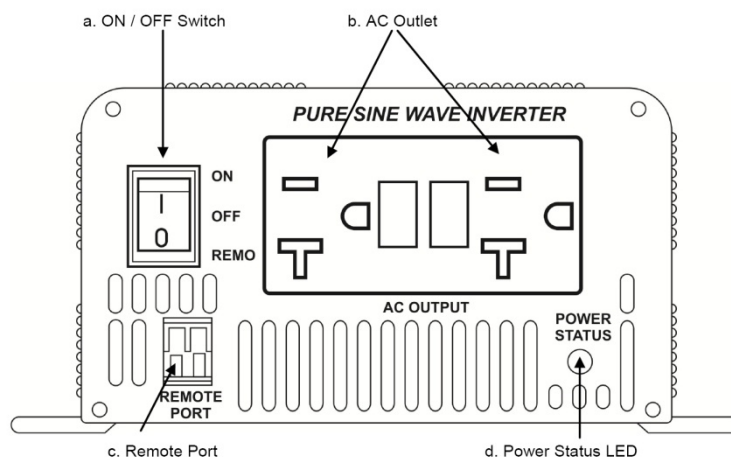


- a. Ventilation port:
Do not obstruct, allow at least 1 inch (2.54 cm) for air flow.
- b. Connect the chassis ground to the vehicle chassis using a #8 AWG wire.
- c. DC Input:
Included: 3 foot (0.91 m) cable with automobile DC plug.
Use the DC input terminal to connect to a battery or other power source: black is negative (-), red is positive (+). A reverse polarity connection will blow the internal fuse and may permanently damage the inverter. Observe the DC Input rating.

**3.2
GP
SW**

-300

Front View



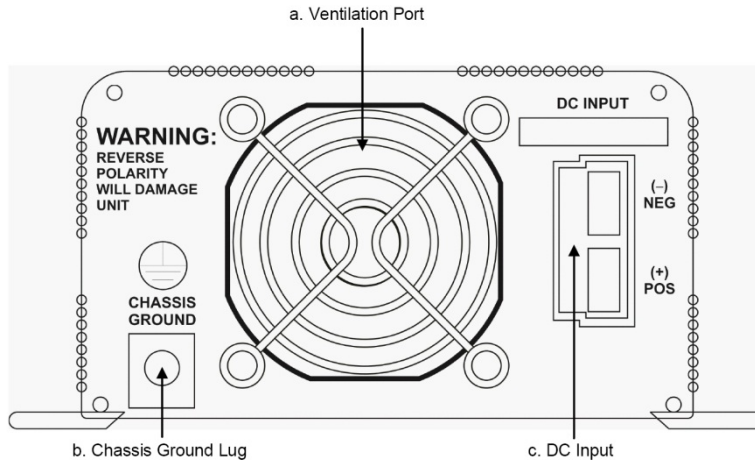
- a. ON / OFF switch:
Power ON/OFF switch, leave in the OFF position during installation.
- b. AC outlet:
Outlet sockets available: North America (GFCI).
- c. Remote port:
Allows customer to connect 2 wire switch to use as ON/OFF remote. Ex. Toggle switch or light switch.
- d. Power status LED:
The LED display indicates the power status of the inverter; see section 0 5.2



Power *Status* for more information.

Solid Green:	AC power OK
Fast Red Blink:	Over voltage protection (OVP)
Slow Red Blink:	Under voltage protection (UVP)
Intermittent Red Blink:	Over temperature protection (OTP)
Solid Red:	Overload protection (OLP)

Rear View



Operation of the inverter without a proper ground connection may result in an electrical safety hazard.

- a.** Ventilation port:
Do not obstruct, allow at least 1 inch (2.54 cm) for air flow.
- b.** Connect the chassis ground to the vehicle chassis using a #8 AWG wire.
- c.** DC Input:
Included: 4 foot (1.22 m) cable with Anderson Power Pole connectors.
Use the battery terminals to connect to battery or other power source: black is negative (-), red is positive (+). A reverse polarity connection will blow the internal fuse and may permanently damage the inverter. Observe the DC Input rating.



