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200 International Drive, Suite 195  
Portsmouth, NH 03801

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02/05

Heavy Duty Marine / Industrial Grade

# TruePower Inverter Series

600 - 1200 Watt Mid Power Models

Owner Manual & Installation Guide



| Model     | Part Number | Description                                      |
|-----------|-------------|--|
| 600 Watt  | 05060       | 12 VDC Input / 600 Watt 110 VAC Output Inverter  |
| 800 Watt  | 05080       | 12 VDC Input / 800 Watt 110 VAC Output Inverter  |
| 1000 Watt | 05100       | 12 VDC Input / 1000 Watt 110 VAC Output Inverter |
| 1200 Watt | 05120       | 12 VDC Input / 1200 Watt 110 VAC Output Inverter |

**Your Satisfaction is Important to us. Do Not return this Product to the Retailer or Dealer for any service or warranty requirements. Please call our Customer Care Department line at 1-800-824-0524 from 8 am to 5 pm (Eastern Time) for warranty, service or installation assistance you may need. Thank you.**

**IMPORTANT SAFETY NOTICE - SAVE THESE INSTRUCTIONS**

Please save and read all safety, operating and installation instructions before installing or applying DC power to your TruePower Inverter.

## ► Notes

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## ► Introduction

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Thank you from all of us at On Board Solutions, A ProMariner Company. Congratulations on your recent purchase of a TruePower Inverter!

Leading the Marine industry in Power Conversion for over 30 years, ProMariner's On Board Solutions division has designed a complete line of Power Inverters ranging from 200 to 3,000 watts specifically for Marine / Industrial use. TruePower Inverters will convert your OnBoard 12Vdc Battery power to 110Vac Household Power to run TV's, Laptops, Gaming Systems, power tools, hairdryers, coffee makers, blender's, large appliances and more.

**Please save and read this manual carefully and fully understand the safety instructions before installing your new TruePower Inverter.**

## ► General Safety Instructions

Before installing and using your new inverter, read all appropriate sections of this guide and any cautionary markings on the inverter, batteries and on your appliances.

- 1. CAUTION:** Do not operate the inverter if the carton or unit has significant damage from being dropped or crushed, received a direct hit of force or is otherwise damaged.
- 2. CAUTION:** Do not dismantle the inverter. Call the factory directly when service or repair is required. Incorrect assembly may result in risk of electrical shock or fire.
- 3. CAUTION:** To reduce the risk of electrical shock, disconnect both AC and DC power from the inverter prior to any maintenance or cleaning.
- 4. CAUTION:** Protect the inverter from rain, snow water and spray.
- 5. CAUTION:** Internal inverter components remain charged after power is disconnected.
- 6. CAUTION:** As a precaution - **Keep Children away from the inverter and its components!** The same potentially hazardous or lethal AC power that is found in a normal household 110AC power outlet can be found in the TruePower inverter.
- 7. CAUTION:** Under no circumstance should the user connect live AC (household) power to the inverter's AC receptacles. The inverter will become damaged even if it is switched off. This unit can only take 12V DC battery power and invert it to 110V AC household power. This unit is not a battery charger!
- 8. CAUTION:** For an ABYC E-11 compliant installation, this Inverter must be installed with an inline fuse in the positive (+) cable on the DC side of the inverter (between the battery and the inverter) at a distance of seven inches from the battery connection (Please see Specifications Table in this Manual for correct sizing).

## ► Personal Safety Precautions

1. Someone should be within the range of your voice or close enough to come to your aid when installing power inverters or working near lead acid batteries.
2. Wear complete eye protection and protective clothing. Avoid touching eyes while working on or with batteries. Have plenty of soap and water nearby in case of battery acid comes in contact with skin, clothing or eyes.
3. If battery acid comes in contact with skin or clothing, wash immediately with soap and water. If acid enters the eye (s) flood eye (s) with running water for at least 10 minutes and get medical attention immediately.
4. Never smoke or allow a spark or a flame in the vicinity of a battery or engine.

## ► Customer Service & Warranty

We are committed to customer satisfaction and value your business. If at any time during the warranty period you experience a problem with your new TruePower Inverter simply call us at 1-800-824-0524 during standard business hours (8:30 AM – 5 PM Eastern Time) for technical support.

