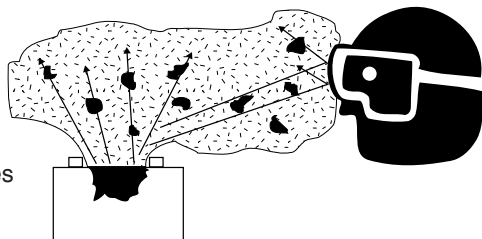


SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

DANGER!

RISK OF BATTERY EXPLOSION FROM HYDROGEN GAS.
MAY RESULT IN BLINDNESS, SERIOUS INJURY,
PERMANENT DISFIGUREMENT AND SCARRING.

ALWAYS assume that any battery might explode when you least expect it. Wear safety glasses for your protection.



Batteries generate explosive hydrogen gas, even during normal operation. People have been injured by battery parts flying in an explosion. They can explode under normal operating conditions, such as starting your car. They can explode under abnormal conditions, such as jump starting, or if short circuited by a tool. They can explode in a parked car or sitting on a table.

To help reduce the risk of these dangers and injury, it is of the utmost importance that each time before using your charger, you read and understand this manual, and any warnings and instructions by the battery manufacturer. Follow these instructions exactly.

TO HELP REDUCE THIS RISK:

1. Wear Personal Protective Equipment

- **ALWAYS** wear complete eye protection (THAT PROTECTS EYES FROM ALL ANGLES).

2. Avoid Flames and Sparks Near Battery and Fuel

- **ALWAYS** keep flames, matches, lighters, cigarettes or other ignition sources away from battery.
- **DO NOT** put flammable material on or under charger. **DO NOT** use near gasoline vapors.
- A tool touching both battery posts or battery post and car metal parts is a short circuit and will spark. When using metal tools on or near battery be extra cautious to reduce risk of short circuit, possibly causing a battery explosion. **DO NOT** drop a tool on battery.

3. Reduce Explosive Gas (hydrogen)

- Before connecting charger, **ALWAYS** add water to each cell until battery acid covers plates to help purge extra gas from cells. **DO NOT** overfill. Battery acid expands during charge. After charging fill to level specified by battery manufacturer. For a battery without removable caps (maintenance free battery), carefully follow manufacturer's instructions on charging.
- Charge battery with caps in place. Most U.S. batteries are made with flame arresting caps. **DO NOT** pry caps off sealed batteries. Place wet cloth on batteries with non-flame arresting caps.
- Be sure area around battery is well ventilated before and during charging process. **NEVER** charge in a closed-in or restricted area.

4. Stay Away From Battery When Possible

- **NEVER** put face near battery.
- **ALWAYS** locate charger as far from battery as DC cables permit.
- **ALWAYS** keep other people away from the battery. They are not wearing safety glasses like you.

5. Avoid Contact With Battery Acid

- Battery posts may have **acid corrosion**. **DO NOT** get corrosion in your eyes. **Avoid** touching eyes while working near battery.
- **ALWAYS** have plenty of fresh water and soap nearby in case battery acid contacts eyes, skin or clothing. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with cold running water for at least fifteen (15) minutes and get medical help immediately.
- In very cold weather a discharged battery may freeze. **NEVER** charge a frozen battery. Gases may form, cracking the case, and spray out battery acid.

6. Follow Other Manufacturers' Recommendations

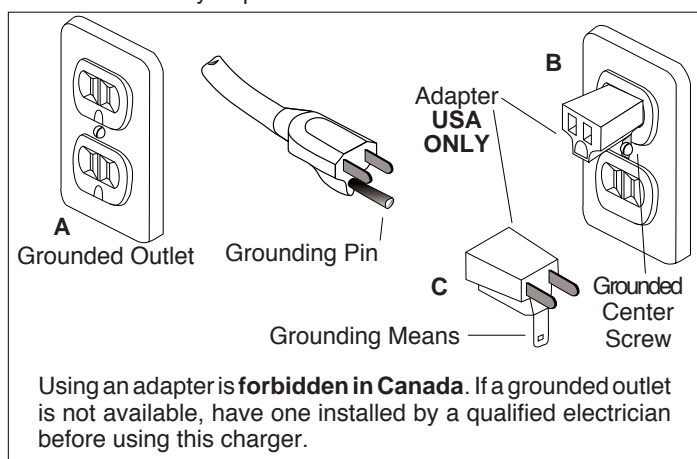
- Before using charger, read all instructions for, and caution markings on: (1) charger, (2) battery, and (3) related product using battery. Follow their recommended rate of charge.

