

XP150i CUP POWER INVERTER

OWNER'S MANUAL




WHISTLER

If you have questions concerning the operation of this Whistler product please call customer service:

1-800-531-0004

Hours:

Monday - Friday

8:00 am - 5:00 pm CT

or visit www.whistlergroup.com

Please keep your purchase receipt in a safe place. You may register your product online at www.whistlergroup.com. If the unit is returned without a dated proof of purchase, an out of warranty service charge applies. **Note:** Your warranty period begins at the time of purchase. *The warranty is validated only by **your** receipt.*

INTRODUCTION

Dear Whistler Customer,

For many of us, a vehicle is more than just transportation. It can be a mobile office, communications or entertainment center, or simply an expression of our personality.

Whistler products are designed to make the time you spend in your vehicle more productive, more fulfilling, safer, or just simply more fun. Our mission is to provide products that improve your driving experience.

Whistler offers a complete line of DC to AC inverters ranging in capacity from 100 Watts to 3000 Watts. These inverters offer advanced technology, dependable operation and will provide years of reliable service when used in accordance with our operating instructions.

Your new Whistler power inverter allows you to run some AC appliances right from your car, boat or RV. They're great for weekend use and life on the road. They're also great for power outages!

To fully acquaint yourself with the operation of this inverter we recommend reading this entire manual.

Sincerely,

THE WHISTLER GROUP, INC

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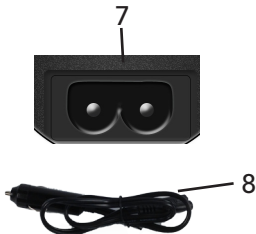
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FEATURES DESCRIPTION

WHISTLER inverters convert low voltage, direct current (DC) to 115 volt alternating household current (AC). The AC output is called "modified sine wave". See "**Operating Principles**" section for more information.

Depending on the model and its rated capacity, WHISTLER inverters draw power either from standard 12 volt automobile and marine batteries or from portable high power 12 volt sources.

1. AC Output Socket
2. Power Switch
3. USB Power Port
4. 12V AUX Socket
5. Power On LED
6. High Speed Cooling Fan
7. Power Cord Jack
8. Removable Power Port Power Cord



IMPORTANT INFORMATION

This manual will provide you with directions for the safe and efficient operation of your WHISTLER inverter. Read the manual carefully before using your new WHISTLER inverter and keep the manual on file for future reference.

NOTE: Your WHISTLER inverter is designed to operate from a 12 volt power source only. Never attempt to connect your Whistler inverter to any other power source, including any AC power source.

- The length of the supplied cables is matched for the current needed by the inverter. Making this cable longer will make the inverter less efficient and may cause the cables to heat up.
- Do not attempt to lengthen the supplied power cable.
- 115 volts can be lethal. Improper use of your WHISTLER inverter may result in property damage, personal injury or loss of life.
- **Not recommended for use with medical equipment. Check with the appliance manufacturer for compatibility with modified sine wave inverters.** Some appliances may not work well, not at all or be damaged. For more information on compatibility issues, please visit our inverter FAQ page at www.whistlergroup.com

INVERTER BASICS

Getting Started

Power equipment and appliances which operate with motors or tubes require an initial surge of power to get them up and running. This power surge is referred to as the "starting load" or "peak load." (By comparison, electrical devices such as standard light bulbs do not require a large starting load). Once the equipment or appliance has been powered up, it settles down to a slower pace and requires far less electrical power to operate. This lower power requirement is referred to as the "continuous load." In order to ensure that the capacity of your WHISTLER inverter is sufficient to meet the required start up load, you must first determine the power consumption of the equipment or appliance you plan to operate.

Power consumption is rated either in wattage or in amperes, and information regarding the required "watts" or "amps" generally is stamped or printed on most appliances and equipment. If this information is not indicated on the appliance or equipment, check the owner's manual. **Contact the appliance or equipment manufacturer to determine if the device you are using (TV's, battery re-charger, computer, medical equipment, etc.) is compatible with a modified sine wave.**

If the power consumption is rated in amps, multiply the number of amps by 115 (AC voltage) to determine the comparable wattage rating. Induction motors, as well as some televisions, may require 2 to 6 times their wattage rating for startup. For further information on the fundamental operating principles of WHISTLER inverters and related technical data, see "**Operating Principles.**"

Don't Push It.

