

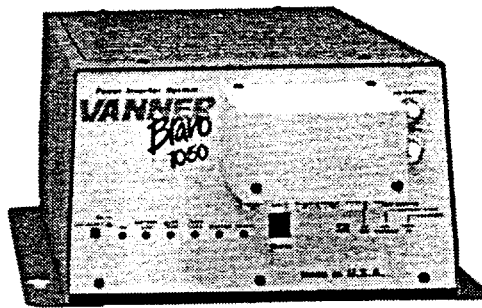
VANNER

POWER GROUP

OWNERS MANUAL

BRAVO 1050

Inverter/Battery Charger



QBC10-12/230-50H, QBC10-24/240-50H
QBC10-24/230-50H, QBC10-24/240-50H

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INTRODUCTION

Thank you for purchasing a Vanner *Bravo* Power Inverter/Battery Charger. We are confident that you will be very pleased with its performance. Vanner Inverter/Battery Chargers are designed and manufactured by skilled professionals using the highest standards in workmanship. With minimum maintenance and care, you can be assured of many years of trouble-free service.

GENERAL DESCRIPTION

These units have 3 wires (black for hot, white for neutral, and green for GND) used to connect the AC input of inverter/charger to AC input power with wire nuts and 3 similar wires with wire nuts to connect the AC output of inverter/charger to its AC load center.

Bravo is a high performance combination inverter and battery charger. The inverter is connected to a battery through proper fusing and can also be connected to AC input power. Loads connected to *Bravo* will be powered from the battery when AC input power is not available. When AC input power is restored (after a brief delay to insure that full power is available) the load is switched back to AC input power and the battery charger activates automatically to recharge the battery.

Inverter: The *Bravo* QBC10 converts the power of a battery to 1050 watts of 230 or 240 VAC modified sine wave power to operate lights, tools and appliances. *Bravo* is simply connected to the positive and negative posts of a battery system with appropriate fusing, and when turned on produces 230 or 240 VAC power. The inverter also has an energy saving feature called *Load Demand*. While in *Load Demand* mode, the inverter output is pulsed. This significantly reduces the current draw from the battery until a demand is made on its output. Continuous output of 230 or 240 VAC resumes when a load greater than 5 watts is applied.

Battery Charger: The *Bravo* battery charger is superior to standard chargers. *Bravo* incorporates a unique three stage charger design which allows it to correctly charge batteries automatically. While in the BULK stage, *Bravo* charges continuously at full output of 55 (27.5) amps* until the battery cells have charged to 14.2/14.1 (28.4/28.2) VDC (flooded/gel). Then the charger goes into the ABSORPTION stage, maintaining 14.2/14.1 (28.4/28.2) VDC until the battery is fully charged. *Bravo* then automatically switches to the FLOAT stage. The FLOAT stage maintains the battery at a correct voltage of 13.2/13.6 (26.4/27.2) VDC. The three stage design keeps batteries in top condition and reduces battery failure.

* A front panel mounted Battery Charger High/Low dipswitch is provided to limit the output from 55 (27.5) amps to 27.5 (13.7) amps.

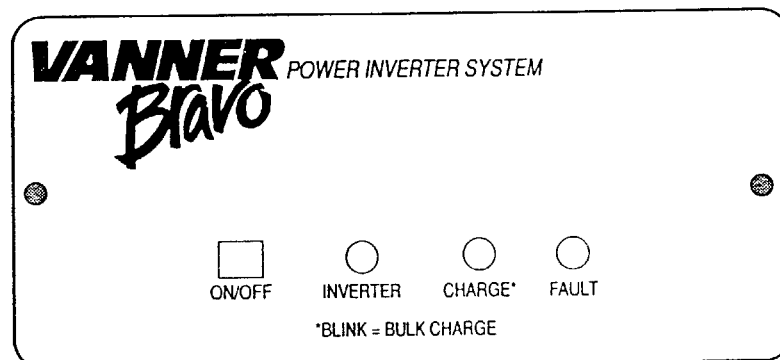
SPECIFICATIONS:

INVERTER Model #	QBC10-12/230-50H	QBC10-12/240-50H	QBC10-24/230-50H	QBC10-24/240-50H
Output at 230 or 240 VAC-Continuous	1050			
Surge Capacity at 230 or 240 VAC (3 secs)	2100			
Input Voltage, VDC	12 VDC Nominal,		24 VDC Nominal	
(Deep Cycle Battery Recommended)	10.5 VDC Minimum		21 VDC Minimum	
	16.0 VDC Maximum		32 VDC Maximum	
Output Voltage	230 VAC ± 5%	240 VAC ± 5%	230 VAC ± 5%	240 VAC ± 5%
No Load Current Draw (Battery)	1 Amp (full voltage), Approximately 0.125 Amps (load demand)			
No Load Current Draw (Battery)	0.020 Amps (Power Off)		0.025 Amps (Power Off)	
Frequency	50 Hertz ± 0.1%			
Output Waveform	Modified Sine Wave			
BATTERY CHARGER (if equipped)				
Charging Capacity, AMPS	55 Amps High, 27.5 Amps Low		27.5 Amps High, 13.7 Amps Low	
Input voltage, VAC	23 VAC ± 10%	240 VAC ± 10%	230 VAC ± 10%	240 VAC ± 10%
Input Current, IAC	4			
Bulk Voltage, VDC	14.2 (flooded) 14.1 (Gel)		28.4 (flooded) 28.2 (Gel)	
Float Voltage, VDC	13.2 (flooded) 13.6 (Gel)		26.4 (flooded) 27.2 (Gel)	
Bypass				
Output Current, hardwired (H suffix)	30 Amps			
Ambient Temperature	-40 to +105oF, -40 to +40oC			
Cooling Air	Fan-cooled, 30 cfm			
Chassis	Aluminium			
Dimensions Hardwire	11.57" W x 5.94"H x 13.04" D			
Weight	22 lbs			

OPTIONS

Remote panel provides On/Off control and status monitoring. Remote has 3 LEDs to indicate present status. The red LED lights when a fault occurs, the yellow when charging is in progress, and the green when the inverter is on or in Load Demand.

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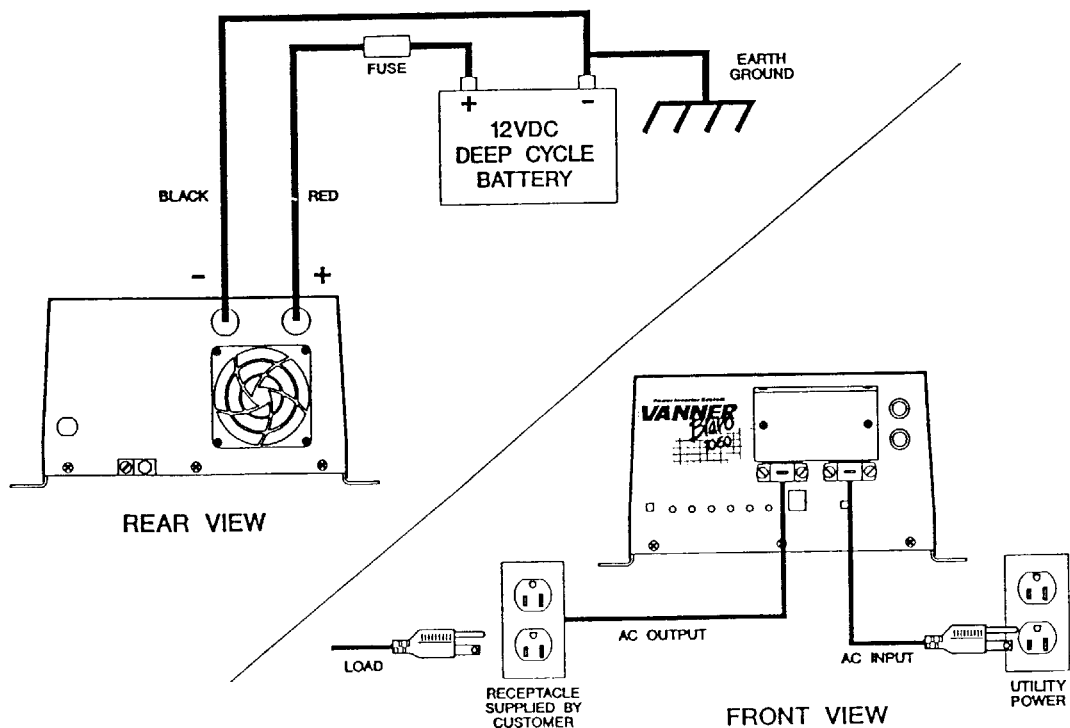


INSTALLATION: HARDWIRED UNITS

CAUTION!- Battery input cables must be connected to the battery with proper polarity as instructed or damage to the inverter may occur.

