

# ***POWERTECH***

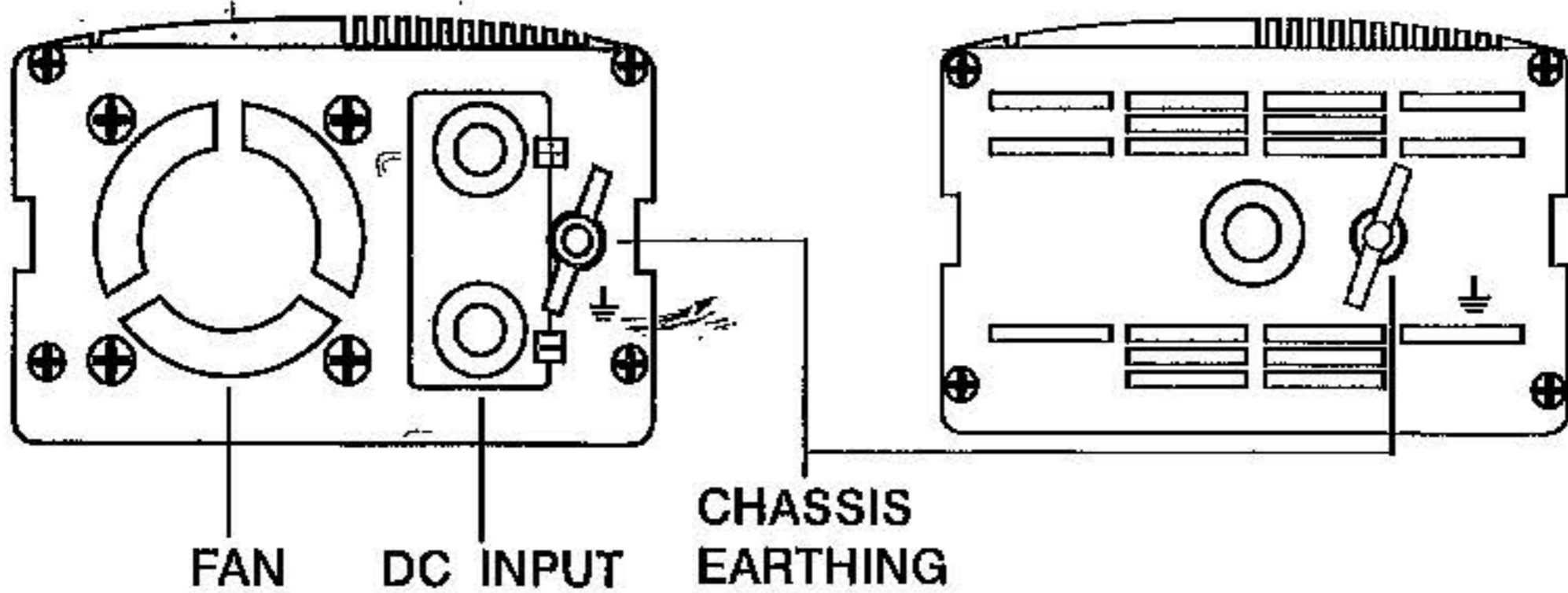