Although your WHISTLER inverter has the capacity to provide power output (excess current) equal to approximately two times its rated wattage capacity for a very brief period, it is designed to operate equipment and appliances with start up load wattage ratings no higher than its own maximum continuous wattage rating.

INVERTER BASICS

For example, the XP150i watt model has a maximum continuous rating of 150 watts. Although this model has the capacity to briefly provide more than its continuous power (that is, excess current), it is designed to operate equipment and appliances with start up load requirements of 150 watts or less.

Consequently, if the start up load rating of your equipment or appliance is slightly higher than the maximum continuous rating of the inverter, the inverter will attempt to start loads above the continuous rating for several seconds.

The inverter is designed to shut down automatically in the event of a power overload. Testing appliances and equipment with start up load ratings comparable to your inverter wattage rating will not damage the inverter. However, make sure the appliance you are testing is compatible with modified sine wave inverters. See **IMPORTANT INFORMATION** section for more information.

If all connections have been properly made, turn the inverter rocker switch ON (I), OFF (O) and ON (I) again in quick succession. If this procedure is unsuccessful, it is likely that the inverter does not have the required start up capacity to operate the equipment or appliance in question.

NOTE:

- Most heat generating appliances require start up loads in excess of 1000 watts and this inverter will not operate such appliances as coffee makers, irons, hair dryers or heaters.
- The inverter's USB Port does not support data communications.

OPERATION

Making the Connection.

This inverter connects using the supplied removable power cord into a 12V AUX lighter socket plug.

1. Make certain that the inverter rocker switch is in the center OFF (O) position.
2. Connect the plug of the power cord to mating power cord jack at the rear of the inverter.
3. Remove the lighter and push the adapter plug firmly into the lighter socket. (Make certain both the socket and adapter plugs are clean.)

NOTE:

- Loose connections can result in a severe decrease in voltage which may cause damage to the wires and insulation.
 - Failure to heed this warning could result in fire or explosion.
4. Turn the inverter rocker switch to the Inv+USB (I) position. The LED Indicator Light should glow GREEN confirming that there is power running to the inverter.
 5. Turn the inverter rocker switch to the center OFF (O) position. (The GREEN LED Power Indicator light may “blink” briefly. This is normal).
 6. Confirm that the equipment or appliance to be operated is turned off. Plug the equipment or appliance into the AC receptacle on the top of the the inverter.
 7. Turn the inverter to the Inv+USB (I) position. Turn on the equipment or appliance.
 8. The USB can be powered independently of the inverter by turning the rocker switch to the USB (II) position.

NOTE: Indicator LED will not illuminate in this position.

OPERATION

- The use of an extension cord from the inverter to the appliance or equipment being operated will decrease the power being delivered to the load. For best operating results, the extension cord should be no more than 50 feet long.
- Check frequently to ensure that the input and output connections are secure. Loose connections may damage the inverter or the power source or may generate excessive heat.

Important Information on Battery Chargers

Using your inverter with battery chargers for power tools, flashlights, video cameras and laptop computers may cause damage to the inverter or the charging unit. Check with the appliance manufacturer for compatibility with modified sine wave inverters if you're unsure.

Although we advise against it, if you attempt to use a charging unit, monitor the temperature of the charging unit for approximately 10 minutes. If the charging unit becomes unusually warm, disconnect it from the inverter immediately.

Don't Blow A Fuse.

This inverter is equipped with an internal spade type fuse(s). With reasonable care, it should not be necessary to replace the fuse(s) in your inverter.

Most blown fuses are the result of reverse polarity or a short circuit within the appliance or equipment being operated. If the fuse(s) does blow, turn off and disconnect the appliance or equipment from the inverter immediately, repair the related problem and replace the fuse(s). The internal fuses are replaceable, however only electronically knowledgeable people should attempt fuse replacement.

OPERATION

NOTE:

- Make certain to correct the source of the overload which caused the blown fuse before turning your inverter back ON (I).

