

# SOLAR<sup>®</sup> Owner's Manual

**Model Nos. 2001/3001**  
**Commercial Jump Starter**



## **⚠ WARNING**



Failure to follow instructions may cause damage or explosion, always shield eyes. **Read entire instruction manual before use.**

## **⚠ WARNING**

This product can expose you to lead, which is known to the State of California to cause birth defects or other reproductive harm, and Vinyl-Chloride, Styrene and Acrylonitrile, which are known to the State of California to cause cancer.

**Congratulations!** You have just purchased the most versatile and dependable unit on the market today.

**Keep the unit plugged in when not in use and it will provide long, continuous service and satisfaction.**







The **SOLAR** Jump Starter is specifically designed to jump start and/or charge 12 Volt lead-acid batteries. Follow all battery/vehicle manufacturer's jump starting or charging instructions. Our units will deliver 600 Amp-1000 Amp starting power depending upon the model and battery installed.

**DO NOT JUMP START WITH AC POWER CORD CONNECTED TO 110 VOLT AC POWER SOURCE.**

The unit's charger will maintain the it's internal battery and recharge most lead-acid batteries within two hours. It will automatically shut off. The ampere needle flickering at zero indicates the battery is fully charged. The charger constantly monitors it's storage battery or the battery it's charging. It may be used to charge maintenance-free, conventional, deep cycle, gelled electrolyte, and recombination batteries.

The automatic shut off air compressor (Model No. 3001) will fill a tire in minutes to a pre-selected pressure (30-75 lbs.). The 150 PSI compressor is specifically designed for automotive and small truck tires. **DO NOT INFLATE TIRES OR FLIP "ON/OFF" SWITCH "ON" WITH UNIT CONNECTED TO 110 AC POWER SOURCE.**

<b>⚠ WARNING</b>	
	<b>DO NOT TIP UNIT OR LAY UNIT FLAT WITH BATTERY INSTALLED!</b>

<b>⚠ WARNING</b>	
	Read these instructions completely before using the <b>SOLAR</b> Jump Starter and save them for future reference. Before using the <b>SOLAR</b> Jump Starter to jump start a car, truck, boat or to power any equipment, read these instructions and the instruction manualsafety information provided by the car, truck, boat or equipment manufacturer. Following all manufacturers' instructions and safety procedures will reduce the risk of accident.
	Working around lead-acid batteries may be dangerous. Lead-acid batteries release explosive gases during normal operation, charging and jump starting. Carefully read and follow these instructions for safe use. Always follow the specific instructions in this manual and on the <b>SOLAR</b> Jump Starter each time you jump start using the <b>SOLAR</b> Jump Starter. All lead-acid batteries (car, truck and boat) produce hydrogen gas which may violently explode in the presence of fire or sparks. <b>Do not smoke, use matches or a cigarette lighter while near batteries.</b> Do not handle the battery while wearing vinyl clothing because static electricity sparks are generated when vinyl clothing is rubbed. Review all cautionary material on the <b>SOLAR</b> Jump Starter and in the engine compartment.
	Always wear eye protection, appropriate protective clothing and other safety equipment when working near lead-acid batteries. Do not touch eyes while working on or around lead-acid batteries.
	Always return clamps to their proper storage positions, away from each other or common conductors. Improper storage of clamps may cause the clamps to come in contact with each other, or a common conductor, causing the battery to short circuit and generate high enough heat to ignite most materials.
	Use extreme care while working within the engine compartment, because moving parts may cause severe injury. Read and follow all safety instructions published in the vehicle's Owner's Manual.
	While the battery in the <b>SOLAR</b> Jump Starter is a sealed unit with no free liquid acid, batteries being jump started with the <b>SOLAR</b> Jump Starter unit likely contain liquid acids which are hazardous if spilled.

## SAFETY INSTRUCTIONS

1. Use of an attachment not recommended or sold by manufacturer may result in a risk of fire, electric shock, or injury to persons.
2. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting unit.
3. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
4. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure pins on plug of extension cord are the same number, size, and shape as those of plug on unit; extension cord is properly wired and in good condition; wire size is large enough for the length of cord as specified in the following chart:

Length in feet:	25	50	100	150
Cord AWG size:	16	12	10	8

5. Do not operate unit with damaged cord or plug - replace them immediately.
6. Do not disassemble unit – take it to/or call a qualified technician when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
7. To reduce risk of electric shock, unplug unit from outlet before attempting any maintenance or cleaning.