4.0 Installation

4.1 Where to Install

The inverter should be installed in a location that meets the following requirements:



Do not connect the inverter and another AC source (generator or utility power) to the AC wiring or AC loads at the same time. Doing so will destroy the inverter and void the warranty, regardless whether the inverter is switched on or off. If you are using more than one AC source for the AC wiring or AC loads, it is highly recommended that you install an automatic transfer switch (GP-TS), available from Go Power!TM

- a) Dry - Do not allow water to drip or splash on the inverter.
- b) Cool - Ambient air temperature should be between 32 and 104 °F (0 and 40 °C); the cooler the better.
- c) Ventilated - Allow at least 2 inches (5.08 cm) of clearance around the inverter for air flow. Ensure the ventilation openings on the rear and bottom of the unit are not obstructed.
- d) Safe - Do not install the inverter in the same compartment as batteries or in any compartment capable of igniting flammable liquids such as gasoline.
- e) The inverter location should not exceed 10 feet (3.05 m) of the batteries.

4.2 Installation and testing

The following procedure describes how to install and test the GPSW150 and GPSW300 inverters.

1. Unpack and inspect your Go Power!TM Inverter. Ensure that the power switch is in the OFF position.
2. Connect power:

GPSW150:

Attach the automobile DC plug to a DC socket; go to step 7.



Ensure there is circuit protection on the DC socket; see section 0 4.3 *Cables*. If the DC plug is removed showing the negative and positive wires, go to step 3.

GPSW300: Plug in the Anderson Power Pole connectors; go to step 3.

- Securely connect the negative cable (black) to the negative terminal of the battery.



Loose connections result in excessive voltage drop and may cause overheated wires and melted insulation.



A reverse polarity connection will blow a fuse in the inverter and may permanently damage the inverter. Damage caused by reverse polarity connection is not covered by the warranty.

- Before proceeding further, carefully check to ensure that the cable connects from the negative DC input of the inverter to the negative terminal of the battery.



You may observe a spark when you make the positive connection since current may flow to charge capacitors in the inverter. Do not make this connection in the presence of flammable fumes, as explosion or fire may result.

- Install the recommended inverter fuse in the positive lead; see section 4.3 *Cables*. The fuse should be located as close to the battery as possible. Ensure all connections are tight and secure.
- Securely connect the positive cable (red) to the positive terminal of the battery.
- Set the power switch to the ON position. Check the indicator LED on the front panel of the inverter to ensure that it is green.
- Set the inverter switch to the OFF position. The indicator light may blink and the internal alarm may sound momentarily. This is normal. Plug the test load into the AC receptacle on the front panel of the inverter.
- Set the inverter switch to the ON position and turn on the test load; the inverter should supply power to the load. If you plan to measure the output voltage of the inverter, a true RMS meter must be used for accurate readings.



4.3 Cables

4.3.1 GPSW150 – 12 V / 24 V

Use the included 3 feet (0.91 m) of #14 AWG wire and automobile DC plug.

When used in conjunction with an automobile DC socket, ensure the DC socket fuse in the automobile fuse box is rated to the inverter load.

For example:

- 100 W = 10 A fuse
- 150 W = 15 A fuse

If the DC automobile plug is removed and/or the inverter is not attached to a battery via an automobile fuse box, attach a 20 A fuse in line with the positive conductor as close to the battery as possible. Extending the included cables may result in excessive voltage drop. Increase the overall cable gauge to the next larger standard size for every 3 feet (0.91 m) extended and do not exceed 10 feet (3.05 m) total inverter cable length.

For example: 10 feet (3.05 m) cable = 10 gauge wire

4.3.2 GPSW300 – 12 V / 24 V

Use the included 4 feet (1.22 m) of #10 AWG wire and Anderson Power Pole connectors.

Attach a 40 A or 20 A when using 24 volt version fuse in line with the positive conductor as close to the battery as possible. Extending the included cables may result in excessive voltage drop. Increase overall cable gauge to the next larger standard size for every 3 feet (0.91 m) extended and do not exceed 10 feet (3.05 m) total inverter cable length.

For example: 10 feet (3.05 m) cable = 6 gauge wire

4.4 Grounding

The inverter has a chassis ground lug on the rear panel allowing you to connect the chassis of the inverter to ground. The ground terminals in the AC outlets on the front panel of the inverter are internally connected to the chassis ground. If available, the chassis ground lug should be connected to a grounding point, which will vary depending on where the inverter is installed. In a vehicle, connect the chassis ground to the chassis of the vehicle. In a boat, connect the chassis ground lug to the boat's grounding system. In a fixed location, connect the chassis ground lug to an earth ground.