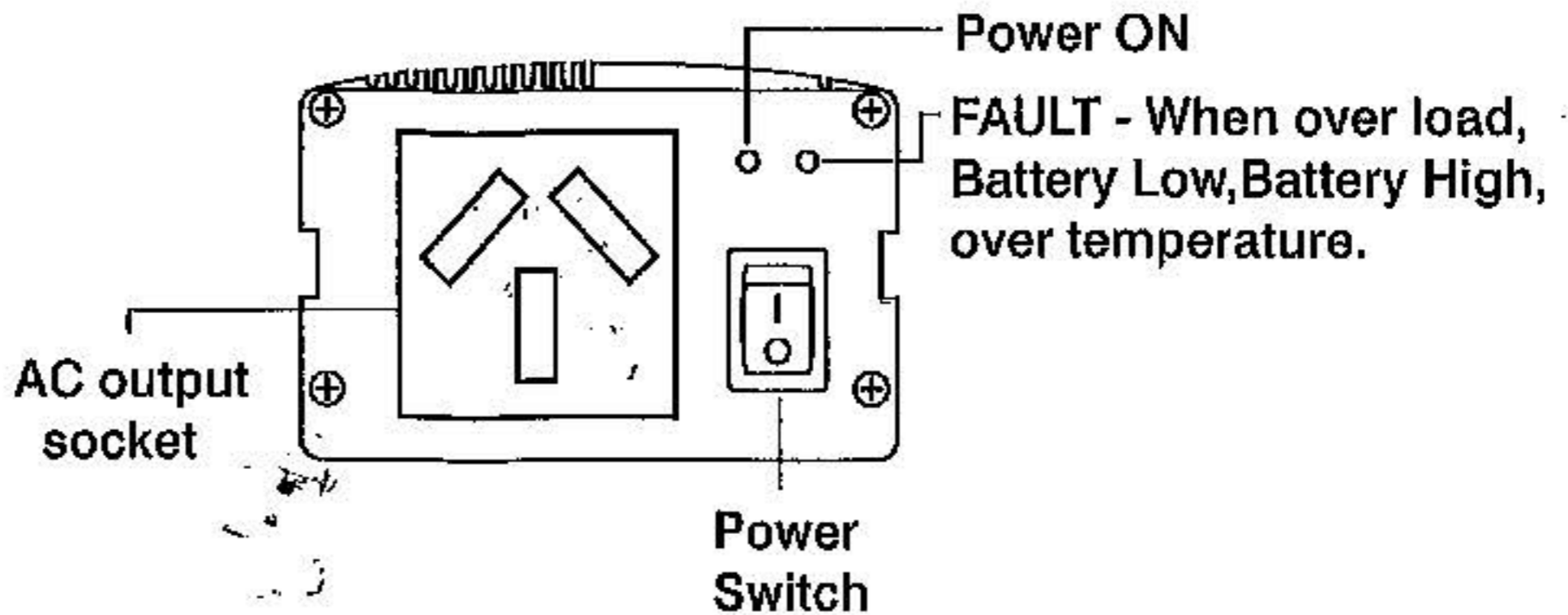
## **DC TO AC POWER INVERTER**