### TRUEPOWER TWO YEAR LIMITED FACTORY WARRANTY

Each product is guaranteed against defects in material and workmanship to the original consumer in normal use for two full years from the date of purchase. On Board Solutions and Professional Mariner, LLC at its discretion will repair or replace free of charge any defects in material or workmanship. The following conditions apply:

- Warranty is calculated from date of manufacture if not registered within two weeks of sale.
- Warranty void if damage occurs due to negligent repairs.
- Customer is responsible for returning the product to On Board Solutions and Professional Mariner, LLC. inbound shipping costs must be prepaid.
- This warranty does not cover blemishes due to normal wear and tear or damages caused by accidents, abuse alterations or misuse.

Purchase or other acceptance of the product shall be on the condition and agreement that On Board Solutions and Professional Mariner SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. (Some states do not allow the exclusion or limitation of consequential damages, so the above limitations may not apply to you.) This warranty is made in lieu of all other obligations or liabilities on the part of Onboard Solutions and Professional Mariner. Additionally, On Board Solutions and Professional Mariner neither assumes nor authorizes any person for any obligation or liability in connection with the sale of this product.

To make a claim under warranty, call Factory Service at 1-800-824-0524. Follow the company's return policy, which will be provided by the company. On Board Solutions and Professional Mariner will make its best effort to repair or replace the product, if found to be defective within the terms of the warranty, within 30 days after return of the product to the company. On Board Solutions and Professional Mariner will ship the repaired or replaced product back to the purchaser.

The GFCI is covered by a 90 day warranty limitation, as the life of a GFCI in a harsh, humid, outdoor marine environment cannot be guaranteed. The GFCI is a standard off the shelf serviceable / replaceable component in the TruePower Inverter Series. Please contact Customer Service for additional assistance.

This warranty provides to you specific legal rights and you may also have other rights, which vary from state to state. This warranty is in lieu of all other, expressed or implied.

OBS & Professional Mariner, LLC.  
Factory Service Center  
200 International Drive, Suite 195  
Portsmouth, NH 03801  
Service Phone: 1-800-824-0524  
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Fax: (603) 433-4442

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[www.onboardsolutions.biz](http://www.onboardsolutions.biz)

► Specifications

| TruePower  | 600W                                       | 800W       | 1000W      | 1200W      |
|--|--|------------|------------|------------|
| Power (W)  | 600W                                       | 800W       | 1000W      | 1200W      |
| Continuous Power                                   | 600W                                       | 800W       | 1000W      | 1200W      |
| Surge Power  | 1200W                                      | 1600W      | 2000W      | 2400W      |
| Output Waveform                                    | Modified Sine Wave                         |            |            |            |
| AC Output Voltage                                  | 115V +/- 10%                               |            |            |            |
| AC Output Amps (up to)(continuous)                 | 5.5  | 7.3        | 9.1        | 10.9       |
| DC Input Voltage                                   | 10V to 15V                                 |            |            |            |
| DC Input Amps (up to)                              | 60A  | 80A        | 100A       | 120A       |
| Efficiency   | >85%                                       |            |            |            |
| No load Current                                    | <0.65A                                     | <0.8A      | <1.0A      | <1.0A      |
| Cooling Fan  | Yes  |            |            |            |
| Short Protection                                   | Yes  |            |            |            |
| Soft- Start  | Yes  |            |            |            |
| High Voltage Protection                            | Yes  |            |            |            |
| Low Battery Alarm (Bat' Saver)                     | 11.9VDC                                    |            |            |            |
| Low Battery Shutdown (Bat' Saver)                  | 11.5VDC                                    |            |            |            |
| Low battery Alarm                                  | 10.5VDC +/- .5VDC                          |            |            |            |
| Low Battery Shutdown                               | 10VDC +/- .5VDC                            |            |            |            |
| Reverse Polarity Protection (By Fuse)              | Yes  |            |            |            |
| Operating environment temperature                  | -15 to 50° Celsius or 5 to 122° Fahrenheit |            |            |            |
| Internal Fuse                                      | 20A * 4pcs                                 | 35A * 3pcs | 35A * 4pcs | 35A * 4pcs |
| Recommended User Supplied ABYC E-11 Compliant Fuse | 80A  | 105A       | 140A       | 140A       |

| ANL Ignition Protected Fuses for TruePower Models                          |   |          |          |           |           |
|--|---|----------|----------|-----------|-----------|
|  | Single Position ANL High Amperage Fuse Holder | 600 Watt | 800 Watt | 1000 Watt | 1200 Watt |
| ProMariner Part No. for Recommended User Supplied ABYC E-11 Compliant Fuse | 88120   | 88100    | 88100    | 88160     | 88160     |
| Amperage   | 100-425 amps                                  | 100 amp  | 100 amp  | 160 amp   | 160 amp   |