1. The unit should be OFF before installation begins. Make sure the ON-OFF/RE-SET Inverter Switch is in the OFF-RESET position (Button NOT pushed in).
2. Select a location for the unit that is: a) close to the battery (within 6 ft. using #2 gauge wire), b) protected from the weather, and c) well ventilated.
3. Route the Negative and Positive DC Input cables from the inverter/charger to the battery. If required, protect cables where they come into contact with hard and sharp edges.
4. Install an inline fuse (Bussman ANN 125—for 12 volt application or ANN 80—for 24 volt application) in the (RED) Positive DC Input Cable between the battery and inverter (within 18" of battery).
5. Connect the (BLACK) Negative DC Input Cable to the Battery negative (-) terminal. Connect the (RED) Positive DC Input Cable to Battery positive (+) terminal.
6. Select the proper battery type (GEL or flooded lead acid), load demand option, and charge rate using recessed switches on front panel.
7. Connect AC Input of field wiring compartment to AC source using properly sized wire and wire nuts (10AWG recommended).
8. Wire AC Output to appropriate branch circuits.
9. Verify all connections are tight and secure for maximum performance. Installation is now complete.

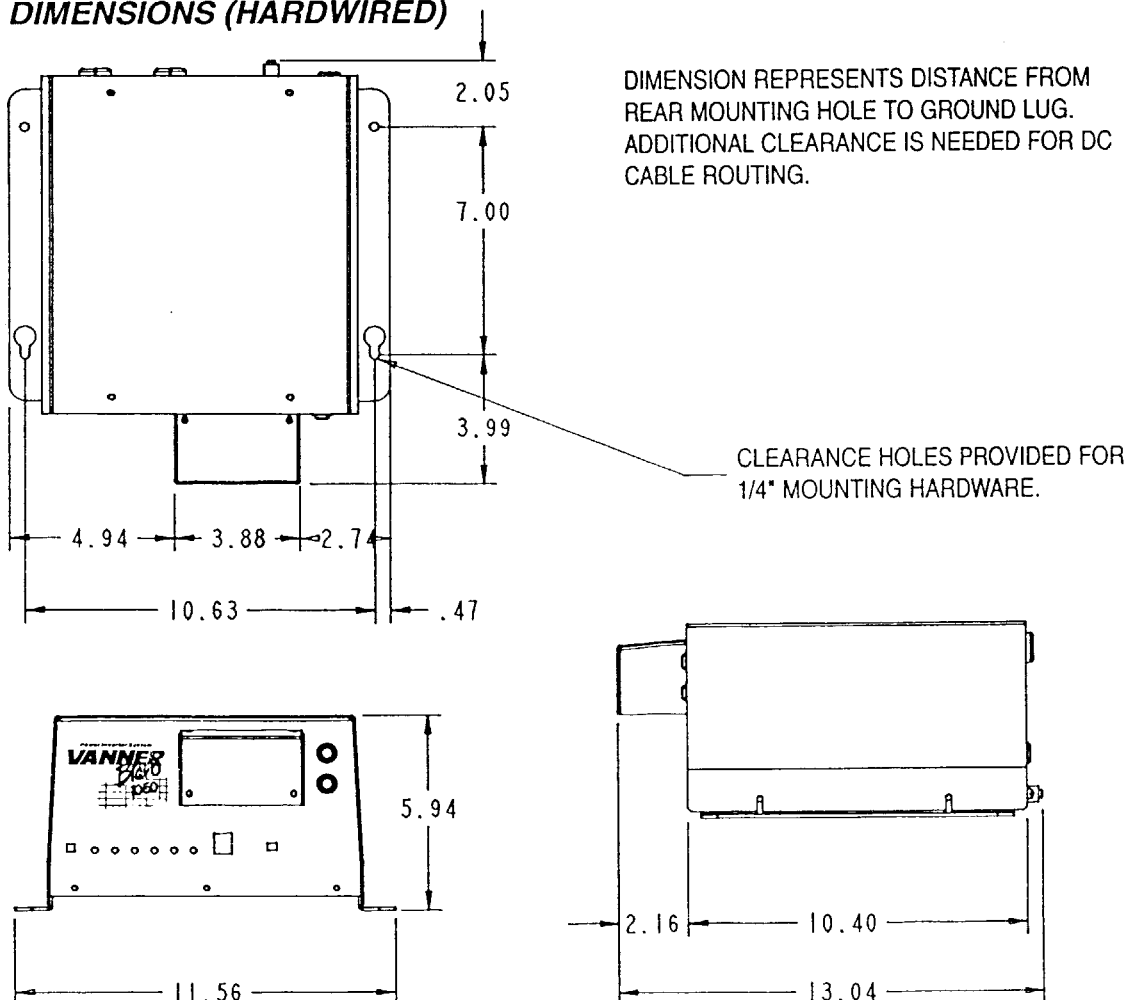
HARDWIRED UNIT SHOWN



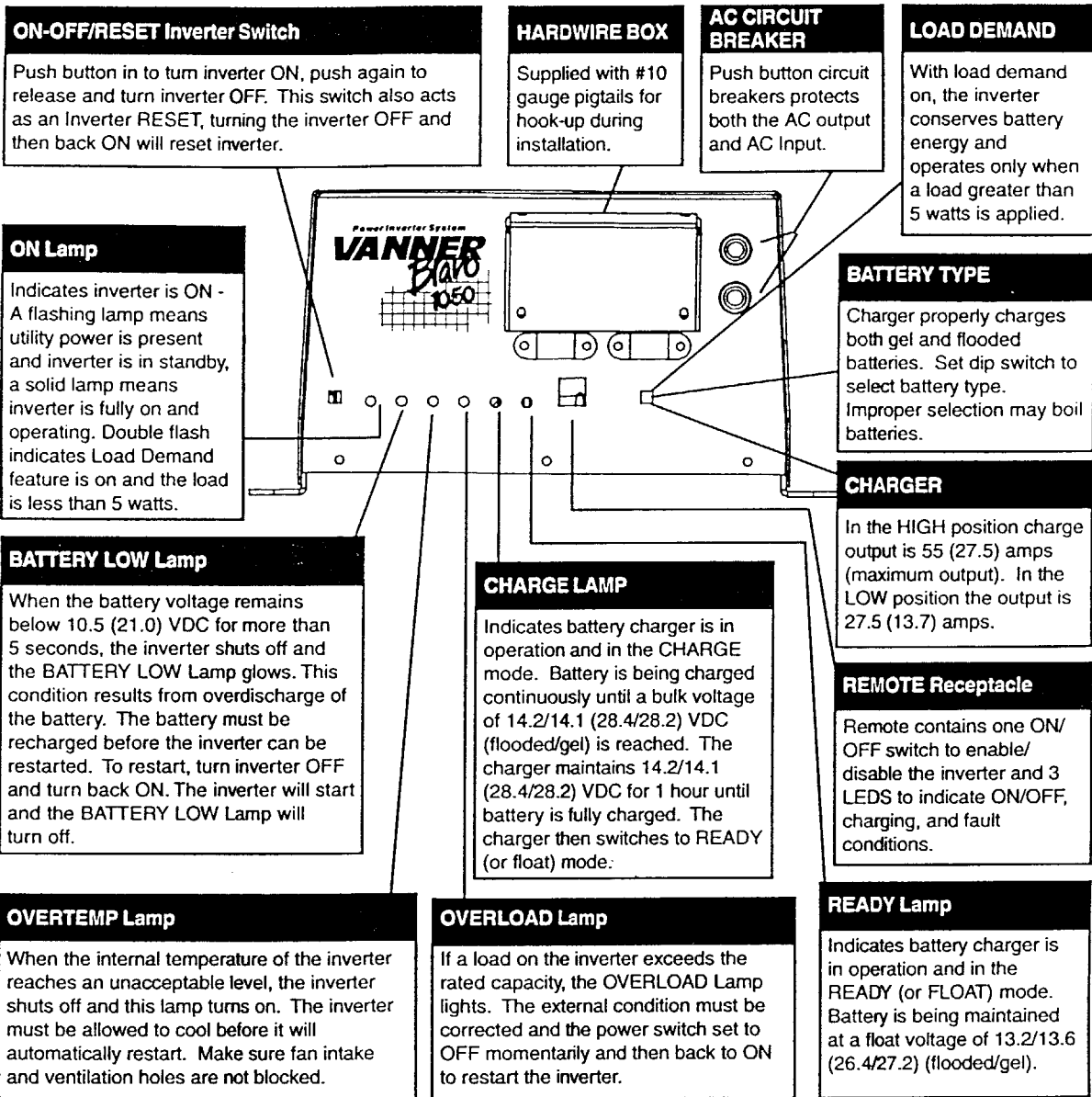
OPERATION:

1. With installation complete, apply AC input power to the unit. The charger will activate automatically, and either the CHARGE or READY Lamp will light depending on battery status. The unit is now charging the battery.
2. Apply an AC load with utility power present and the AC load is run directly off utility power. The ON-OFF/RESET Inverter Switch has no effect on the unit's AC output when utility power is present. The ON-OFF/RESET Inverter Switch only controls the inverter section of the unit.
3. Push in the ON-OFF/RESET Inverter Switch to the ON position. If utility power is present the ON Lamp will "FLASH." The "FLASH" indicates the inverter is standing by.
4. If utility power is removed or lost and the ON-OFF/RESET Inverter Switch is in the ON position, the unit will automatically switch to inverter and operate the AC load using battery power. The READY and CHARGE lamps will be off and the ON Lamp will light fully.
5. If utility power is restored, the inverter will (after 5 second delay) switch to battery charging and run the AC load direct. The ON Lamp will "FLASH" indicating inverter is in standby and either the CHARGE or READY Lamp will light depending on battery status.
6. With ON-OFF/RESET Button in the ON position, a double flash of the ON Light indicates that load demand is turned on and the load is less than 5 watts.

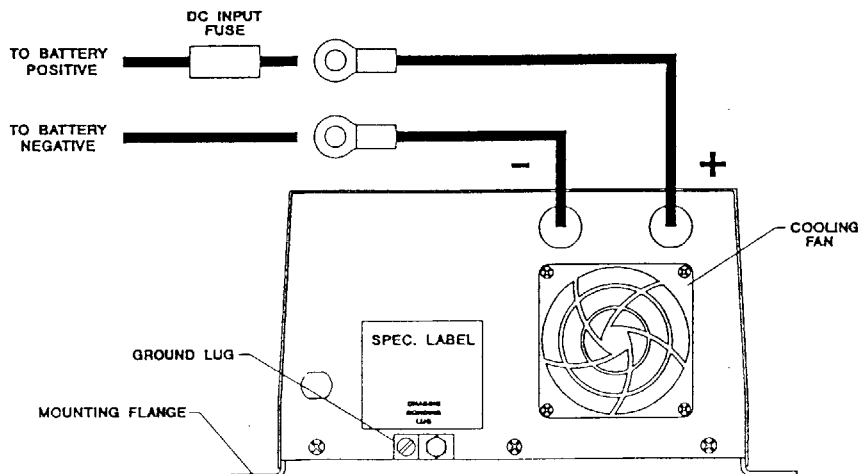
DIMENSIONS (HARDWIRED)



FRONT PANEL



BACK PANEL



TROUBLESHOOTING:

SYMPTOM	SOLUTION
ON Lamp does not light fully after pushing in the ON-OFF/RESET Inverter Switch.	<ul style="list-style-type: none">- If utility power is present, lamp will only FLASH—It double flashes if in Load Demand and the load is less than 5 watts- If utility power off, check battery connections- If utility power off, check DC fuses
ON lamp lights fully but AC load will not run.	<ul style="list-style-type: none">- Check and reset Circuit Breaker- Verify AC load and cord are in good condition
BATTERY LOW Lamp lights when AC load is applied.	<ul style="list-style-type: none">- Check battery connections- If battery voltage is less than 21.0 VDC, recharge battery- Add an additional battery
OVERTEMP Lamp lights after unit has been running for a period of time.	<ul style="list-style-type: none">- Remove objects that obstruct air flow to the Cooling Fan or from ventilation holes- Verify AC load is within unit's rated capacity
OVERLOAD Lamp lights when AC load is applied. Battery charger will not turn on. No CHARGE or READY Lamp.	<ul style="list-style-type: none">- Verify AC load is within unit's rated capacity- Try smaller AC load - Verify AC Input Cord is plugged into utility power and power is present- Check and reset Circuit Breaker- Wait 5 seconds after utility power is restored
DC fuse blows when connecting DC Input Cables.	<ul style="list-style-type: none">- Check for reverse polarity, RED cable to battery positive (+) and BLACK cable to battery negative (-)
<p>If further service assistance is required please contact your local Vanner Weldon Service Center. 1-800-AC-POWER</p>	