<b>12V 100 W</b>	MI-5100	<b>(SOFT-START)</b>
<b>12V 150 W</b>	MI-5102	
<b>12V 300 W</b>	MI-5104	
<b>12V 400 W</b>	MI-5106	
<b>24V 400 W</b>	MI-5107	
<b>12V 600 W</b>	MI-5108	

**Instruction Manual**



## 1. DESCRIPTION



## 2. CONNECTIONS

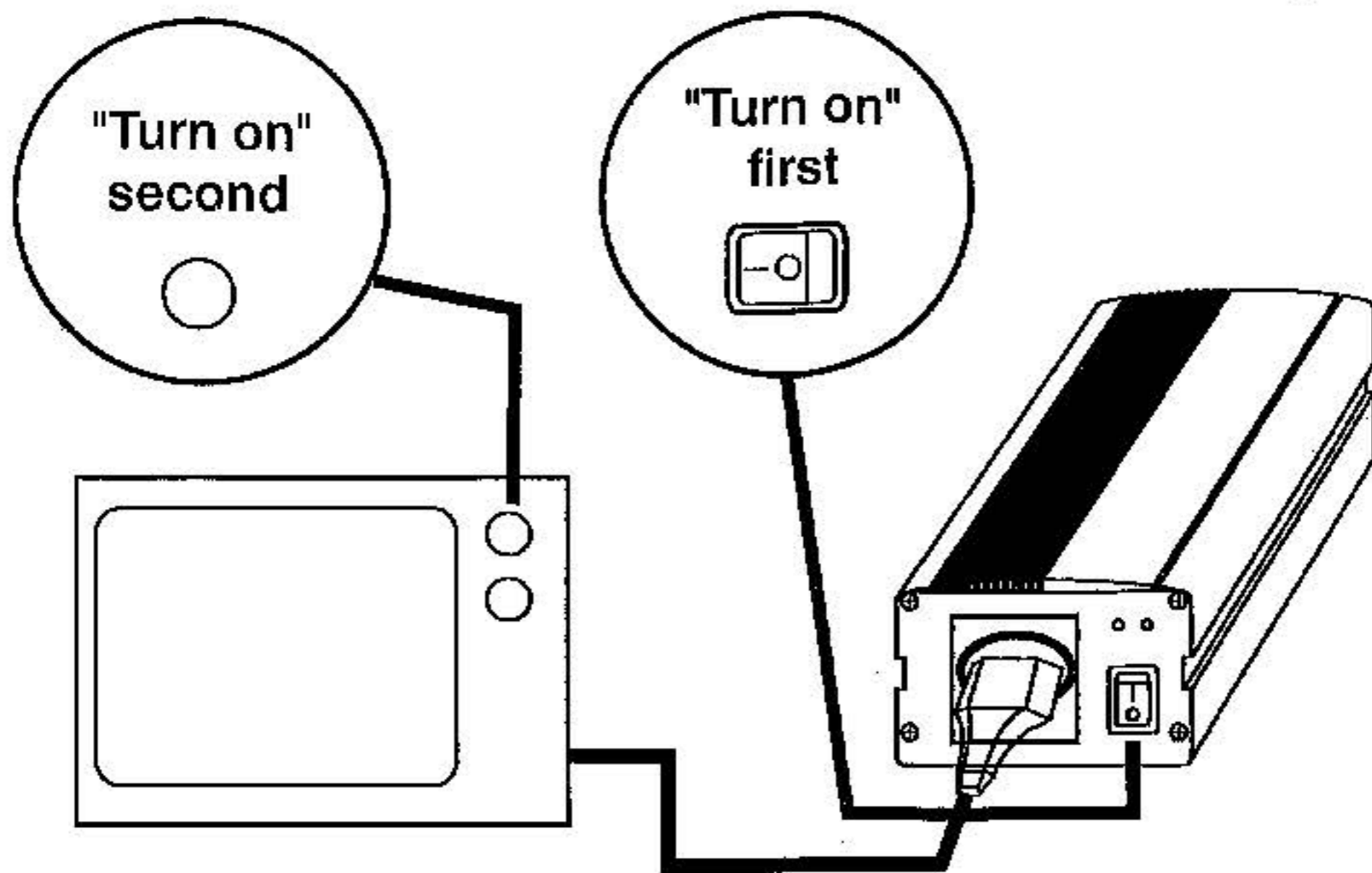
Connect the red cable from the "+" terminal (red terminal) of the battery to the + binding post (red connection) of the inverter and the black cable from the "-" terminal (black terminal) of the battery to the "-" binding post (black connection) of the inverter. (for 150w - cigarette plug only)

Be sure to tight the screws in order to avoid loose connection.

Cable length  $\leq$  2m.

### 3. OPERATION

When connected to an appliance, remember to turn on the inverter before turning on the appliance. If the buzzer sounds during operation, this indicates that the battery voltage is very low and that the inverter will be shut-down in couple minutes. (depends on loading and battery. When over load happens it will auto soft - start, until user reduces loading. soft - start function.)



### 4. FUSE

Please check the fuse in the cigarette plug if the blackout indicator is not lit during operation. When replace blown fuses, please refer to "15". Specification on page 7 , page 8 and page 9.

### 5. OUTPUT CAPACITY

The inverter will switch off automatically if the total wattage of the electrical appliance exceeds the inverter's output capacity. This will also happen if the temperature of the inverter exceeds 55° C due to prolonged use.

## **6.SPECIAL RECOMMENDATIONS**

Unplug the AC inverter when not in use.

Unplug the AC inverter when starting the vehicle's motor.