The neutral (common) conductor of the inverter AC output circuit is connected (bonded) to the chassis ground inside the inverter. Therefore, when the chassis is connected to a ground, the neutral conductor is also grounded. These grounding connections conform to national electrical code requirements which state that separately derived AC sources (such as inverters and generators) have their neutral tied (bonded) to ground in the same way that the neutral conductor from the utility line is tied (bonded) to ground in the AC breaker panel of a non-mobile dwelling.

Important:



As per the national electrical code, electrical panels in mobile applications must not have a bonded neutral. If the inverter is supplying power to equipment or a panel where the neutral and ground are connected (bonded), a ground loop will occur. If a ground loop occurs on inverters with GFCI outlets, the GFCI outlet will trip and output power from the inverter will be cut off. If your GFCI repeatedly needs to be reset, this indicates a ground loop somewhere in your system. In this case, please have a qualified service technician inspect your electrical system or equipment.



The negative DC input of the inverter is connected to the chassis. Do not install the inverter in a positive ground DC system. A positive ground DC system has the positive terminal of the battery connected to the chassis of the vehicle or to the grounding point.

5.0 Operation

To operate the inverter, turn it on using the ON / OFF switch on the front panel. The inverter is now ready to deliver AC power to your loads. If you are operating several loads from the inverter, turn on the inverter, and then turn on each load separately. This will ensure that the inverter does not have to deliver the starting-currents for all the loads at once.

5.1 Operating On / Off Switch

The ON / OFF switch turns the control circuit in the inverter ON and OFF. It does not disconnect power from the inverter.

When the switch is in the OFF position, the inverter draws no current from the battery. When the switch is in the ON position, but with no load, the inverter

draws approximately 0.20 A from the battery.

5.2 Power Status

The power status LED indicates the operating state of the inverter. If the LED is green, then the inverter is in operational mode and producing approximately 115 V AC. If the LED is red or flashing red, then the inverter is in fault mode and there is no AC output.

Table 1: Inverter Power States

State	LED	Description
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Over voltage protection	Red LED blinking fast	Over voltage protection indicates that the inverter has shut itself down because its input voltage is over: <ul style="list-style-type: none">• 12 V: 15.0 ~ 16.0 V DC• 24 V: 30.0 ~ 32.0 V DC
Under voltage protection	Red LED blinking slowly	Under voltage protection indicates that the inverter has shut itself down because its input voltage is lower than: <ul style="list-style-type: none">• 12 V: 10.0 ~ 10.5 V DC• 24 V: 20.0 ~ 21.0 V DC
Over temperature protection	Red LED blinking intermittently	Over temperature protection indicates that the inverter has shut itself down because it has become overheated. The inverter may overheat if it has been operated at power levels above its rating or if it has been installed in a location which does not allow it to properly dissipate heat. The inverter automatically restarts once it has cooled down.
Overload protection	Red LED solid	Overload protection indicates that the inverter has shut itself down because its output circuit has been short circuited or drastically overloaded. Switch the ON / OFF switch to OFF, correct the fault condition, and then switch the ON / OFF switch back to ON.

5.3 Resetting Faults

Any of the inverter protection faults can be re-set by turning the inverter off for 5 seconds and then turning the inverter on again. The GPSW150 and GPSW300 inverters can also re-set any protection faults using the optional remote on/off switch (2 wire switch supplied by customer) to turn the inverter off and then on again.

5.4 Remote

A user supplied remote option is available for both the GPSW150 and GPSW300 inverters. When the ON / OFF switch is moved to the remote setting, the inverter becomes operational only when a connection is made between the two terminals of the remote input. A switch may be placed between the two terminals and the inverter can then be turned off using the switch. A 1/8" (3.0 mm) precision screwdriver is recommended for tightening the two terminals. It is recommended that a #18 gauge wire no longer than 150 feet (45.72 m) (terminal to terminal) is used for this application.



Never connect live AC or DC conductors to the remote terminals.

6.0 Operating limits

6.1 Power output

Some induction motors used in refrigerators, freezers, pumps, and other motor-operated equipment require very high surge currents to start. The inverter may not be able to start some of these motors even though their rated current draw is within the power rating of inverter. Televisions and computer monitors may surge up to four times their rated power on startup, which may result in the inverter showing an overload fault.

6.2 Input voltage

The inverter operates at the following input voltage ranges:

- **12 V:** 10.5 to 15.0 V
- **24 V:** 21.0 to 30.0 V

The inverter shuts down if the input voltage drops below:

- **12 V:** 10.5 V
- **24 V:** 21.0 V

This protects your battery from being over discharged.