TO HELP REDUCE THIS RISK:

1. PROPER GROUNDING AND AC POWER CONNECTION

Charger **MUST** be grounded to reduce risk of electric shock. Charger 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.** If you ever feel even a slight shock from this or any electrical appliance, stop, walk away. Turn off electricity to outlet, and have it inspected by an electrician. You may have a dangerous, improperly wired outlet.

DANGER — **NEVER** alter AC power cord or plug provided — if it will not fit outlet, have proper outlet installed by a qualified electrician or proceed as shown in the illustration below. Improper connection can result in a risk of an electric shock. This battery charger is for use on a nominal 120 volt circuit (common household current), and has a grounding plug illustrated in sketch A. If properly grounded outlet is not available, a temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a two-pole receptacle if the center screw is grounded. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.



DANGER — Before using adapter as illustrated, be certain that center screw of outlet plate is grounded. The green colored 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.

2. Remove Jewelry

- **ALWAYS** remove personal metal items (such as rings, bracelets, necklaces and watches) when working with a battery. A short circuit through one of these items can melt it causing a severe burn.

3. Avoid Charger Abuse

- To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- **DO NOT** disassemble charger. Take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- **DO NOT** expose charger to rain, snow, water, gas, oil, etc.
- **DO NOT** operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service person.
- **DO NOT** block air holes in top or bottom of charger. **DO NOT** put charger on vehicle seat. **DO NOT** set a battery on top of charger.

4. Proper Use of Charger and Wiring

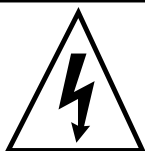
- An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, use **ONLY** a grounded, 3-wire type cord. **NEVER** use a 2-wire cord and an adapter! The cord **MUST** be plugged into a grounded outlet. Make sure it is properly wired, in good electrical condition, and wire size is large enough for AC ampere rating of charger.
- To reduce risk of damage to plug and cord when disconnecting charger, **ALWAYS** pull on plug — **NEVER** on cord.
- Locate cord so that it will not be stepped on, tripped over, or otherwise subject to damage or stress. **DO NOT** lay extension cord on battery or charger. **DO NOT** operate charger with damaged cord or plug — replace them immediately.

CAUTION: DO NOT allow electrical cords to lie on the ground where they may be run over and damaged. A damaged cord may have an electrical shock or fire hazard. Inspect (by a qualified person) cords that may have been run over to eliminate these hazards.

DANGER!

RISK OF ELECTRICAL AND FIRE HAZARD.
MAY RESULT IN DEATH, SERIOUS INJURY,
SHOCK OR BURNS.

This charger, like all electrical products, **MUST** be treated with respect. Follow these instructions to reduce electrical hazard risk.



Operating Instructions

- With the AC plug disconnected from the power source, and observing correct polarity, connect the DC output cord to the battery posts.
- With the AC power switch turned OFF, connect the AC plug to the power outlet.
- Turn the AC power switch ON. The charger should now be ON as indicated by the red **POWER ON** lamp.
- If so equipped, the front panel meters will indicate the charging DC volts and amps.
- The red **CURRENT LIMIT ON** lamp turns ON if the batteries are severely discharged and attempting to draw more charging current than the battery charger is designed to provide. It is normal, when the charger is first energized, for this lamp to turn ON for just a short time due to the initial inrush charging current.
- When the yellow **EQUALIZE MODE** lamp turns ON, the battery is approximately 70-80% charged and has entered the equalize charge mode. This will last for 4-4.5 hours.
- When the green **FLOAT MODE**, yellow **EQUALIZE MODE** and red AC POWER lamps are all lit, the charger has entered the float mode and maintains the battery voltage at a fully charged rate.