If the AC inverter makes a beeping sound:switch off your appliance, unplug the inverter and restart your vehicle's engine. The beeping sound is simply the low-battery warning which indicates that the voltage of your battery is getting low. Your inverter will shut down automatically if you do not restart your engine and continue the use of your inverter. This will leave your vehicle's battery at about 10.5VDC(21VDC when using 24V inverter /42VDC when using 48V inverter), enabling you to start your engine and resume operation of the inverter. It also eliminates the possibility of being stranded with a dead battery.

To avoid over-discharging the battery, it is advisable to let your engine run for 10 to 20 minutes after every 2-3 hours of using the AC inverter. This allows your vehicle's battery to recharge.

Please remember to connect the "+" wire to the "+" terminal and the "-" wire to the "-" terminal if you choose to use an adapter in order to establish a direct connection between the AC Inverter and the battery terminals. **IF YOU CONNECT THE WIRES TO INCORRECT TERMINALS, THE POLARITY WILL BE REVERSED AND THIS WILL DAMAGE THE FUSE. REVERSED POLARITY SHOULD BE AVOIDED.**

Please remember to disconnect AC Inverter before using the battery charger to replenish you battery's voltage. Failure to disconnect the inverter prior to connecting a charger may result in an input spike which will damage the inverter.**CONNECTING THE INVERTER'S INPUT TO A BATTERY CHARGER WILL VOID THE WARRANTY AND MAY DAMAGE THE INVERTER.**

Make sure that the battery's voltage never exceeds 15VDC (30VDC when 24V version is used/60VDC when 48V version is used).**CONNECTING THE INVERTER TO A DC POWER SOURCE GREATER THAN 15VDC( MORE THAN 30VDC WHEN YOU ARE USING 24V INVERTER / MORE THAN 60VDC WHEN YOU ARE USING 48V INVERTER).THE INVERTER WILL BE SHUT DOWN AUTOMATICALLY.**

## **7.ADDING EXTENSION CORDS**

We recommend that the buyer refrain from using an extension cord between the DC power source and the inverter's DC input. Connecting an extension cord to the DC input will create a voltage drop, entailing reduced efficiency and output. Instead, we recommend the use of an extension cord between the AC output and the AC appliance. You may use up to 100ft(30m) of high quality extension cord. A longer cord may result in reduced power.

## **8.GROUNDING CONNECTION**

**WARNING: BEFORE USING THIS INVERTER YOU MUST PROVIDE A GROUND CONNECTION TO THE INVERTER.**

- On the rear panel of the Inverter is a terminal fitted with a wing-nut. This terminal is connected to the case of the Inverter and also to the earth terminal of the AC output socket. The use of this terminal will depend on your particular installation. In any installation, heavy duty, queen-insulated wire should be used for this connection.
- In a stationary land based installation, the earth terminal should be connected to a metal earthing stake driven into the ground to a depth of 1.2m or more, If the battery system powering the Inverter does not have a connection to ground, one of the battery terminals (commonly the negative terminal) should also be connected to the earthing stake.
- In a vehicles where the Inverter is wired directly to the battery, the earth terminal is simply connected to the vehicle chassis. If the Inverter is to be used in a vehicle on a temporary basis and will be powered via the cigarette lighter socket in the vehicle, the earth terminal should be connected via a short link to either the negative or positive DC input terminal of the Inverter, depending on whether the vehicle has a negative or positive chassis connection. However when using the Inverter to power equipment used outside the vehicle, an earthing stake should also be used, as described above.
- In a boat, the earth terminal should be connected to the existing grounding system, which may be the hull of the craft, or a network of ground wires

## 9. MEASURING AC VOLTAGES

The output wave of the AC inverter is a MODIFIED SINEWAVE. If you choose to measure the AC output voltage, you must use an AUTHENTIC RMS VOLT METER. Using any other type of voltage measuring device will result in an AC voltage reading that is up to 20 to 30 volts lower than the rated value. The reading will only be accurate when using an authentic RMS voltmeter.