## PERSONAL SAFETY PRECAUTIONS

1. Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
2. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
3. NEVER smoke or allow a spark or flame in vicinity of battery or engine.
4. Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
5. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead acid battery can produce a short circuit current high enough to weld a ring or the like to metal, causing a severe burn.
6. When using unit as charger, charge a LEAD-ACID battery only. It is not intended to supply low-voltage power for applications other than battery charging. Do not use with batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage property.
7. NEVER JUMP START OR CHARGE a frozen battery. Any battery that is suspected of being frozen must be thawed before jump starting or charging.

### **GROUNDING AND AC POWER CONNECTION INSTRUCTIONS**

Unit should be grounded to reduce risk of electric shock. Unit is equipped with an electric cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

#### **⚠ DANGER**

Never alter the AC cord or plug provided – if it will not fit outlet, have proper outlet installed by a qualified electrician. This unit is for use on a 120 Volt, 60 Hz cycle circuit. A temporary adapter may be used to connect this plug to a two-pole receptacle if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. Before using adapter, be certain that center screw of outlet plate is grounded. The green rigid ear or lug extending from adapter must be connected to a properly grounded outlet – make certain it is grounded. If necessary, replace original outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet cover plate and make ground connection to grounded outlet.

# SELECTING AND INSTALLING THE BATTERY

## **BATTERY SELECTION**

### 1. Battery Size (Group) to Use:

Model No. 2001 – Group 31 1000 CCA and up, Standard Flooded or AGM.

Model No. 3001 – Group 31 1000 CCA and up, Standard Flooded or AGM.

2. A high quality battery will last longer and perform better than a marginal quality battery.
3. Use a battery with a sealed top or with screw type flush fill caps. This will help prevent acid leakage should unit be inadvertently laid flat or turned over.
4. Use battery with 3/8" threaded studs.
5. A high quality battery emits less gases as it recharges. Using this type of battery will extend charger and wiring life. Battery acid and petroleum resistant wiring is used in this unit.
6. Check battery water level every 90-120 days to extend battery life.

## **BATTERY INSTALLATION – ALL MODELS**

1. Remove back panel by removing (2) 1/4" – 20 bolts securing panel.
2. Place battery on back edge of unit with negative facing inward.
3. Connect Negative (–) jumper cable with Black (NEG –) wire to Negative (N, –) stud of battery with 3/8" nut provided. (See Figure 1a.)
4. Slide battery under internal ladder structure to front of unit moving Negative (–) jumper cable to left of bottom platform. Battery will slightly drop down when fully inserted.
5. Connect Positive (+) jumper cable with Red (POS +) wire to Positive (P, +) stud of battery with 3/8" nut provided. (See Figures 1b and 1c.)
6. Replace back panel and secure with (2) 1/4" – 20 bolts.
7. Volt gauge should read between 12.5 and 14 volts.
8. Plug in unit to charge battery. Amp gauge will take 3 seconds to register battery and apply proper charge rate.
9. When amp gauge approaches "2" or less and flickers, battery is fully charged and unit is ready to use.
10. All units ship with the charging mode set to the Standard Flooded Battery charging setting. This setting should be changed if you choose to install an AGM battery in your unit. To change this setting, locate the control switch on the charging board inside the unit and change the setting to AGM mode.



Figure 1a



Figure 1b



Figure 1c

# OPERATING INSTRUCTIONS

## JUMP STARTING

For box units equipped with installed vehicle harness, leave vehicle running for best performance.

**WARNING: DO NOT JUMP START WITH AC POWER CORD CONNECTED TO 120VAC POWER SOURCE. NEVER JUMP START A FROZEN BATTERY. A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:**

1. If vehicle has 12 Volt system with dual batteries, place cable on battery closest to starter.
2. Position DC jumper cables to reduce risk of damage by hood, door, or moving engine part.
3. Stay clear of fan belts, pulleys, and other parts that can cause injury to persons.
4. Connect POSITIVE (RED) clamp from unit to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clamp to vehicle chassis or engine block away from battery last.  
**Note:** Do not connect clamp to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
5. Start the vehicle (turn on the vehicle ignition).  
**Note:** If the vehicle doesn't start within 6 seconds, let the unit cool for 3 minutes before attempting to start the vehicle again or you may damage the unit.
6. When disconnecting unit, **ALWAYS** disconnect the negative clamp from vehicle chassis first. Remove positive clamp from battery terminal second.