► Personal Safety Precautions Continued

5. Be extra cautious to reduce the risk of dropping a metal tool onto a battery. It may spark or short-circuit the battery or other electrical parts that may cause an explosion.
6. Remove all personal metal items such as rings, bracelets, necklaces, watches and jewelry when working near a battery. A battery can produce a short circuit high enough to weld a ring or any metal, causing serious burns.
7. Never charge or invert power from a frozen battery.

\*WARNING: Restrictions on Use- The TruePower inverter shall not be used in connection with life support systems or other medical equipment devices.

► Preparing for Installation

Read this entire installation section if you plan a hardwire installation from beginning to end.

**⚠ WARNING:** This device is not Ignition Protected  
 Avoid serious injury or death from or explosion. Do not install in compartments containing gasoline fueled engines or gasoline tank, or in areas where ignition protected equipment is required.

**⚠ WARNING:** Do not mount the inverter above or below your batteries.

**⚠ WARNING:** Electrical shock and fire hazards  
 On Board Solutions, a ProMariner Company recommends all wiring be done by qualified personnel. Disconnect all AC and DC power sources to prevent accidental shock. Disable and secure all AC and DC disconnect devices and automatic generator starting devices. It is the installer's responsibility to ensure compliance with all the applicable installation codes and regulations.

**⚠ WARNING:** Installation Precaution  
 The TruePower inverter should be mounted on a flat horizontal surface or a vertical surface with the front panel and label facing the user. In no case should the front or rear endcaps be facing in an upward or downward position. This allows proper ventilation and product safety of the unit as intended by design.

**⚠ WARNING:** Fire Hazard  
 Do not cover or obstruct the ventilation openings. Do not install this equipment in a compartment with limited airflow; Overheating may result.

## ► Preparing for Installation Continued

### ⚠ **WARNING:** Risk of Fire or Explosion

This equipment contains components that could produce arcs or sparks. To reduce the risk of fire or explosion, do not install this equipment in compartments containing batteries, flammable materials or fumes, or in a location containing gasoline-powered machinery, or joints, fittings, or other connections between components of the fuel system.

### ⚠ **WARNING: Keep Children away from the inverter and its components!**

The same potentially hazardous or lethal AC power that is found in a normal household 110AC power outlet can be found in the TruePower inverter.

⚠ **WARNING:** Low Voltage - Electrical burn and spark hazard.  
Disconnect battery power before servicing.

### ⚠ **WARNING:** Restrictions on Use

The TruePower inverter shall not be used in connection with life support systems or other medical equipment or devices.

### Installation Recommendations & Requirements include the following:

American Boat and Yacht Council (ABYC)  
The Canadian Electrical Code (CEC)  
Canadian Standards Association (CSA)  
The U.S. National Electrical Code (NEC)  
RV Industry Association (RVIA)

## ► Guide to Operation

### General Advisory

Install your TruePower Inverter to the guidelines recommended in this manual. The TruePower Inverter is designed to meet UL 458, CE and ABYC standards.

### General Operation

The TruePower Inverters series are modified sine wave inverters which convert 12 volt direct-current (DC) power from your batteries to 120 volts alternating current (AC) power. The inverter allows you to have AC power when and where you need it. The TruePower Inverter comes equipped with numerous protection features to provide you safe and worry-free operation. Please see the following sections of the manual for Inverter Features, Installation instructions, Testing instructions, Operation and Troubleshooting.

### Power tool operates at incorrect speed

#### Possible Cause:

- Caused by the purely inductive load

#### Solution:

- Operate a small lamp or a similar non-inductive load at the same time as the tool.

### Note about Modified Sine Wave Inverters

A modified sine wave inverter has a waveform more like a square wave, but with an extra step or so. A modified sine wave inverter will work fine with most equipment, although the efficiency or power will be reduced with some.

Motors, such as refrigerator motor, pumps, fans etc will use more power from the inverter due to the fact that a modified sine wave has a lower efficiency than that of pure sine wave. Most motors will use about 20% more power.

Some fluorescent lights may not operate quite as bright, or may buzz.