The inverter also shuts down if the input voltage exceeds:

- **12 V:** 15.0 V
- **24 V:** 30.0 V

This protects the inverter against excessive input voltage. Although the inverter incorporates protection against over voltage, it may still be damaged if the input voltage is allowed to exceed:

- **12 V:** 16.0 V
- **24 V:** 35.0 V

7.0 Troubleshooting

7.1 Television interference

Operation of the inverter can interfere with television reception on some channels. If this situation occurs, the following steps may help to alleviate the problem.

- Ensure that the chassis ground lug on the back of the inverter is securely connected to the ground system of your vehicle, boat, or home.
- Do not operate high power loads with the inverter while watching television.
- Make sure that the antenna feeding your television provides an adequate



("snow free") signal and that you are using a good quality cable between the antenna and the TV.

- Move the television as far away from the inverter as possible.
- Keep the cables between the battery and the inverter as short as possible and twist them together with about 2 to 3 twists per foot. This minimizes radiated interference from the cables.

7.2 Troubleshooting guide

Table 2: Common Problems

Problem and Symptoms	Possible Cause	Solution
No output voltage, red LED blinking fast	High input voltage	Ensure that inverter is connected to a 12 V / 24 V battery. Check the regulation of charging system.
No output voltage, red LED blinking slowly	Poor DC wiring, poor battery condition	Use the proper cable and make secure connections. Use a new battery.
No output voltage, load in excess of 150 W, red LED blinking intermittently	Thermal shutdown	Allow the inverter to cool off. Reduce the load if continuous operation required.
No output voltage, load less than 150 W, red LED blinking intermittently	Thermal shutdown	Improve ventilation; ensure that the inverter ventilation openings are not obstructed. Reduce the ambient temperature.
No output voltage, red LED solid	Overload	Reduce the load.
No output voltage, red LED blinking slowly	Low input voltage	Recharge the battery. Check the connections and cable.
No output voltage, previous solutions are not working	Inverter switched off No power to inverter	Turn the inverter ON. Check wiring to the inverter.
	Car lighter fuse open	Replace the fuse.



Problem and Symptoms	Possible Cause	Solution
	Internal fuse open	Have a qualified service technician check and replace.
	Reverse DC polarity	Have a qualified service technician check and replace fuse. Observe correct polarity.
No output voltage, overload indicator ON	Short circuit or wiring error	Check the AC wiring for a short circuit or improper polarity (hot and neutral reversed).

8.0 Maintenance

Clean the exterior of the unit periodically with a damp cloth to prevent accumulation of dust and dirt and check all connections between the battery and inverter.

9.0 Disclaimer of Liability & Warranty

Go Power!™ provides the following limited 2 year warranty (“Warranty”) coverage as applicable to the purchaser (“Purchaser”) of the Go Power!™ branded product (“Product”) directly from Go Power!™. The following constitutes the terms and conditions of that limited warranty.

9.1.1 What the Go Power! Warranty Covers and for How Long

Subject to the exclusions and claim procedure set out below, Go Power!™ warrants for a period of 2 years from the date of purchase at the point-of-sale to the original end-user customer (“Sale Date”), that the Go Power!™ Product provides coverage as follows:

For the period ending 2 years from the Sale Date, Go Power!™ will, at Go Power!™’s discretion, repair or replace the Product which fails to meet the Product Specifications due to a defect in materials or workmanship or apply credit towards the purchase of new Go Power!™ Product.

To exercise this right, the Purchaser shall ship, at its own expense, and return the Product to Go Power! according to the return instructions detailed below, and Go Power!™ will, repair or replace the Product and return it to the Purchaser free of charge, or offer credit towards the purchase of new Product.

Go Power!™ shall be entitled, at its discretion, to use new and/or reconditioned parts in performing warranty repair or providing a replacement Product. Go Power!™ also reserves the right to use parts or Product of original or improved



design in any repair or replacement. All replaced Product and/or any parts removed from repaired Products become the property of Go Power!™

If Go Power!™ chooses to repair or replace a Product, the above warranty will continue to apply and remain in effect for the balance of the warranty period calculated from the Sale Date (and not the repair or replacement date).

If Go Power!™ chooses to offer a credit towards the purchase of new Product, then the warranty in effect and applicable to the new Product shall apply to the new Product.