The Power Source.

When the engine is off, most batteries will provide an ample power supply to the inverter for one to two hours. The actual length of time is a function of several variables including the age and condition of the battery and the power demand being placed on it by the equipment being operated with the inverter.

If you are using the inverter while the engine is off, we recommend you start the engine every hour and let it run for at least 10 minutes to recharge the battery. We also recommend that the device plugged into the inverter be turned off before turning over the engine.

Although it is not necessary to disconnect the inverter when turning over the engine, the inverter may momentarily cease operation as the battery voltage decreases. When the inverter is not supplying power, and is turned on, it draws very low amperage from the battery (<0.50 A).

Automatic Shut Down & Related Safety Features.

This inverter has a unique LED indicator warning light system which operates in conjunction with the **automatic shut down feature**. These indicator lights operate as follows:

GREEN LED: System ready.

RED LED: System overload/automatic shut down.

ADDITIONAL FEATURES

Your inverter will shut down automatically when any of the following problems occur:

1. The power input from the battery drops below 10 volts.
2. The power input from the battery exceeds 15 volts.
3. The continuous draw of the appliance or equipment being operated exceeds the design parameters of the inverter.

This inverter is also equipped with the following additional safety features:

1. **Thermal Cut Off:** Automatic shut down if internal temperature exceeds safe design parameters.
2. **Low Battery Voltage Alarm/Shutdown Protection:**
 - a) When the input voltage from the 12 volt power source drops below 11 volts, the LED turns orange. This is the low battery voltage alarm.
 - b) The inverter will automatically shut down when the input voltage drops below 10.5 volts. This protects the battery from completely draining.

In the event of automatic shut down, turn the inverter rocker switch to the OFF (O) position until the source of the related problem has been identified and resolved.

Some Powerful Advice.

When driving with the inverter in operation, make certain that neither the inverter nor the power cords will impede safe operation of your vehicle. Keep the unit and all cords clear of the steering wheel, gas, brake and clutch pedals and gear shift. To maintain your inverter in proper working condition, note the following important safety precautions:

CARE AND MAINTENANCE

- **MOISTURE.** Keep the inverter dry. Do not expose it to moisture. Do not operate the inverter if you, the inverter, the device being operated or any other surfaces that may come in contact with any power sources are wet. Water and many other liquids can conduct electricity which may lead to serious injury or death.
- **HEAT.** For peak efficiency, the ambient air temperature should be between 50° and 80° F. Avoid placing the inverter on or near heating vents, radiators or other sources of heat. Do not place the inverter in direct sunlight.
- **VENTILATION.** In order to disperse the heat generated while the inverter is in operation, keep it well ventilated. While in use, maintain several inches of clearance around the top and sides of the inverter.
- **FUMES & GASES.** Avoid using the inverter near flammable materials. Do not place the inverter in areas such as battery compartments. Where fumes or gases may accumulate.

In Review.

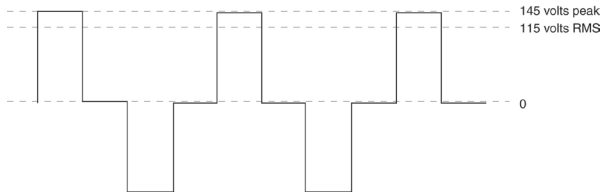
- Never attempt to operate your WHISTLER inverter from any power source other than a 12 volt battery or group of batteries that total 12 volts.

OPERATING PRINCIPLES

For You Technical Types.

WHISTLER inverters work in two stages. During the first stage, the DC to DC converter increases the DC input voltage from the power source (e.g. a 12 volt battery) to 145 volts DC. In the second stage, the high voltage DC is converted to 115 volts (60 Hz AC) using advanced power MOSFET transistors in a full bridge configuration. The result is excellent overload capability and the capacity to operate difficult reactive loads. The output waveform resulting from these conversions is a "quasi-sine wave" or a "modified sine wave" as shown on below.

This stepped waveform is similar to the power generated by utilities and has a broad range of applications.