Electronic timers and/or digital clocks will often not operate correctly. Many appliances get their timing from the line power, and because the timing of a modified sine wave signal may be slightly different than that of a pure sine wave, clocks and timers may run faster or not work at all.

*Note: Some stereo systems and radios may emit a buzzing sound from their speakers when operated from the inverter. This buzzing occurs because the radio or electronic device does not filter the modified sine wave produced by the inverter adequately.*

Television interference may occur with some TV signals, even though this inverter is designed to minimize such interference. If a disturbance occurs in a weak TV signal, you may try the following to correct the problem:

- Place the TruePower inverter far away as possible from the television, the antenna cables and the antenna as well. Use an extension cable from the inverter to the TV if necessary.

- Make sure the TV antenna provides a snow free signal when operated on a source other than the inverter. Additionally, we recommend the use of a high quality, shielded antenna cable.

- Coil the TV power cord as well as the input power cables running from the battery to the inverter.

- Attach an AC interference filter or similar filter product between the inverter and televisions power cord. This type of filter is available at most electronic supply stores.

- Try a different Television set as different models and manufacturers vary in their vulnerability to interference.

**Fan does not turn on.**

**Possible Cause:**

- The power rating of the appliance may be too low or the ambient temperature is too cool.

**Solution:**

- No action. The fan will run at full speed when the inverter is powering a higher rated appliance.

**Fan runs all the time.**

**Possible Cause:**

- The power rating of the appliance is too high.

**Solution:**

- No action. The fan will run at full speed when the inverter is powering a higher rated appliance.

**Possible Cause:**

- The ambient temperature is high.

**Solution:**

- No action. The fan will run at a higher ambient temperature to keep the inverter cool.

**Low Battery alarm sounds continuously**

**Possible Cause:**

- Bad wiring or connection

**Solution:**

- Tighten and clean all DC connections

**Power tool will not start**

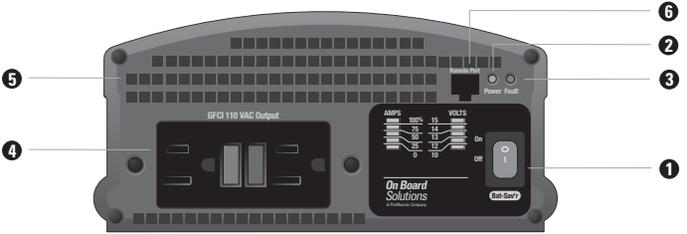
**Possible Cause:**

- Large start-up (surge) current demand.

**Solution:**

- If power tool will not start, then proper sized inverter should be used.

TruePower Overview



The above picture outlines the front of the TruePower Inverter with bullets pointing out digital bar graph display, on/off and bat' saver, led locations etc. Please Reference Table below for features:

1. **ON/Off Switch** turns the inverter to ON, OFF or to Bat' Saver mode
2. **Power light** illuminates when inverter is on.
3. **Fault Light** illuminates Red for fault conditions such as over temperature, output overload, or battery low voltage.
4. **Two GFCI Protected AC Outputs** to power connected appliances, Reset and Test monthly capabilities.
5. **Ventilation Openings** provide air circulation for peak performance. (front and rear panel)
6. **Remote Port** for optional simple remote with on / off switch and power and fault led



The above picture outlines the back of the TruePower Inverter with bullets pointing out DC connections, fuse holder locations etc. The Table below references the above numbered features of the back panel

7. **DC Input Cable** (Positive +)
8. **DC Input Cable** (Negative -)
9. **Fan Housings**
10. **Ground Stud**
11. **Mounting flanges** (Side)
12. **Tech Spec Label**

## ► Inverter Features

The TruePower inverter comes standard with a Ground Fault Circuit Interrupter (GFCI) protected Dual AC outlet which can protect the user against hazardous electrical shock that could be caused by dampness, water spray, or worn cables.

**Bat' Saver**- mode allows the user to protect from draining down the entire power of the engine start battery, and shuts the inverter off when the battery reaches a threshold of 11.7 volts allowing you to still start your boat or vehicle.

**Soft Start, Noise Filtered Technology**- progressively increases the output voltage to start heavy loads, with minimal or no interference.

**Optional Standard Function Remote**- can be purchased as an accessory and may be plugged into the remote port for the 600w thru 1200w models.