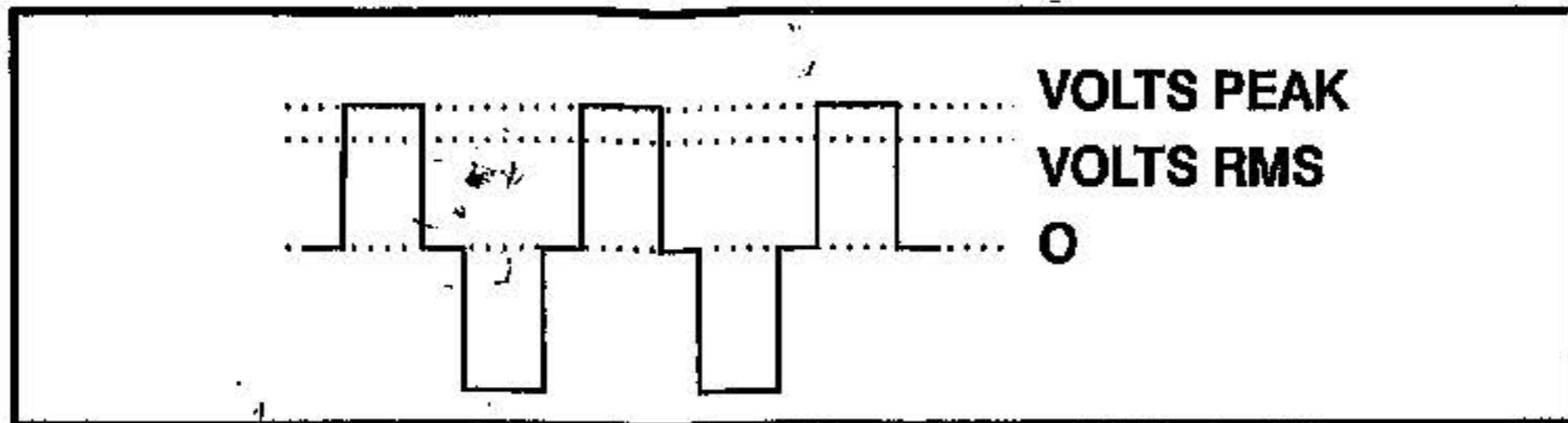
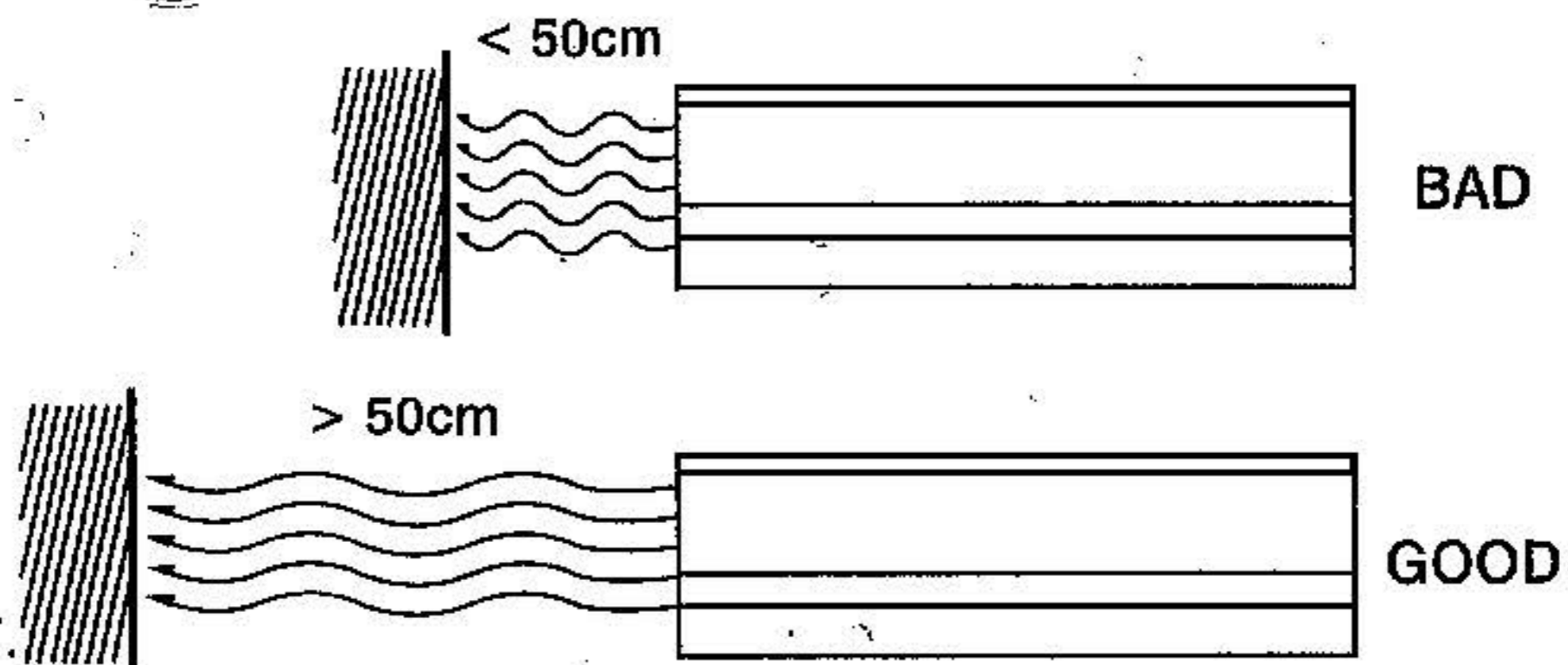