The modified sine wave produced by the Inverter

The modified sine wave produced by your Whistler inverter has a root mean square (RMS) voltage of 115 volts.

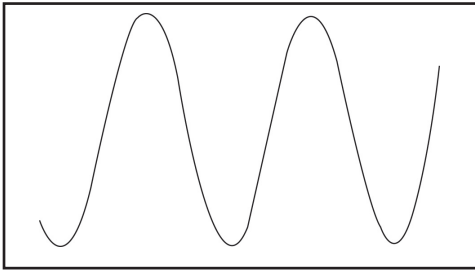
The majority of AC voltmeters measure RMS voltage and assume that the measured waveform will be a pure sine wave.

OPERATING PRINCIPLES

Consequently, these meters will not read the RMS modified sine wave voltage correctly and, when measuring your WHISTLER inverter output, the meters will read about 20 to 30 volts too low.

To accurately measure the output voltage of your inverter, use a true RMS reading voltmeter such as a Fluke 87, Fluke 8060A, Beckman 4410, Triplet 4200 or any multimeter identified as "True RMS."

For more information on inverters see our Inverter FAQ page.



A true sine wave typical of home AC outlet.

OPERATION SUMMARY

- Make certain the rated power consumption of the appliance or equipment you wish to operate is compatible with the capacity of your inverter.
- If the rated power consumption of the equipment is in the range of the maximum specified wattage of your converter, test the inverter to ensure that it will operate properly.
- This Inverter is not designed to operate heat generating appliances such as coffee makers, irons, hair dryers, toasters and heaters.
- Use only fuses which conform with the design specifications outlined in this manual.
- When operating the inverter with the engine off, start the engine every hour and let it run for at least 10 minutes to recharge the battery.
- In the event of automatic shut down, turn the inverter OFF (O) immediately. Do not restart the inverter until the source of the problem has been identified and corrected.
- To avoid battery drain, always disconnect the inverter when not in use.
- Do not expose the inverter to moisture.
- Avoid placing the inverter near sources of heat or in direct sunlight.
- When in use, make certain that the inverter is properly ventilated.
- Do not use the inverter near flammable materials, fumes or gases.
- Always operate the inverter in accordance with the instructions in this manual. Failure to do so may result in property damage, personal injury or loss of life.

TROUBLESHOOTING

Please visit our Inverter FAQ page on our website (www.whistlergroup.com), for more troubleshooting information and FYI topics.

PROBLEM: TV Interference

Problem	Solution
Electrical interference from inverter.	Add a Ferrite data line filter on to the TV power cord. This filter is available at electronic part stores.

PROBLEM: Low or No Output Voltage

Problem	Solution
Using incorrect type of voltmeter to test output voltage.	Use a true RMS reading meter. See "For You Technical Types" Section of this manual.

PROBLEM: Low Battery Alarm On All The Time

Problem	Solution
Input voltage below 11 volts.	Keep input voltage above 11 volts to maintain regulation.
Poor or weak battery condition.	Replace battery.

Red LED On

Problem	Solution
Equipment has a high start up surge.	Turn inverter power switch center OFF (O) and then Inv+USB (I) again until the inverter powers your appliance. Repeat as necessary to get your appliance "started".
Battery voltage below 10 volts.	Recharge or replace battery.
Inverter is too hot (thermal shutdown mode).	Allow inverter to cool. Check for adequate ventilation. Reduce the load on the inverter to load on the inverter to output.

SPECIFICATIONS

WHISTLER XP150i INVERTER SPECIFICATIONS

Maximum Continuous Power	150 Watts
Maximum Surge (Peak Power)	300 Watts*
No Load Current Draw	≤0.4 A
Waveform	Modified Sine Wave
Input Voltage	11–15.5 +/- .5V
AC Receptacle	North American
12V Receptacle	Automotive Style Power Port
Fuse Inv/USB	One 20 Amp (Spade Type-Internal)
Fuse 12V Aux Port	One 15 Amp (Spade Type-Internal)
USB	5V 2.1A Max
Approximate Dimensions	5.25" x 2.65" (Dia.)
Approximate Weight	11oz.

*Under certain conditions your inverter may provide up to 2 times the continuous rating for a brief period.

