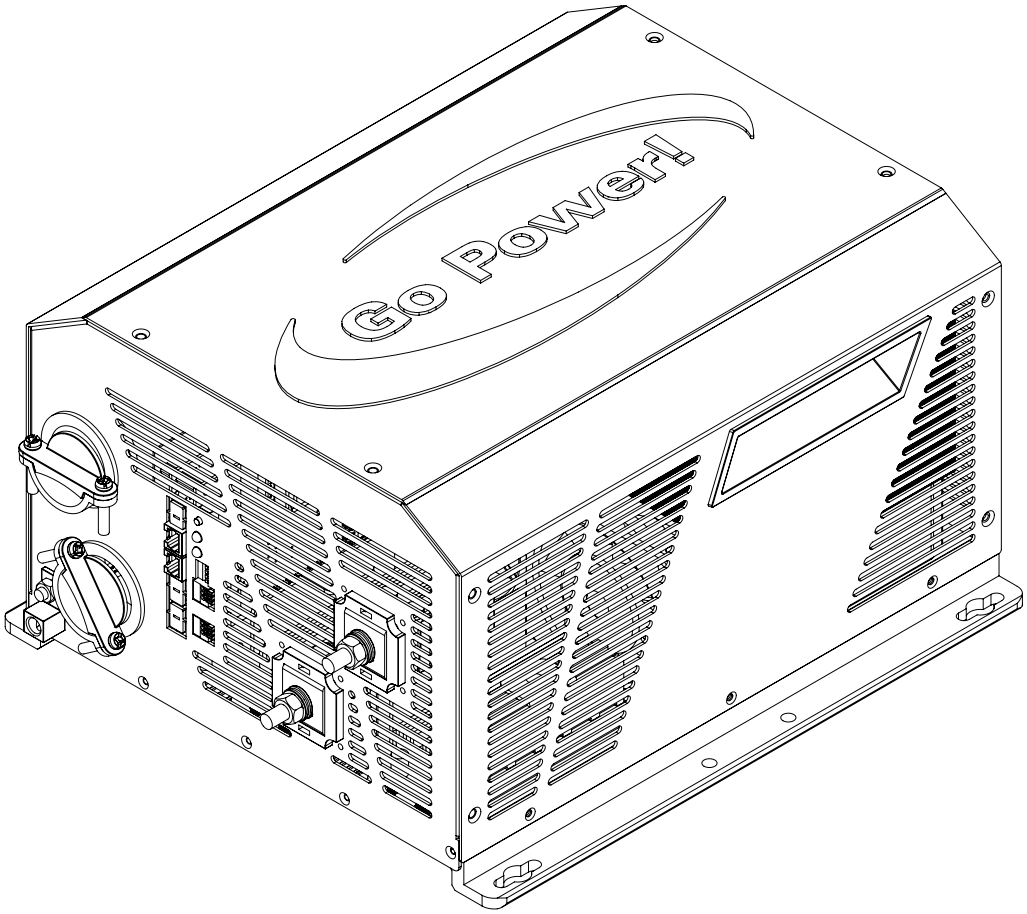
INVERTER/CHARGER

User Manual

GP-IC-2000
GP-IC-3000

IC Series™



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Worldwide Technical Support and Product Information gpelectric.com
Go Power! | Dometic
201-710 Redbrick Street Victoria, BC, V8T 5J3
Tel: 1.866.247.6527

79497_MANUAL_GP-IC-Series_RevI

Go Power!

DOMETIC

Congratulations on purchasing your Go Power! IC Series Inverter/Charger. The IC Series Inverter/Charger combines the functions of a pure sine wave inverter, battery charger and AC transfer switch into one unit - saving space, installation time, and system complexity. The IC Series is designed for mobile and home power applications.

- Pure Sine Wave Inverter Output - assures the AC output voltage is perfectly reliable even when limited external AC power is available
- 50-amp leg AC pass-through capability (Neutral rated to 50A)
- Multi-stage battery charging
- Inverter mounted ON/OFF switch with LED indicator
- Built in handles for easy installation
- Battery Temperature Sensor (BTS) provides automatic battery temperature compensation for optimum charging even during extreme temperature changes

Combined with the numerous DC power systems Go Power! manufactures and sells, the IC Series allows you to enjoy the luxuries that electricity provides, with or without a campsite hookup. This manual will aid in the process of installing the Go Power! IC Series Inverter/Charger. Please read and understand this manual before installing the Go Power! IC Series Inverter/Charger. **Please retain this manual for future reference.**

Record the unit's model and serial number below. It is much easier and quicker to record this information now at the pre-installation stage.

Model Number:

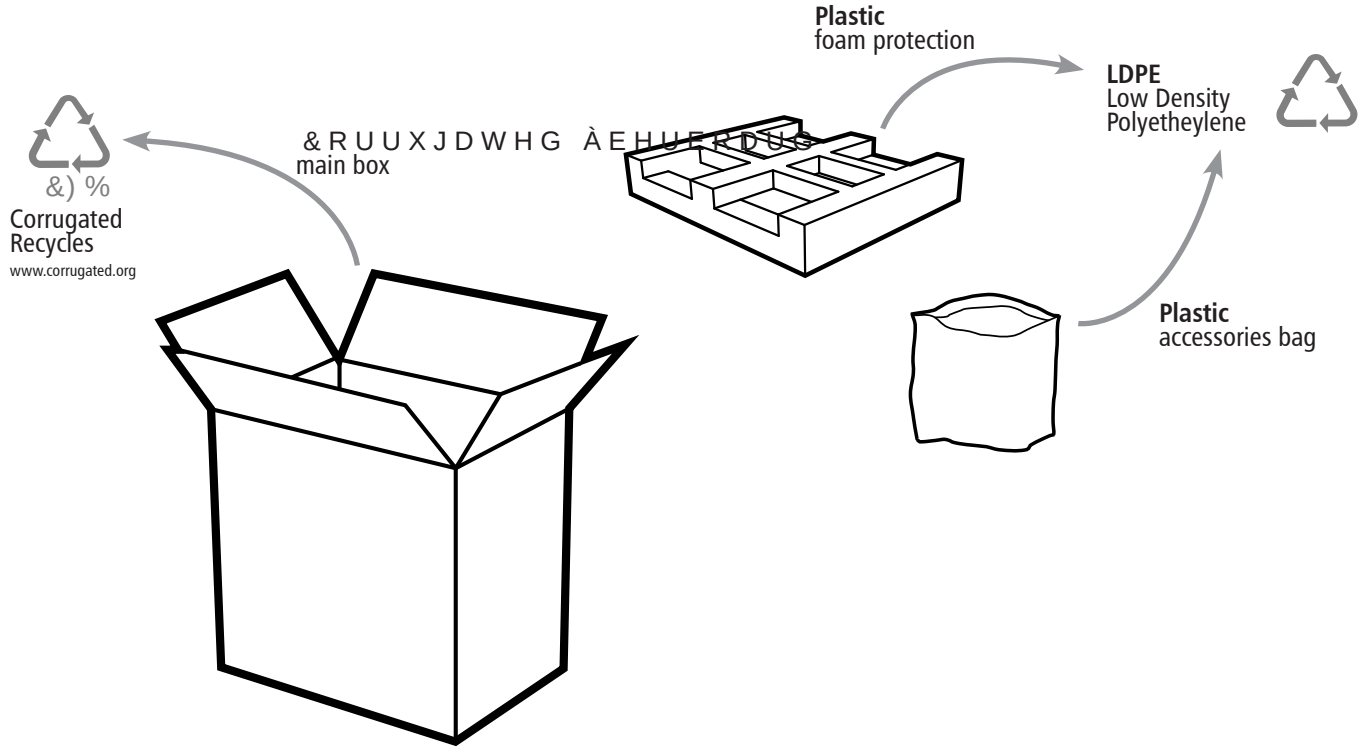
Serial Number:

Date of Install:

Battery Bank Information: (size, install date, battery type)

Product Packaging

Please safely store the packing the IC Series was delivered in or recycle the packaging components as outlined below:



Local recycling centeRs can be found here:
www.earth911.com/recycling-center-search-guides

CONTENTS

2. GENERAL INFORMATION 4

2.1 CAUTIONS/WARNINGS 4

2.2 DISCLAIMERS 7

2.3 IC SERIES KIT PARTS 7

2.3.1 PARTS CHECKLIST 7

2.4 UNIT FEATURES 8

2.5 UNIT DIMENSIONS 10

2.6 UNIT ACCESSORIES 11

2.7 INSTALLATION TOOLS AND MATERIALS 11

3. INSTALLATION 12

3.1 TYPICAL INVERTER/CHARGER SYSTEM OVERVIEW 12

3.2 LOCATION AND ENVIRONMENTAL REQUIREMENTS 16

3.3 MOUNTING THE INVERTER/CHARGER 17

3.3.1 MOUNTING THE DRIP SHIELD 17

3.4 GENERAL WIRING SPECIFICATIONS 18

3.5 DC WIRING 19

3.5.1 DC WIRE SIZING 20

3.5.2 DC OVERCURRENT PROTECTION AND DC DISCONNECT 20

3.5.3 PREPARING THE DC CABLES 20

3.5.4 DC CABLE CONNECTIONS 20

3.5.5 BATTERY TEMPERATURE SENSOR 21

3.5.6 WIRING THE INVERTER/CHARGER TO THE BATTERY BANK 22

3.5.7 BATTERY LAYOUTS 23

3.5.8 DC GROUNDING 24

3.6 AC WIRING 24

3.6.1 AC POWER SOURCES 25

3.6.2 AC WIRE SIZE AND OVERCURRENT PROTECTION 25

3.6.3 GFCI (GROUND FAULT CIRCUIT INTERRUPTION) OUTLETS 25

3.6.4 AC TERMINAL BLOCK CONNECTIONS 26

3.6.5 AC CABLE CONNECTIONS 27

$& :,5,1* 6,1*/(3+$6(" $ 6(59,&(6,1*/(,1 6,1*/(28

3.6.7 AC WIRING 2 - SINGLE PHASE, 30A> SERVICE, SINGLE IN /SINGLE OUT 30

3.6.8 AC WIRING 3 - SPLIT PHASE, 50A SERVICE, DUAL IN, DUAL OUT, OPTION 1 31

3.6.9 AC WIRING 4 - SPLIT PHASE, 50A SERVICE, DUAL IN, DUAL OUT, OPTION 2 32

3.6.10 GROUNDING THE INVERTER - AC GROUNDING 33

3.6.11 DISABLING THE NEUTRAL TO CHASSIS GROUND CONNECTION 34

3.6.12 GROUNDING ON BOATS 34

3.7 FINAL INSPECTION 35

3.8 TESTING THE INSTALLATION 35

3.9 WARNING LABELS 35

4. OPERATION 36

4.1 GENERAL OPERATING NOTES 36

4.2 AC POWER PASS-THROUGH MODE 38

4.3 CHARGING MODE 39

4.4 POWER SHARING MODE 40

4.5 GENERATOR MODE 41

4.6 INVERTING MODE 42

4.7 BATTERY TEMPERATURE SENSOR OPERATION 43

4.8 FACTORY DEFAULT VALUES 43

4.9 IC SERIES FAULT CONDITIONS 44

4.10 MAINTENANCE AND TROUBLESHOOTING 44

5. SPECIFICATIONS 46

6. IMPORTANT SAFETY INSTRUCTIONS 48

7. WARRANTY RETURN PROCEDURE 49

8. PRODUCT END OF LIFE INFORMATION - RECYCLING 50

2. GENERAL INFORMATION

2.1 CAUTIONS/WARNINGS

This document contains important safety instructions for the products produced by Go Power! Read all instructions and cautionary markings on the product and on any accessories or additional equipment included in the installation. Failure to follow these instructions could result in severe shock or possible electrocution. Use extreme caution at all times to prevent accidents.