### TruePower performance features include:

- Internal Conformal Coating for Anti-Corrosion
- Soft Start and Noise Filtered Technology
- Bat' Saver Mode – 200 to 1200 watt Models
- True Rated Continuous Power
- Hi-Surge Ratings for Demanding Loads
- Heavy Duty Marine/Industrial Construction
- Constructed to UL 458
- Meets the Requirements of ABYC E-11 Marine
- Highly Visible Power & Fault LED Indicators

### TruePower Inverters are protected by a variety of features including:

- GFCI AC Outlet Safety Protected
- Input Polarity Protection
- Low Battery Alarm
- Low Battery Shutdown
- Overload Protection
- Output Short Circuit Protection
- Thermal Protection
- Over Voltage (15 VDC) Protection

*Note: These inverters may not be suitable for use with some fluorescent lighting, halogen lights or other inductive loads. If you wish to run such an item, plug it in to one of the inverter outlets and plug in a small non-inductive load bearing item such as a low wattage light bulb into the other outlet.*

### No AC output voltage. Red Fault LED light is illuminated.

#### Possible Cause:

- Inverter may be overloaded.

#### Solution:

- Disconnect all appliances connected to the inverter and reset the inverter by turning the ON/Off switch to Off then back to ON.

#### Possible Cause:

- Battery voltage may be too high.

#### Solution:

- The inverter will restart if the battery voltage drops below 15.5 volts DC.

#### Possible Cause:

- Battery voltage may be too low.

#### Solution:

- Battery voltage becoming low, recharge battery and resume inverting power.

#### Possible Cause:

- Over temperature.

#### Solution:

- Allow the inverter to cool down. The inverter will start automatically.

#### Possible Cause:

- Unit may be defective

#### Solution:

- Call Factory Service 800 number.

### No AC output voltage. NO Lights are illuminated.

#### Possible Cause:

- Battery voltage is too low.

#### Solution:

- Recharge the batteries. Restart the inverter with recharged batteries.

#### Possible Cause:

- Poor DC wiring.

#### Solution:

- Turn the inverter to Off. Disconnect the DC wiring. Use proper wiring and ensure all connections are secure.

## ▶ Troubleshooting

This section is designed to accommodate you in identifying and troubleshooting common problems that may result with an inverter. Review this section before contacting customer service. If you can not resolve the problem, record the data of the instance based on information provided here with in this manual.

This troubleshooting section will aid you in identifying the source of common problems you may encounter. If you are unable to resolve the problem from the troubleshooting reference table, contact customer service.

### No AC output voltage. No indicator lights are illuminated.

**Possible Cause:**

- The switch is in Off position.

**Solution:**

- Turn the ON/Off switch to the ON position.

**Possible Cause:**

- No input power to the inverter.

**Solution:**

- Check the DC wiring to the inverter for loose connections or frayed wiring.

**Possible Cause:**

- DC fuse is blown.

**Solution:**

- Check user installed ABYC compliant fuse.
- Have a qualified service technician check and replace internal fuse.

### No AC output voltage. Inverter light is illuminated.

**Possible Cause:**

- Circuit breaker has tripped.

**Solution:**

- Disconnect all appliances to reduce the overload, check the AC wiring, and reset the breaker by turning the ON/Off switch to Off and then back to ON.

**Possible Cause:**

- GFCI has tripped.

**Solution:**

- Clear the ground fault, and reset the GFCI by pressing the reset on the GFCI button.

## ▶ Mounting your Inverter

**IMPORTANT:** ALWAYS PLACE THE INVERTER IN AN ENVIRONMENT WHICH IS:

- (A) WELL VENTILATED
- (B) NOT EXPOSED TO DIRECT SUNLIGHT OR HEAT SOURCE
- (C) OUT OF REACH FROM CHILDREN
- (D) AWAY FROM WATER / MOISTURE, OIL OR GREASE
- (E) AWAY FROM ANY FLAMMABLE SUBSTANCE
- (F) DO NOT INSTALL DIRECTLY ABOVE OR BELOW BATTERIES

**Fuses:**

As stated in this manual, for an ABYC E-11 compliant installation, this Inverter must be installed with an inline fuse in the positive (+) cable on the DC side of the inverter (between the battery and the inverter) at a distance of seven inches from the battery connection (Please see Specifications Table in this Manual for correct sizing).

If this external fuse blows, or if the breaker trips on the larger models, there is a short or overload in the DC wiring. Find and fix the problem before replacing the fuses or resetting the breaker. After replacing the fuse, reconnect the inverter.