FIGURE 1: D/A INVERTER-MODIFIED SINEWAVE

## 10. VENTILATION

**IMPORTANT!** During operation, make sure the fan keeps revolving. check the inverter for possible malfunctions if the fan does not work when this unit is being used.

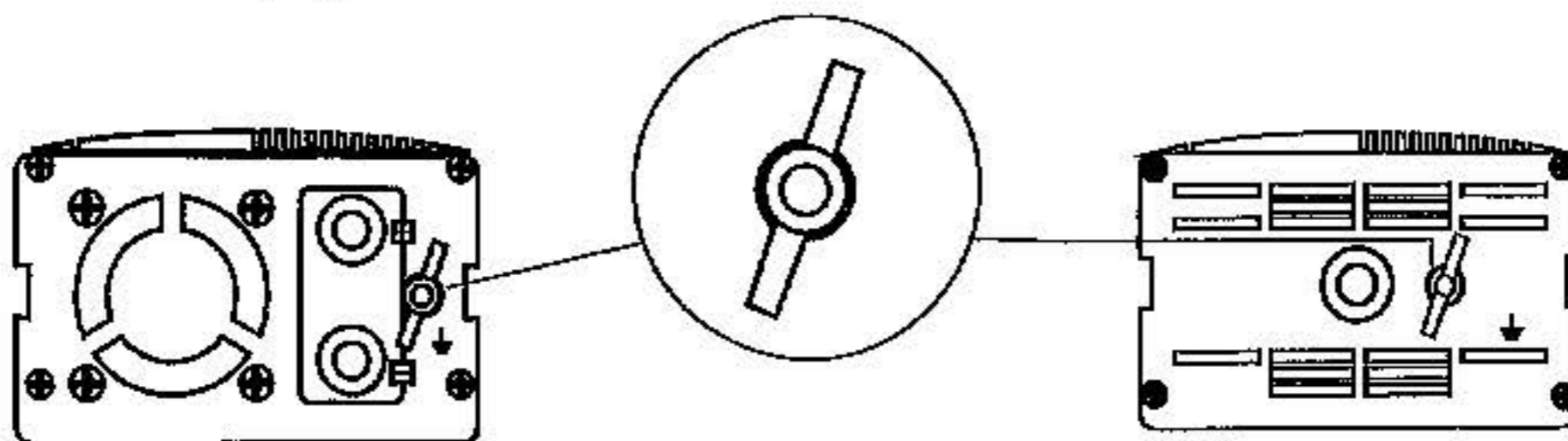
Make sure the fan is not blocked in order to avoid poor ventilation.



Note: "The cooling fan automatically switches on and off, As required, to maintain safe working temperature."