Turning The Charger Off

- Turn AC power switch to OFF, disconnect the AC power cord.
- Disconnect DC output cord from the batteries.
- **Note:** Leaving the DC output cord connected to the batteries with no AC power applied draws less than 400 microamps of current from the batteries and poses practically no threat of battery power drain.

Charger models covered by this instruction.

Model	CHARGER DESCRIPTION
ACL20012	20A 12VDC PORTABLE, NO METERS
ACL10024	10A 24VDC PORTABLE, NO METERS
ACL20024	20A 24VDC PORTABLE, NO METERS
ACL10036	10A 36VDC PORTABLE, NO METERS
ACL20036	20A 36VDC PORTABLE, NO METERS
ACL1012	*10A 12VDC Wall-mount W/ METERS
ACL2012	*20A 12VDC Wall-mount W/ METERS
ACL0724	*7 A 24VDC Wall-mount W/ METERS
ACL1024	*10A 24VDC Wall-mount W/ METERS
ACL2024	*20A 24VDC Wall-mount W/ METERS
ACL1036	*10A 36VDC Wall-mount W/ METERS
ACL2036	*20A 36VDC Wall-mount W/ METERS

*Optional Alarm Module Available

Optional Alarm Control Note

Connect the alarm circuit to the correct relay contacts. NC & NO are for *non-energized* state. The relay is *energized* during normal battery voltage conditions while the charger is connected to AC. Consider this when connecting to your alarm system.



Application & Operation Notes:

- Always be sure that the battery charger is sized properly for the batteries being used. Use of this battery charger on batteries larger than intended will result in the charger remaining in current limit for an extended period of time and under-charged batteries. If the charger is sized properly and the red **CURRENT LIMIT ON** lamp remains lit for more than four hours, it could be an indication of a shorted cell in the batteries. For application assistance contact Japlar Group Inc and/or the battery manufacturer.
- The ACL Series battery chargers are available in three designs as shown below. First is a portable model with no meters on the front panel and equipped with battery clips on the output cord for battery connection. The second is a shelf or wall-mount case design with a voltmeter and ammeter, ring terminals on the output cord for battery connection and an optional alarm control module. For wall-mount applications, we recommend the use of four 1/4" bolts through the side mounting keyholes into a solid material suitable to support the weight of the battery charger. Center-to-center hole spacing for wall mounting is 12 1/2" horizontal and 5 1/4" vertical. These two versions have rubber feet attached to the charger base to allow for adequate convection cooling (DO NOT REMOVE). The third version is a smaller size enclosure for the ACL0724 and ACL1012 models. Mounting keyholes for these models are on a 6" centerline at the top rear panel.
- These chargers are designed with reverse polarity protection. If the DC output is connected to the batteries with the polarity reversed, and AC power is applied to the charger, the red **POWER ON** lamp will not turn on.
- The battery chargers will not turn on if AC power is applied without the DC cord being connected. Even if properly connected to the batteries the charger requires at least 3 volts DC from the battery to turn on.
- There is an auto-resetting DC circuit breaker in the charger output circuit. Due to the current limit feature of the control board, this circuit breaker will not open unless there is a failure in the control circuit. It is installed only as a safety device in the event of current limit malfunction.
- The charger can be connected to the battery for an indefinite period of time.
- For backup (Emergency or Standby) generator applications, starting up the generator with the charger connected to the batteries with the charger on or off will not result in any damage to the battery charger.
- For troubleshooting assistance contact the factory. 800 899 VOLT.



Shelf or Wall-Mount



Portable Model



Shelf or Wall-Mount
Smaller Case