In addition to the DC inline fuse, the TruePower inverter is protected by internal fuses. The external Fuse provided by the user is to protect installation wiring.

**To mount the TruePower Inverter:**

1. Turn the On/Off switch on the front panel of the inverter to Off position.
2. Select an appropriate mounting location and orientation.
3. Hold the inverter against the mounting surface, mark the position of the mounting screws, and then remove the inverter.
4. Drill pilot holes for the four mounting fasteners ( Use caution prior to drilling or cutting to ensure proper clearance from existing wiring and hardware).
5. Fasten the inverter to the mounting surface with four hardware fasteners.

*Note: For the best load starting performance, the DC cables should be short and large as possible. A solid, low resistance connection to the DC power source is important for proper operation of the TruePower Inverter. Using a smaller cable may cause the inverter to shut down under a heavy load.*

*Note: A ground stud can be found on the rear panel of the TruePower inverter as illustrated in "TruePower Overview" earlier in this manual. The ground stud must be connected to*

## ▶ Mounting your Inverter Continued

*a grounding point, which will vary depending on where the TruePower inverter is installed. We recommend an #8 gauge AWG or larger copper wire. In a vehicle, please secure a ground wire from this stud to the chassis of your vehicle, keeping the distance of the ground as short as possible. In a boat, connect to the boat's grounding system. In a fixed location connect the inverter's ground stud to earth by connecting to a ground rod (a metal rod pounded into the earth) or other proper service entrance ground.*

## ▶ Battery Operating Time

Operating time of your inverter is determined by the size and type of battery you use, but more specifically it is determined by how much power you will draw. Follow the below steps to calculate roughly the battery ampere-hour capacity you may require.

1. Establish how many watts each piece of equipment you will use consumes. This usually can be found on the label of your power products. If only current draw is given, you can estimate the watt consumption by multiplying current draw by 115.
2. Estimate the time in hours you will be running each power product between charging your battery source
3. Calculate the total watt hours of energy consumption (power x operating time) using the average power consumption and the total estimated running hours. (Power x Operating hours = Watt Hours)
4. Now Divide the Watt Hours by 10 to determine how many 12volt ampere-hours will be used. You need to have a battery or a bank of batteries with same ampere-hours you demand.

If the user has TruePower running off the start battery of your vehicle, we recommend the user to start the vehicles engine very 30 minutes to recharge the battery. This will help prevent any automatic shutdown of the inverter due to low battery voltage and help ensure enough battery capacity to start the vehicle's engine. The inverter's low battery alarm will sound when the battery drops to 10.5 volts and shut down at 10v. If you are using the TruePower Bat' Saver mode, the Low battery alarm will sound at 11.9 volts and shut down at 11.7v.

The TruePower inverter can be used with or without the vehicle's engine running. The inverter may not be able to operate while the engine is starting as battery voltage drops substantially during engine cranking. The best battery setup we can recommend for providing sufficient inverter capacity while protecting the engine start battery from being overdrawn is to have a separate battery for starting the vehicle and to have a deep discharge type battery or several batteries in parallel for powering the inverter if you plan on running electrical products for extended periods of time on a frequent basis.

## ▶ Operation

### Resetting the Inverter:

To reset the TruePower Inverter, turn the ON/Off switch to Off and then back to ON.

### Resetting the Ground Fault Circuit Interrupter (GFCI):

Function- The GFCI receptacle protects the receptacle output against a ground fault.

Correcting a Ground - When a ground fault condition is detected, the Reset button on the GFCI receptacle Fault will trip and the power to an appliance is interrupted. To resume normal operation, determine and correct the ground fault, then press the Reset button.

Monthly Testing- Once a month, with the TruePower turned ON, press the Test button on the GFCI receptacle. The Rest button should pop out. Press it to reset the GFCI and to continue with normal operation. If the Rest button does not trip, the GFCI may have failed. Contact Customer Service to have a qualified technician inspect the unit.

### Resetting as the Result of an Overload:

The TruePower has a high surge capacity of double the stated model power rating for 5 seconds. If the appliance(s) connected to the unit try to draw excess power for more than 5 seconds, the TruePower will shut down and the Red Fault light will illuminate. After removing the overload condition, the TruePower will cycle through a 15 second self check and automatically reset to operating levels.

### Operating Several Appliances at the Same Time:

If you are going to operate several appliances at the same time, turn them on independently, after you have powered up the inverter. This action ensures that the TruePower does not have to deliver the starting current for all of the appliances at once. The TruePower can accommodate several appliances at once as long as they do not exceed more than a combined total of the stated wattage of the inverter.