All electrical work must be performed in accordance with local and national electrical codes. These instructions are for use by TXDOLÀHG SHUVRQQHO ZKR PHHW DOO ORFDO DQG JRYHUQPHQWDO FRGH electrical power systems with AC and DC voltage up to 600 volts.

,QVWDOODWLRQ PDLQWHQDQFH DQG FRQQHFWLRQ RI LQYHUWHUV PXVW standards, wiring rules, and the requirements of local power authorities and/or companies.

Safety regulations relevant to the location shall be followed during installation, operation, and maintenance. Improper operation may have a risk of electric shock or damage to equipment and property.

	WARNING! Hazard to Human Life	This type of notation indicates that the hazard could be harmful to human life.
	WARNING! Shock Hazard	Danger of Shock or electrocution.
	WARNING! Burn/Fire Hazard	'DQJHU RI KRW VXUIDFH DQG RU ÀUH
	CAUTION! Hazard to Equipment	This type of notation indicates that the hazard may cause damage to the equipment.
	IMPORTANT	This type of notation indicates that the information provided is important to the installation, operation, and/or maintenance of the equipment. Failure to follow the recommendations in such a notation could result in annulment of the equipment warranty.

General Safety

	WARNING! Limitations on Use	This equipment is NOT intended for use with life support equipment or other medical equipment or devices.
		This product is designed for indoor/compartment installation. It must not be exposed to any liquids or moisture of any type.
	CAUTION! Equipment Damage	Only use components or accessories recommended or sold by Go Power! or its authorized agents.
	IMPORTANT	Do not attempt to install this equipment if it appears to be damaged in any way. See the Warranty section for instructions on returning the equipment.

GENERAL INFORMATION

Personal Safety

WARNING!
Personal Injury

Use safe lifting techniques when lifting this equipment as recommended by the Occupational Safety and Health Association (OSHA) or other local codes.

Use standard safety equipment when working on this equipment, such as safety glasses, ear protection, steel-toed safety boots, safety hard hats, etc.

Use standard safety practices when working with electrical equipment. (Remove all jewelry, use insulated tools, wear cotton clothing, etc.)

Never work alone when installing or servicing this equipment. Have someone nearby that can assist if necessary.

Do not touch the Inverter/Charger during operation. The temperature of some parts of the inverter may exceed 60° during operation. Let it cool for at least 5 minutes after shutdown before touching it.

Ensure that children, pets, and other animals are kept away from the inverter, solar arrays, battery bank, and utility grid components.

,I WKH HTXLSPHQW LV XVHG LQ D PDQQHU QRW
protection provided by the equipment may be impaired.

Equipment Safety

WARNING!
Lethal Voltage

5HYLHZ WKH V\VWHP FRQÀJXUDWLRQ WR LGHQ
Ensure ALL sources of power are disconnected before performing any LQVWDOODWLRQ RU PDLQWHQDQFH RQ WKLV H de-energized using a validated voltmeter (rated for a minimum 1000 VAC and 1000 VDC) to verify the de-energized condition.

'R QRW SHUIRUP DQ\ VHUYLFLQJ RWKHU WKD LQVWUXFWLRQV XQOHVV TXDOLÀHG WR GR VR
Power! Technical Support personnel.

To avoid electric shock, disconnect the DC input and AC input of the inverter at least 5 minutes before performing any installation or maintenance.

Do not tighten the AC and DC terminals or pull on the AC and DC wiring when the inverter is running.

WARNING!
Fire Hazard

'R QRW NHHS FRPEXVWLEOH RU ÁDPPDEOH PD
equipment. Some products contain relays with moving parts and are not ignition-protected.

Ensure AC, DC, and ground cable sizes conform to local codes. See product manuals for minimum size requirements.

Ensure all conductors are in good condition.

Do not operate the unit with damaged or substandard cabling.

CAUTION!
Equipment Damage

When connecting cables from the inverter to the battery terminals, ensure the proper polarity is observed. Connecting the cables incorrectly can damage or destroy the equipment and the warranty may be annulled.

Thoroughly inspect the equipment prior to energizing. Verify that no tools or equipment have been inadvertently left behind.

Ensure clearance requirements are strictly enforced.

.HHS DOO YHQWV FOHDU RI REVWUXFWLRQV WKD
through, the unit.

CAUTION!
Equipment Damage

Static electricity may damage electronic components. Take appropriate steps to prevent such damage to the inverter; otherwise, the warranty may be annulled.

Battery Safety

WARNING!
Explosion, Electrocution, or Fire Hazard

Ensure the cables (conductors) are properly sized.

Ensure clearance requirements around the batteries are strictly enforced.

Ensure the area around the batteries is well ventilated and clean of debris.

1HYHU VPRNH RU DOORZ D VSDUN RU ÁDPH

Always use insulated tools. Avoid dropping tools onto batteries or other electrical parts.

Never charge a frozen battery.

Never use old or untested batteries. Check each battery's label for age, type, and date code to ensure all batteries are identical.

If a battery must be removed, always remove the grounded terminal from the
EDWWHU\ ÀUVW 0DNH VXUH DOO GHYLFHV DUH
causing a spark.

IMPORTANT

Use the battery types recommended by Go Power!. Follow the battery manufacturer's recommendations for installation and maintenance.

Insulate batteries as appropriate against freezing temperatures. A discharged battery will freeze more easily than a charged one.

If a remote or automatic generator control system is used, disable the starting circuit and/or disconnect the generator from its starting battery while performing maintenance to prevent accidental starting.

Wear complete eye and clothing protection when working with batteries. Avoid touching bare skin or eyes while working near batteries.

Keep plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

If battery acid contacts skin or clothing, wash immediately with soap and
ZDWHU ,I DFLG HQWHUV WKH H\H LPPHGLDWHO
at least 20 minutes and get medical attention as soon as possible.