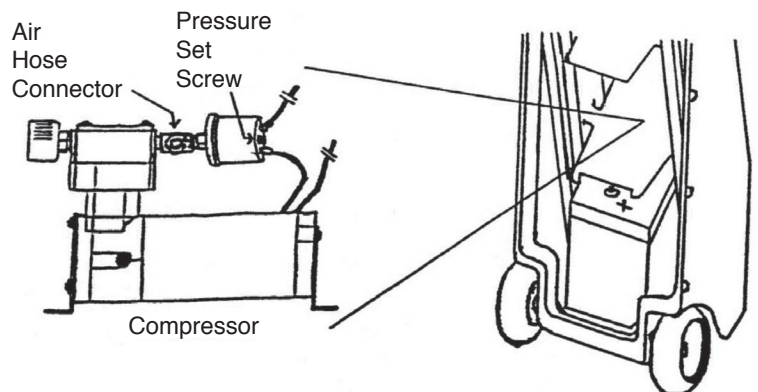
## OPERATING THE UNIT AS AN AIR COMPRESSOR (Model No. 3001 Only)

**Warning: DO NOT INFLATE TIRES OR FLIP AIR COMPRESSOR "ON/OFF" SWITCH WHILE THE UNIT IS PLUGGED INTO 110 AC POWER SOURCE!**

1. Snap air chuck on tire valve stem (some wheel covers may require use of valve stem extension).
2. Flip "ON/OFF" air switch on front panel to "ON" position.
3. Tire will inflate to preset pressure and compressor will shut off.
4. Disconnect air chuck from tire valve stem (compressor will come on again).
5. Flip "On/Off" air switch on front panel to "Off" position.
6. See Compressor section below to adjust shut off pressure.

## Adjusting the Compressor Shut Off Pressure

1. Remove back panel by removing (2) 1/4" – 20 bolts securing panel.
2. Locate the pressure switch and set screw (center of switch).
3. When adjusting shut-off pressure, turn no more than 1/2 turn between settings.
4. To increase pressure setting, turn clockwise (1/4 turn = approximately 4 lb.).
5. To decrease pressure setting, turn counter-clockwise (1/4 turn = approximately 4 lb.).
6. Check pressure setting by inflating a tire and checking tire pressure with an air gauge.  
If more adjustment is necessary, return to step 4 or 5.
7. Secure back panel with (2) 1/4" – 20 bolts bolts.



## RECHARGING THE UNIT

The charging circuitry in your unit utilizes a multi-phase, smart charging routine for more beneficial charging of the onboard battery for enhanced reserve capacity and longer battery life.

The charging circuitry features the ability to properly charge both Standard Flooded and AGM batteries. This is an important enhancement, as AGM batteries are designed for better cycling (charge/discharge) longevity and are spill-proof, which is important in a mobile application such as this.

- All units ship with the charging mode set to the Standard Flooded Battery charging setting. This setting should be changed if you choose to install an AGM battery in your unit. To change this setting, locate the control switch on the charging board inside the unit and change the setting to AGM mode.
- Take care to ensure that cables and clamps are properly stored and secure and that the AC power cord is not damaged in any way.
- Connect the AC power cord to a properly grounded outlet.
- The charging routine is fully automatic and will bring the onboard battery to full charge and then turn off. The charger will turn back on if the battery discharges for any reason.
- The charger can be left connected to the AC outlet with no harm to the onboard battery.

## TROUBLESHOOTING

### ***PROBLEM: Unit does not jump start.***

#### ***POSSIBLE CAUSE***

Poor grip connection  
Low/defective battery  
Loose jumper cable connection to battery

#### ***SOLUTION***

Check grip connection  
Load test/charge/replace battery  
Tighten battery connections

### ***PROBLEM: Unit does not charge.***

#### ***POSSIBLE CAUSE***

Poor grip connection  
Faulty 110 AC outlet  
Bad plug on unit  
Loose/defective connections  
Defective amp gauge  
Faulty charger

#### ***SOLUTION***

Check grip connection  
Check or change outlet  
Check continuity of plug pins/replace plug  
Check unit for loose connections  
Replace gauge  
Replace charger

### ***PROBLEM: Unit does not inflate tires.***

#### ***POSSIBLE CAUSE***

Low/defective battery indicated by clicking of circuit breaker  
Loose/defective connections  
Defective air pressure switch  
Defective "On/Off" switch  
Defective compressor

#### ***SOLUTION***

Recharge/replace battery  
Check unit for loose connections  
Replace pressure switch  
Replace "On/Off" switch  
Replace compressor