### Recharging Your Batteries:

We recommend you recharge your batteries before they are fully discharged. This will provide a much longer life cycle than recharging them when they are almost completely discharged. It is recommended to use a Remote Battery Status indicator to monitor the battery levels and determine optimum recharge times and cycles.

► **Operation**

The ON/Off switch turns the TruePower Inverter to ON or to Off.

In the ON position, the Inverter /Fault LED light will illuminate Green. The TruePower begins inverting and provides modified sine wave power.

In the Off position the inverter draws no current from the battery.

Bat' Saver mode allows the user to protect from draining down the entire power of the engine start battery, and shuts the inverter off when the battery reaches a threshold of 11.7 volts allowing you to start your boat or vehicle. To use the Bat' Saver mode, turn the on / off switch to the Bat' Saver mode.

Some appliances and tools operate using larger electric motors, tubes or capacitors require an initial surge of power to start up. This extra surge of power required is often called the "peak load", "starting load" or "surge capacity". Once such a tool or appliance is started, it requires significantly less power to continue operation. This is commonly referred to the "continuous load" of power.

As a rule of thumb, most often the start up or surge load of the appliance or tool will determine if your TruePower inverter has the capability of running it. If the appliance or tool does not start the first try, attempt switching the appliance on every 2 seconds until the appliance turns on. If the appliance does not start after the 5th or 6th attempt, it may require a larger surge than your inverter provides.

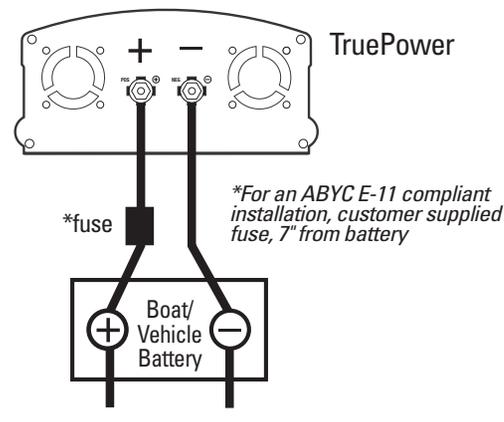
**LED Indicators:**

The two indicator lights on the front panel of the inverter illustrate the operating status of the TruePower Inverter. See table 4 below.

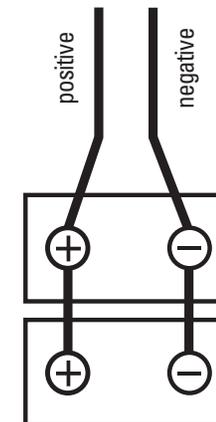
**Status of Indicator Lights Table**

| Light | Color | Status  | Result  |
|-------|-------|---|---|
| Power | Green | When the TruePower unit is on, the Inverter light illuminates.  | Can run your appliances through the Inverter from the battery.  |
| Fault | Red   | The Fault light illuminates whenever there is a battery over-voltage fault condition (in excess of 15volts +/- 1volt), a low battery protection indicator (below 10volts +/- .5volts), an output overload condition or an over-temperature fault condition. | Can not run appliances as the AC output is disabled in the inverter mode. Clear the fault condition. Reset the unit by turning the ON/Off switch to Off and then back to ON. The inverter may need to cool off for a period. Reduce load, duration of use if you have been using for a longer period of time. If it continues to be a problem, you may need to properly size your inverter to your application. |

► **DC Wiring Options**



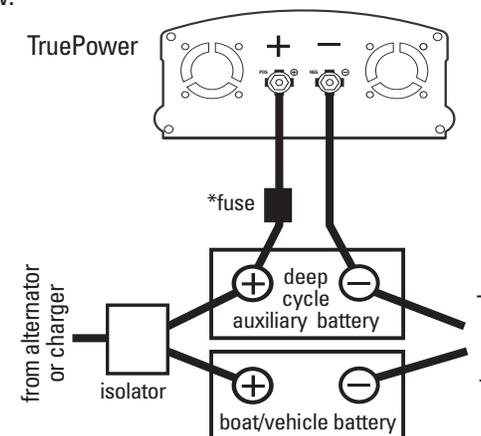
**Figure 1)** This wiring setup displays an inverter connected directly to the engine battery for light-duty applications.