WARRANTY

Consumer Warranty

This Whistler product is warranted to the original purchaser for a period of one (1) year from the date of original purchase against all defects in materials and workmanship, when purchased from an authorized Whistler retailer. **This limited warranty is void if the unit is abused, misused, modified, installed improperly, or if the housing and/or serial numbers have been removed.** There are no express warranties covering this product other than those set forth in this warranty. All express or implied warranties for this product are limited to one (1) year. *Whistler is not liable for damages arising from the use, misuse, or operation of this product including but not limited to loss of time, inconvenience, loss of use of your product or property damage caused by your product or its failure to work, or any other incidental or consequential damages including personal injury.*

DO NOT RETURN ITEM TO STORE WHERE PURCHASED.
FOR WARRANTY INFORMATION, CONTACT WHISTLER
CUSTOMER SERVICE AT 1-800-531-0004.

Representatives are available to answer your questions
Monday – Friday
from 8:00 a.m. to 5:00 p.m. CT

Service Under Warranty

During the warranty period, defective units will be repaired or replaced (with the same or a comparable model), at Whistler's option, without charge to the purchaser when returned prepaid, with dated proof of purchase to the address below. Units returned without dated proof of purchase will be considered out of warranty and therefore are not covered by the described Limited Warranty. (Refer to Service Out of Warranty section.) Due to the specialized equipment necessary for testing Whistler products, there are no authorized service centers other than Whistler. When returning a unit for service under warranty, please follow these instructions:

WARRANTY

1. Ship the unit in the original carton or in a suitable sturdy equivalent, fully insured, with return receipt requested to:

Whistler Repair Dept.
1412 South 1st St.
Rogers, AR. 72756

Please allow 3 weeks turnaround time.

IMPORTANT: Whistler will not assume responsibility for loss or damage incurred in shipping. Therefore, please ship your unit insured with return receipt requested. **CODs will not be accepted!**

2. Include with your unit the following information, clearly printed:
 - Your name and physical street address for shipping (no PO Boxes), a daytime telephone number, and an email address (if applicable).
 - A detailed description of the problem (e.g., "device will not Power ON").
 - A copy of your dated proof of purchase or bill of sale.
3. Be certain your unit is returned with its serial number. Units without serial numbers are not covered under warranty.

IMPORTANT: To validate that your unit is within the warranty period, make sure you keep a copy of your dated proof of purchase. For warranty verification purposes, a copy of your dated store receipt must accompany any Whistler product sent in for warranty work.

WARRANTY

Service Out Of Warranty

Units will be repaired at “out of warranty” service rates when:

- The unit’s original warranty has expired.
- A dated proof of purchase is not supplied.
- The unit has been returned without its serial number.
- The unit has been misused, abused, modified, installed improperly, or had its housing removed.

The minimum out of warranty service fee for your Whistler XP150i is \$15.00 (U.S.). If you require out of warranty service, please return your unit as outlined in the section “Service Under Warranty” along with a cashier’s check or money order in the amount of \$15.00. Payment may also be made by MasterCard, VISA or American Express. **Personal checks are not accepted.**

In the event repairs cannot be covered by the minimum service fee, you will be contacted by a Whistler technical service specialist who will outline options available to you.

IMPORTANT: When returning your unit for service, be certain to include a daytime telephone number and an email address (if applicable).

Customer Service

If you have questions concerning the operation of your Whistler product, or require service during or after the warranty period, please call Customer Service at **1-800-531-0004**.

Representatives are available to answer your questions Monday - Friday from 8:00 a.m. to 5:00 p.m. (CT) or visit the F.A.Q.’s at www.whistlergroup.com.

CORPORATE HEADQUARTERS

1716 SW Commerce Dr. Ste. 8

PO Box 1760

Bentonville, AR 72712

Toll Free (800) 531-0004

TEL (479) 273-6012

FX (479) 273-2927

www.whistlergroup.com

CUSTOMER RETURN CENTER

1412 South 1st St.

Rogers, AR 72756

Customer Service Tel (800) 531-0004

Email: info@whistlergroup.com

P/N 401561

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