GENERAL INFORMATION

2.2 DISCLAIMERS

IMPORTANT: Please follow installation and wiring instructions exactly as outlined to ensure safety. We recommend installation by an RV technician or professional electrician to ensure adherence to relevant electrical codes. We have made every reasonable effort to ensure the accuracy of the instructions in this manual, but Go Power! does not guarantee that the information is error free, nor do we P D NDHQR W kH S U H V Z D U UDQWDQ DQ\ DHUR I RU P DWLRQ FRQWDLQHG LQ WKLV PDQXDO DQG VKDOO QRW EH OLDEOH IRU DQ\ GDPDJHV FDXVHG E\ WKH XVH F L À F D W in this manual are for reference purposes only and are subject to change without notice. For additional information please see www.gpelectric.com.

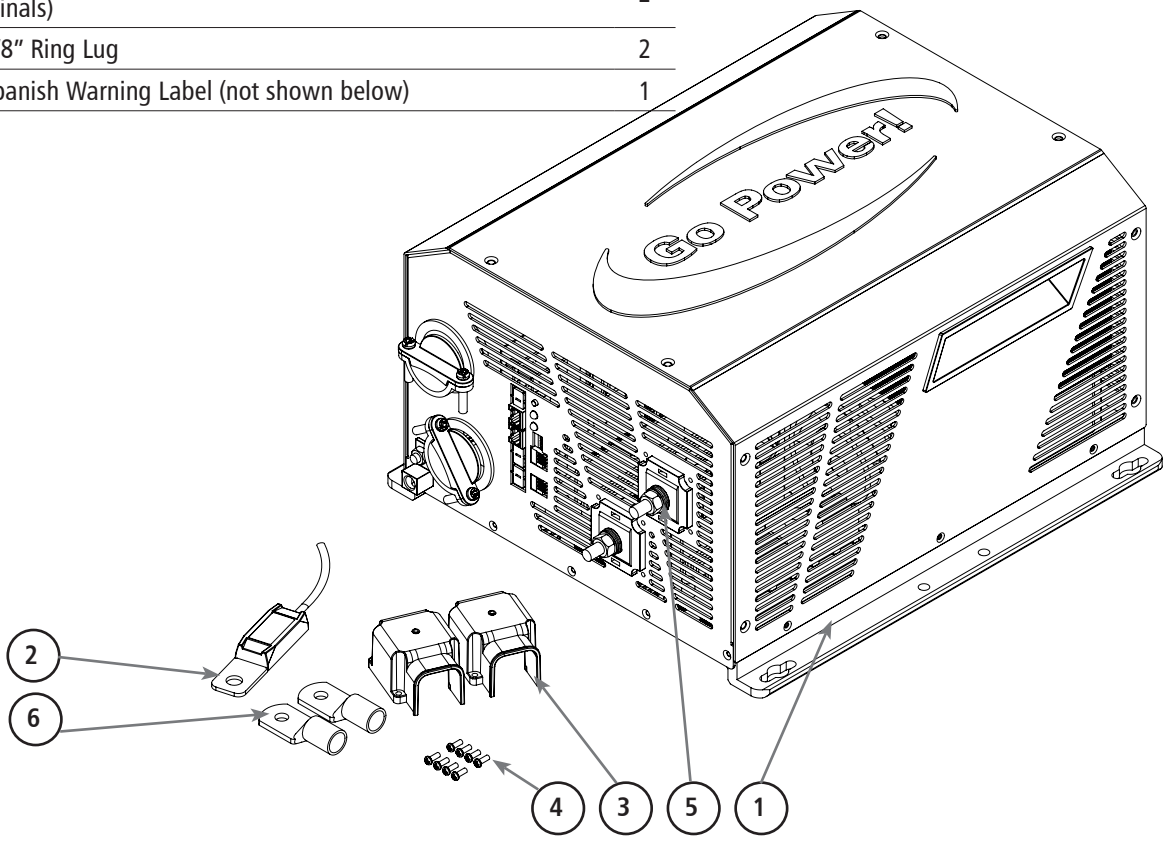
DISCLAIMER: Go Power! disclaims liability for any direct, indirect, or incidental damages caused by, or in case of, installation not performed following the instructions and cautions in this manual. Go Power! will refuse requests for exchanges or returns, resulting from the purchase and installation of items which do not comply with local codes. To avoid such concerns Go Power! recommends installation by a professional electrician or RV technician. Examples that are shown within this manual are for illustrative purposes only.