**Figure 2)** Displays 2 x 12volt batteries connected in a parallel system that doubles the capacity and maintains the 12v voltage requirement of your inverter. This battery bank requires a battery charging system.

To obtain sufficient battery capacity, you may need to use more than one battery. Two identical batteries can be connected + to + and - to - in a parallel system, doubling capacity. We recommend that you do not connect batteries from different manufacturers, or with different amp-hour ratings in parallel as decreased battery life may result. See figure 3 below.

**Figure 3)** This wiring diagram displays a battery configuration for Medium-Duty applications.



*\*For an ABYC E-11 compliant installation, customer supplied fuse, 7" from battery*

## ▶ Connecting the DC Cables

**DC connections must be securely fastened and all connections must be tight to avoid risk of fire. Connect the DC cables from the inverter to the battery as noted in the following steps:**

1. Switch the On/Off switch to the Off position.
2. Route the DC cables from the inverter toward the battery.
3. For an ABYC E-11 compliant installation, connect a customer supplied DC fuse or circuit breaker in the positive side of the circuit within 7 inches of the battery. This protects your battery and wiring in case of an accidental shorting (Please see Specifications Table in this Manual for correct sizing).
4. Open the DC fuse or turn off the circuit breaker.
5. Install one connector on the POSITIVE (+) cable to the POSITIVE DC terminal on the inverter.
6. Install the other connector to the POSITIVE (+) terminal DC fuse or DC circuit breaker. Use a wrench to tighten the connection. Test that the cable is secure and the connection is tight.
7. Attach a short DC cable from the unconnected end of the DC fuse or DC circuit breaker. Tighten appropriately.
8. Observing polarity carefully, connect the end of the fused cable to the POSITIVE (+) terminal of the battery. Tighten this connection to the battery manufacturer's recommended torque. You may replace the fuse now or turn the DC circuit breaker on.
9. Connect one connector on the NEGATIVE (-) cable to the NEGATIVE (-) battery terminal. Tighten the connection and assure the cable is secure.
10. Check that the polarity of the DC connection is correct: positive (+) on the inverter is connected to the positive (+) on the battery and negative (-) is connected to the negative (-).

**IMPORTANT:** The next step is the last cable connection you will need to make in mounting the TruePower inverter. A spark is normal when this connection is made!

11. Connect the other connector of the NEGATIVE (-) cable onto the NEGATIVE (-) terminal on the TruePower Inverter.
12. Use a wrench to tighten the nut. Test that all cable connections are tight.

## ▶ Performing Checks Prior to Operation

**Before starting up your inverter, ensure these conditions are met:**

Verify the On/Off switch is in the Off position

Verify the Positive (+) battery cable is connected to the positive (+) battery terminal.

## ▶ Performing Checks Prior to Operation Continued

Verify the Negative (-) battery cable is connected to the negative (-) battery terminal.

Verify the battery voltage is within the proper range for this unit (roughly 10-15.5 volts DC).

Verify the DC fuse is in tact.

## ▶ Testing Installation

When you are ready to test your installation and operate the TruePower Inverter, close the DC fuse or the DC circuit breaker to supply DC power to the TruePower inverter.

### Display Functions of the LED Light Pattern:

The ON/OFF switch turns the TruePower inverter to ON or to OFF:

- In the On position, the Inverter Power LED light illuminates Green. The TruePower begins inverting and provides AC power.
- In the Off position, the TruePower Inverter draws no current from the battery. None of the front panel LED lights are illuminated.
- The Fault Light Illuminates Red when a fault conditions such as over temperature, output overload, or battery low voltage occurs.

### To test the TruePower Inverter:

1. Turn the On/Off switch to the ON position.  
The Inverter/Fault LED light illuminates Green.
2. Plug an appliance of equal watts or less into the AC outlet.
3. Turn the appliance ON to verify that it operates.

If the Inverter/Fault light illuminates Red, see the TruePower Inverter "Troubleshooting" section.

## ▶ Testing of the GFCI

1. Turn the On/Off switch to the ON position.
2. Plug a test lamp into the GFCI outlet.
3. Press the "test" button located on the GFCI outlet.
4. The "reset" button should pop out and the power to the test lamp should turn off. If the lamp does not shut off and remains on, or if the reset button does not pop out, the GFCI receptacle is defective. Please call factory service at 1-800-824-0524 for replacement or service.
5. To resume regular operation, push the "reset" button to return to regular operation.