## 11. CHASSIS EARTHING

The chassis earthing lug should be connected to an earthing point, which will vary depending on where the power inverter is installed. In a vehicle, connect the chassis ground lug to the chassis of the vehicle. In a boat, connect to the boat's grounding systems. In a fixed location, connect to earth.



## 12. CAUTION

In case of trouble with the AC output, e.g. short-circuit, overload, etc...the protection circuit will automatically cut off the output.

In such cases:

- (A) switch off the power at once
- (B) disconnect all units
- (C) check the connected devices
- (D) use the units again as soon as any problems concerning the connected devices have been solved

Always keep the inverter in an environment which is:

- (A) Well-ventilated
- (B) Not exposed to direct sunlight or any other heat source
- (C) Inaccessible to children
- (D) Safe from water/moisture, oil or grease
- (E) Safe from any flammable substance

If the inverter is connected in the wrong way, this will void the warranty.

## 13. MAINTENANCE

Very little maintenance is required to keep your Inverter operating properly. You should clean the exterior of the unit periodically with a damp cloth to prevent accumulation of dust and dirt. At the same time, tighten the screws on the DC input terminals.

## 14.NOTE

All specifications typical at nominal line, half load, and 25°C unless otherwise noted. Specifications subject to change without notice

**WARNING: DO NOT DISASSEMBLY THE UNIT. HAZARDOUS VOLTAGE!  
DANGER!**

**PLEASE RETURN TO THE DEALER IF YOU FIND ANY PROBLEM WITH THE UNIT.**

## 15.SPECIFICATION

Model No.	MI-5100	MI-5102
DC input voltage	DC 10-15V	DC 10-15V
Output power	100W	150W
Output power surge	300W	450W
Low battery alarm	10.5±0.5V	10.5±0.5V
Low battery shut down	10±0.5V	10±0.5V
High battery shut down	15.5±0.5V	15.5±0.5V
Short-circuit protection	YES	YES
No load current	< 0.3A	< 0.3A
Alarm and Thermal shut down	60°C±5°C	60°C±5°C
DC input fuse	15A	20A
Dimensions(LxWxH)	165x91x58 mm	165x91x58 mm
Net weight	0.85 KGS	0.85 KGS


Model No.	MI-5104
DC input voltage	DC 10-15V
Output power	300W
Output power surge	1000W
Low battery alarm	10.5±0.5V
Low battery shut down	10±0.5V
High battery shut down	15.5±0.5V
Short-circuit protection	YES
No load current	< 0.3A
Alarm and Thermal shut down	60°C±5°C
Alligator clip FUSE	35A
Cigarette plug FUSE	15A
Dimensions(LxWxH)	190x91x58 mm
Net weight	1.1 KGS



Model No.	MI-5106	MI-5107
DC input voltage	DC 10-15V	DC 20-30V
Output power	400W	400W
Output power surge	1200W	1200W
Low battery alarm	10.5 ±0.5V	21 ±1V
Low battery shut down	10 ±0.5V	20 ±1V
High battery shut down	15.5 ±0.5V	30 ±1V
Short-circuit protection	YES	YES
No load current	< 0.3A	< 0.3A
Alarm and Thermal shut down	60°C ± 5°C	60°C ± 5°C
Alligator clip FUSE	25A*2	25A
Cigarette plug FUSE	15A	10A
Dimensions(LxWxH)	190x91x58 mm	190x91x58mm
Net weight	1.2 KGS	1.2 KGS

Model No.	MI-5108
DC input voltage	DC 10-15V
Output power	600W
Output power surge	1500W
Low battery alarm	10.5 ±0.5V
Low battery shut down	10 ±0.5V
High battery shut down	15.5 ±0.5V
Short-circuit protection	YES
No load current	< 0.3A
Alarm and Thermal shut down	60°C ± 5°C
DC input fuse	40A *2
Dimensions(LxWxH)	242x91x58 mm
Net weight	1.7 KGS

AC output voltage : 240V

AC output socket : 

Frequency ± 2 % : 50Hz

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