2.3 IC SERIES KIT PARTS

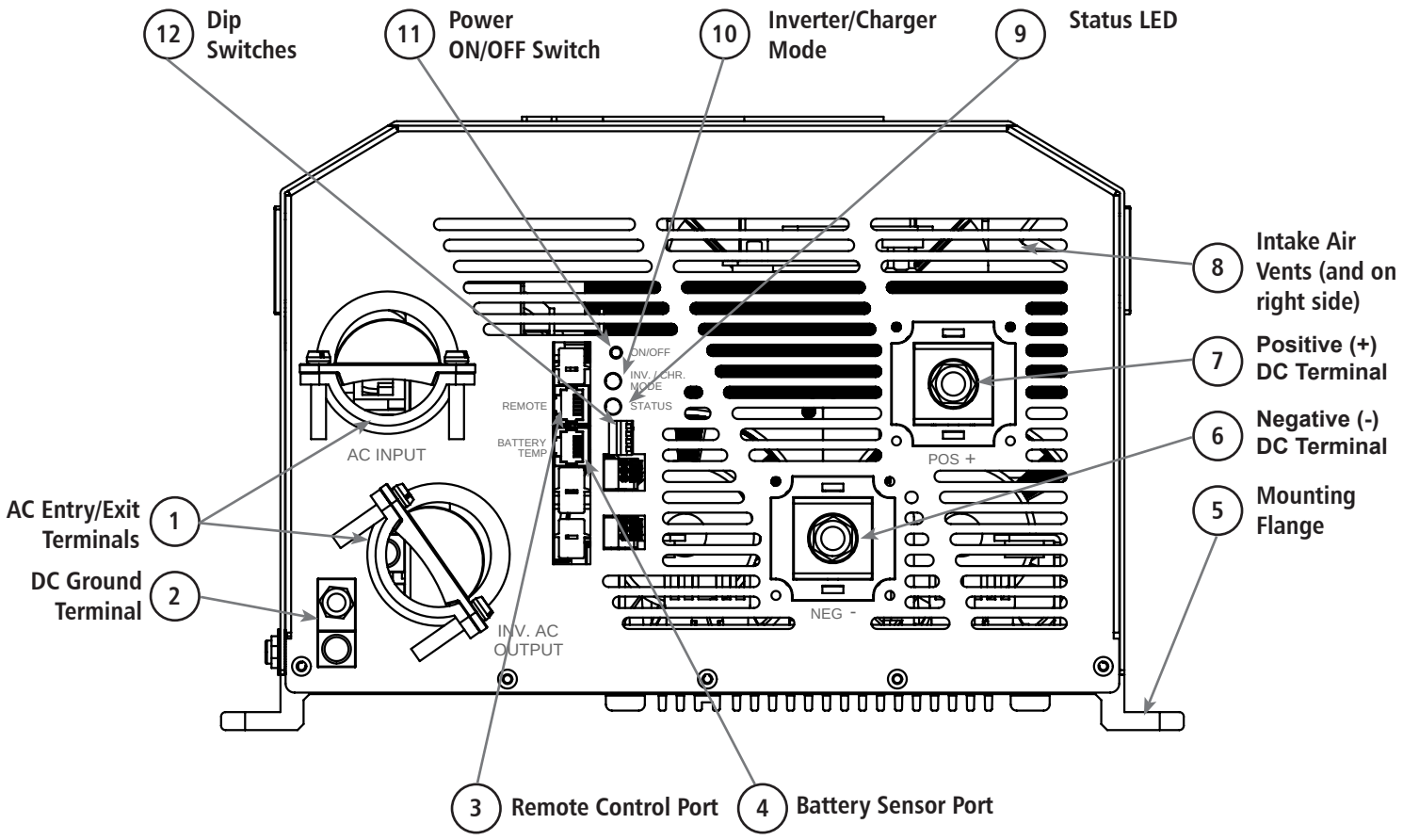
Note Please unpack and make sure all parts shown in the list below are included in the kit. If any parts are missing please contact Go Power!'s customer service team at customersupport@gpelectric.com or 1.866.247.6527.

2.3.1 PARTS CHECKLIST

ITEM #	DESCRIPTION	
01	IC Series Inverter/Charger	1
02	Battery Temperature Sensor	1
03	DC Terminal Covers (Black and Red)	2
04	Phillips screw	8
05	M8 x 1.25 Nut, Split Washer, Flat Washer (installed on DC Terminals)	2
06	3/8" Ring Lug	2
07	Spanish Warning Label (not shown below)	1