9.1.2 What the Go Power! Warranty Does Not Cover

Go Power!™'s Warranty does not provide coverage for the following which are expressly excluded from the above warranty:

- Failure due to normal wear and tear of the Product.
- Failure caused by separate computer software supplied with or associated with a Go Power!™ Product.
- Failure due to fire, water, neglect, improper installation, generalized corrosion, biological infestations, or input voltages that create operating conditions beyond the maximum or minimum listed in the Go Power!™ specifications including lightning strikes.
- Products which have been altered other than by Go Power!™ or authorized by Go Power!™
- Products that have their original identification (trademark, serial number) markings defaced altered or removed.
- Products utilized as a component part of a product expressly warranted by another manufacturer.
- Operation or storage of the Product outside the specification ranges, and/or alteration or deployment of Go Power!™ Products other than in accordance with any published or provided user, storage or maintenance requirements.
- Failure that is in any way attributable to the improper use, storage, maintenance, installation or placement of the Go Power!™ Product.
- Failure caused by abuse, misuse, abnormal use, or use in violation of any applicable standard, code or instructions for use in installations, including, but not limited to, those contained in the National Electrical Code, the Standards for Safety of Underwriters Laboratory, Inc., Standards for the International Electrotechnical Commission, Standards for the American National Standards Institute, or the Canadian Standards Association.
- Failure due to acts of God.



9.1.3 Restrictions and Limitations to Go Power!'s Warranty

- This Warranty is not transferable and only applies to the Purchaser.
- Go Power!™ does not warrant the results obtained from the implementation of recommendations made by Go Power!™ or its authorized distributors concerning the use, design or application of Go Power! Products
- The end-user who purchases the Product assumes all responsibility and liability for loss or damage resulting from the handling or use of Go Power!™ Products.
- Go Power!™'s liability on any claim, whether in warranty, contract, negligence, or any other legal theory, for loss, damage or injury arising directly or indirectly from or in relation to the use of the Go Power!™ Product shall in no event exceed the purchase price of the Go Power!™ Product which gave rise to the claim. IN NO EVENT SHALL GO POWER!™ BE LIABLE FOR PUNITIVE, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHETHER FORSEEABLE OR NOT INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS OR REVENUES, LOSS OF USE OF GOODS, OR LOSS OF BARGAIN.
- The Warranty set out above is the sole warranty granted by Go Power!™ with respect to the Product. No oral understanding, representations or warranties shall be of any effect and Go Power!™ makes no further warranties, express or implied concerning the Go Power!™ Products other than the Warranty set out above. The Buyer, where permitted by applicable law, hereby expressly waives any statutory or implied warranty that the Go Power!™ Product shall be merchantable or fit for a particular purpose.

9.2 Warranty Return Procedure

Visit www.gpelectric.com to read the "frequently asked questions" section of our website to troubleshoot the problem. If trouble persists:

1. Call your Go Power!™ Technical Support team (1-866-247-6527).
2. Return defective product to place of purchase.

9.2.1 End Users

Contact your sales representative or Dealer and discuss the problem. Often the sales representative can troubleshoot common scenarios. If applicable, warranty will be handled between the End User and the Dealer. Go Power!™ will only accept returned items from an End User as a last resort. If you are unable to contact the Dealer, or the Dealer refuses to provide service, please contact Go Power!™ directly.

9.2.2 Dealers

Dealers will handle warranty either through their supplier or Go Power!™ if they qualify as a Purchaser.



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9.2.3 Units bought directly from Go Power!

The Purchaser will return the product, freight prepaid, to Go Power!™ You must obtain a Return Material Authorization (RMA) number from Go Power!™ before returning a product. The RMA number MUST be clearly indicated on the outside of the box.

Items received without an RMA number will be refused.

9.2.3 Additional Information

Unless approved by Go Power!™ management, all product shipped collect to Go Power!™ will be refused.

Test items or items that are not under warranty, or units that are not defective, will be charged a minimum bench charge of (\$50.00 US) plus taxes and shipping.

A 15% restocking charge will be applied on goods returned and accepted as “new” stock.

9.4 Out of Warranty Items

Go Power!™ electronic products are non-repairable, Go Power!! does not perform repairs on its products nor does it contract out those repairs to a third party. Go Power!™ does not supply schematics or replacement parts for any of its electronic products.



Pure Sine Wave Inverter
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