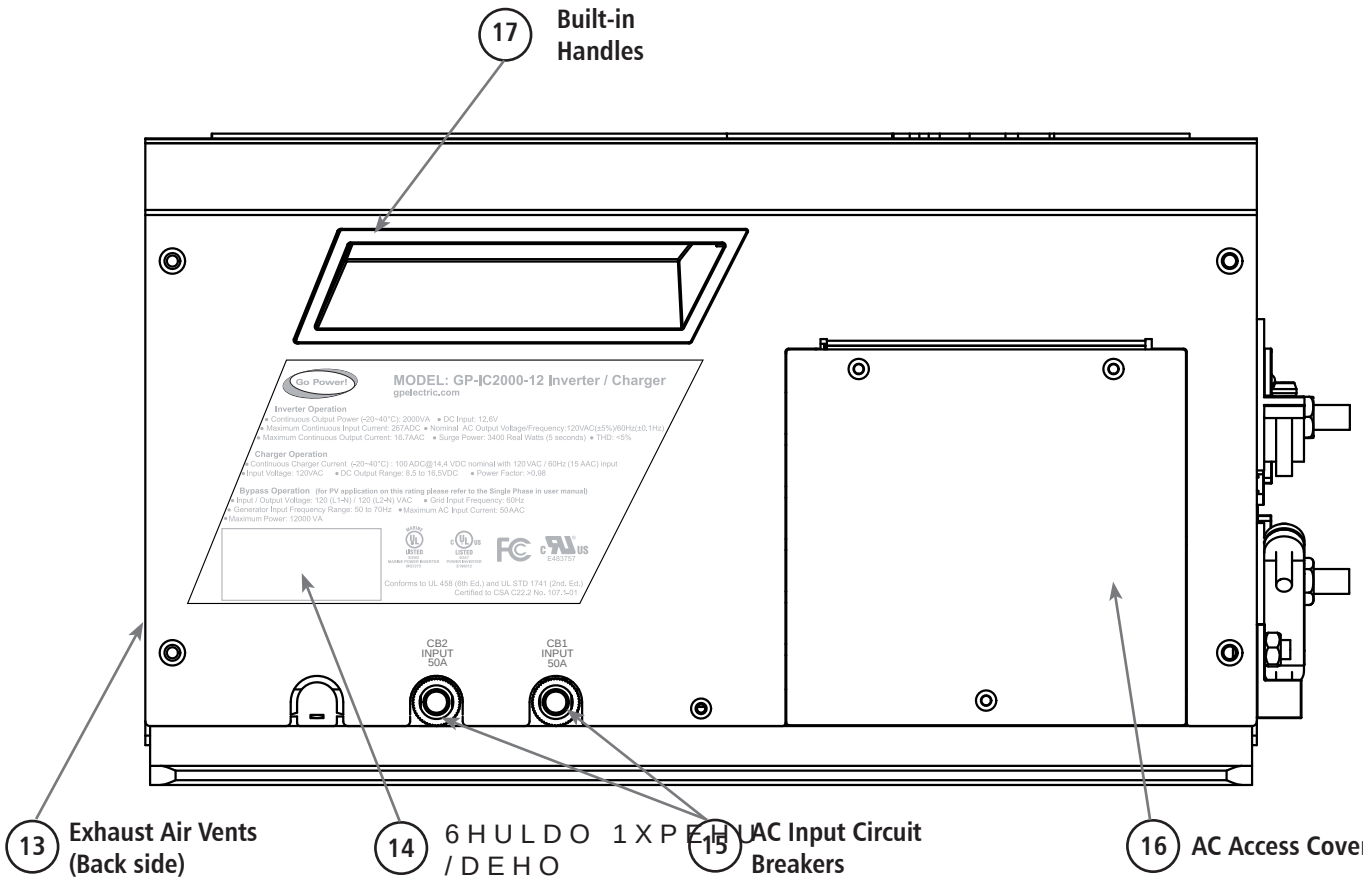


2.4 UNIT FEATURES



1	**AC Entry/Exit Terminals** - Two 1-3/8" knockouts provided to accommodate up to 1-1/4" 50 amp RV Cable. Strain relief clamps provided to secure the AC input and output wires.
2	**DC Ground Terminal** - Use this connection to ground the exposed chassis of the inverter to the DC grounding system. This terminal accepts CU/AL conductors from #14 to #2 AWG (2.1 to 33.6mm^2).
3	**Remote Control Port** - Use this port to connect the optional remote control unit to the Inverter/Charger.
4	**Battery Temperature Sensor Port** - Use this port to connect the battery temperature sensor to the Inverter/Charger.
5	**Mounting Flange** - Use this to secure the Inverter/Charger to the mounting surface.
6	**Negative (-) DC Terminal** - Use this connection point to secure the battery bank negative (-) cable to the Inverter/Charger. Always ensure the DC terminal cover is used to protect this terminal.
7	**Positive (+) DC Terminal** - Use this connection point to secure the battery bank positive (+) cable to the Inverter/Charger. Always ensure the DC terminal cover is used to protect this terminal.
8	**Intake Air Vents** - These cut-outs are used as ventilation openings. Air is drawn in through the front of the Inverter/Charger and passes through to keep the electronics cool for optimum performance.
9	**Status LED** - Green, Red Blink, Red Fast Blink, Orange Solid, Orange Blink & Orange Fast Blink Status. See page 38 for further explanation.
10	**Inverter/Charger LED** - Inverter Mode = Solid Green Charging Mode = Solid Green
11	**Power ON/OFF Switch** - This push button switch can be used to turn the unit on/off. Warning! Power OFF does not dis-connect the batteries or AC power source. Therefore, the "AC output load" is still active.

GENERAL INFORMATION



3OHDVH QRWH /DEHO VKRZQ LV IRU D *3 ,& 3OHDVH UHIHU WR WKH

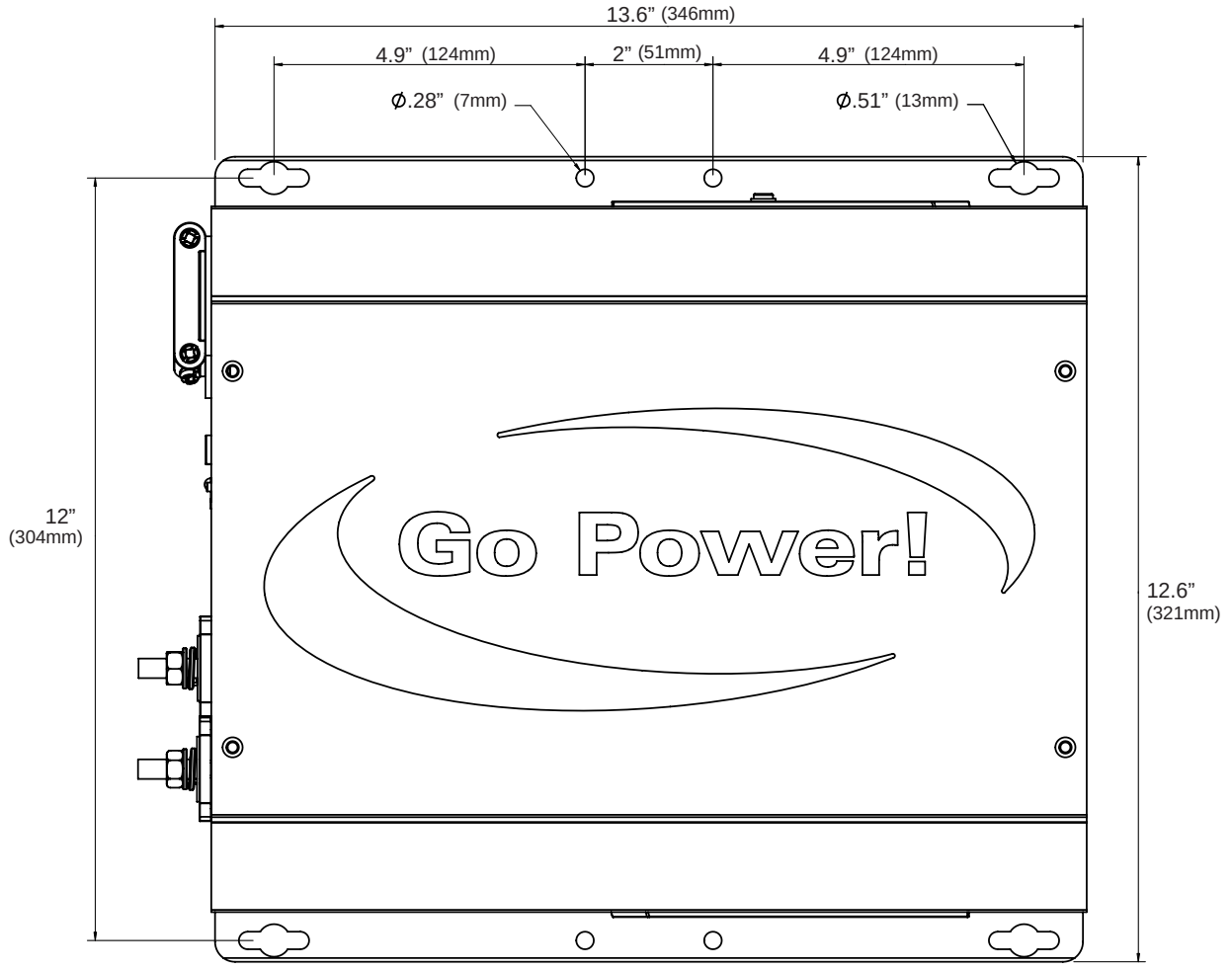
12	**Dip Switches** - Reserved for future use.
13	**Exhaust Air Vents** - These cut-outs are used as ventilation openings. Air is drawn in through the front of the Inverter/Charger and passes through to keep the electronics cool for optimum performance.
14	6HULDO 1XPEHU /DEHO GLVSOD\V WKH XQLW VHULDO QXPEHU GDWH RI
15	**AC Input Circuit Breaker** - CB1 & CB2 - These circuit breakers protect the unit's internal charger wiring and pass-through relay when in AC pass-through mode. Press in to reset. The input circuit breakers are not branch-rated.
16	**AC Access Cover** - Remove this panel to access the internal wiring terminal block. This terminal block is used to hardwire all inverter AC input and output wiring connections.
17	**Built-In Handles** - Use these handles to safely move the Inverter/Charger

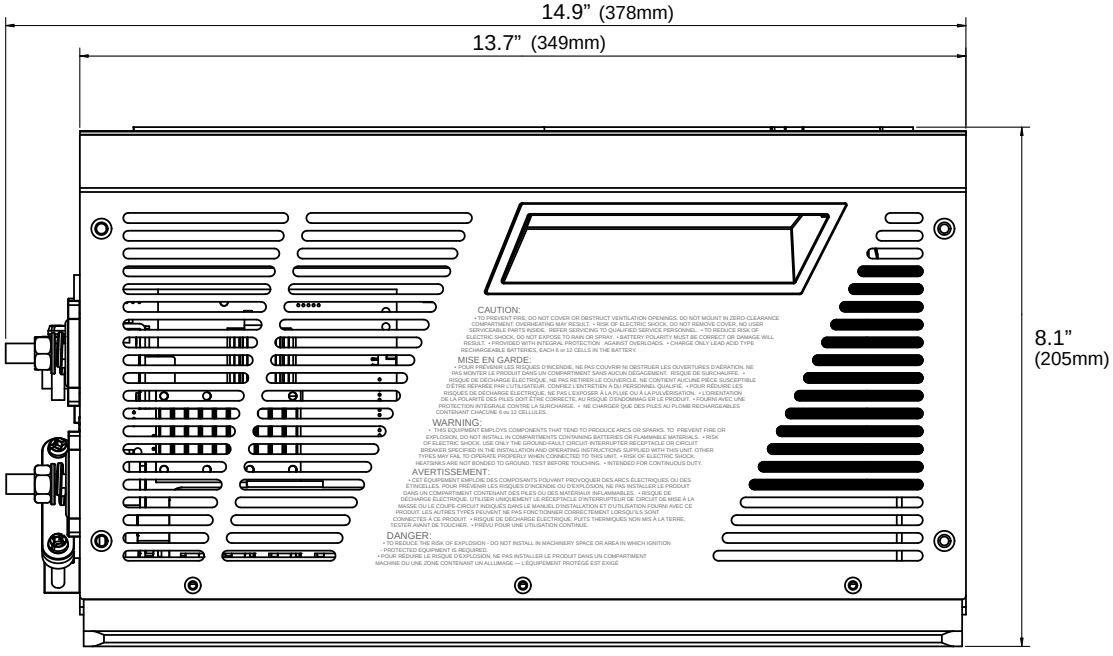
:$51,1* 7XUQLQJ WKH XQLW 2)) GRHV QRW GLVFRQQHFW WKH EDWV
load" is still active.

&$87,21 7KLV ,QYHUWHU GRHV QRW LQFOXGH DQ\ RXWSXW FLUFXL
EH LQVWDOOHG LQ WKH LQYHUWHU·V RXWSXW ZLULQJ EUHDNHU SD

&$87,21 7KH ,QYHUWHU·V LQWHUQDO WUDQVIHU $& WUDQVIHU UHC
FXUUHQW PXVW EH QR JUHDWHU WKDQ DPSV SHU OHJ RU GDPDJH
occur.

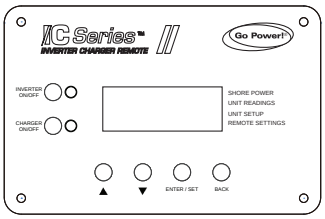
2.5 UNIT DIMENSIONS





GENERAL INFORMATION

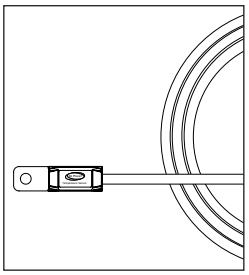
2.6 UNIT ACCESSORIES



The IC Series Inverter/Charger has two accessories available:

- IC Series remote (not included).
- Battery temperature sensor (included).

IC Series Remote
This remote control device can be used for monitoring the performance of the unit. It is also used to program certain settings on the Inverter, Charger, and AC pass-through.



Battery Temperature Sensor (BTS)
This sensor monitors the temperature of the battery bank. The temperature data is used to provide optimum battery charging even during extreme temperature changes.

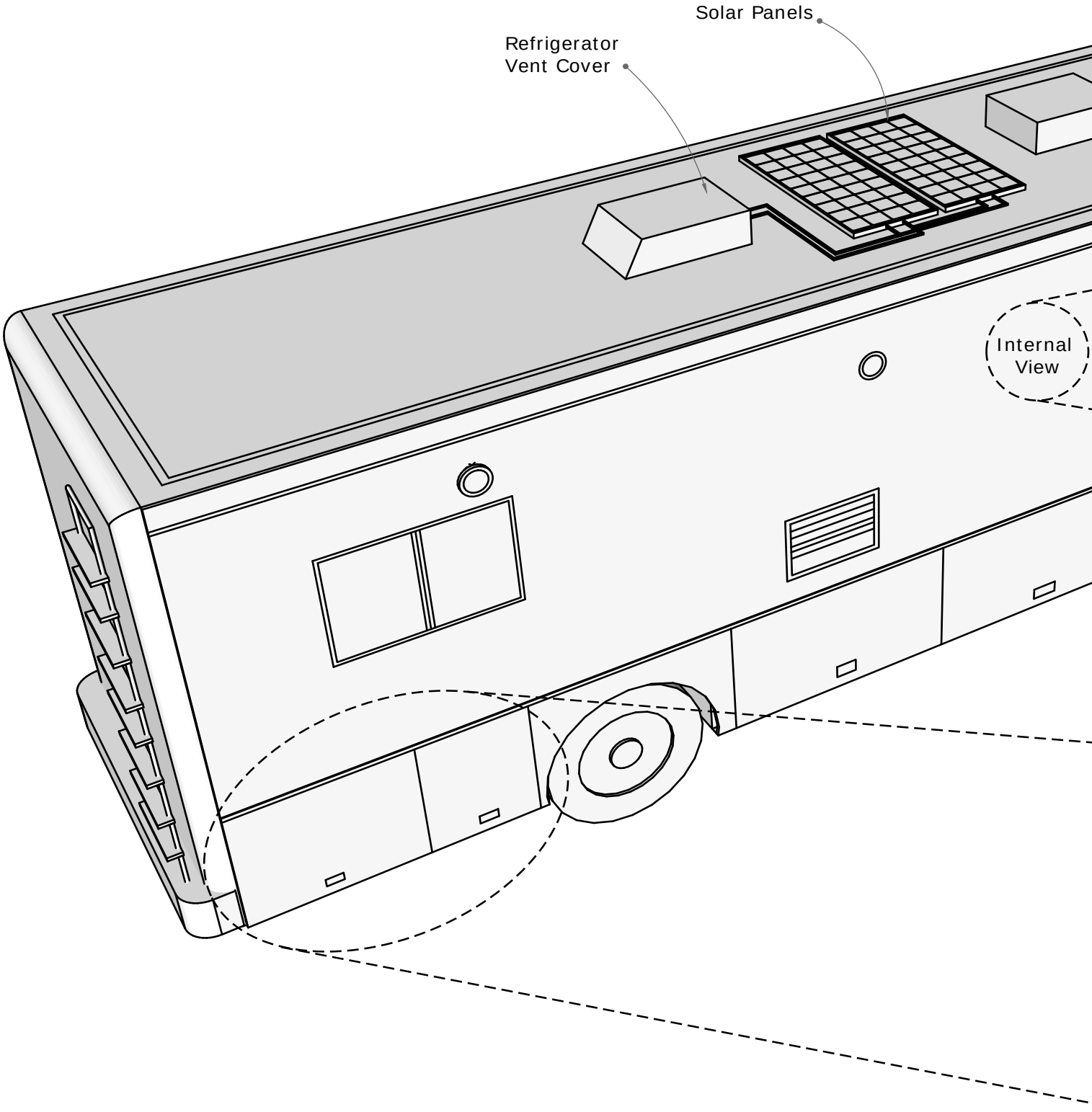
2.7 REQUIRED TOOLS AND MATERIALS

Required Tools	Optional Tools
a. 13mm or adjustable wrench b. Screwdriver (Phillips & Flathead) c. Wire strippers and cutters d. Electric hand drill and drill bits	e. Keyhole saw f. Pencil or marker g. Pliers h. Caulking gun i. Sealant j. Digital multimeter k. Torque driver l. Butt splice crimping tool

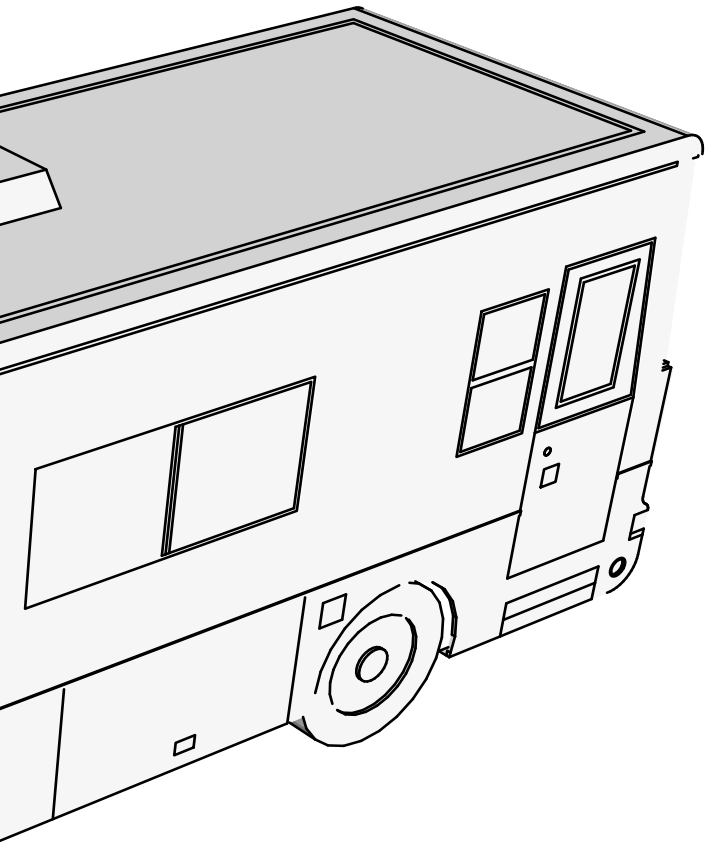
Materials	
a. Conduit b. Strain-reliefs c. Electrical tape (Black, Red, Green, Blue, Brown, White) d. Zip-ties e. Mounting hardware	

3.1 TYPICAL SYSTEM OVERVIEW

The following diagrams on pages 12-15 show how the IC Series is typically installed in a mobile RV application. The diagrams show where the Inverter/Charger is installed and how the mobile power system can be integrated with a Go Power! RV Solar Kit (sold separately by Go Power; please contact us directly.)



TYPICAL RV INSTALLATION



Cable to
IC Series