



OWNERS MANUAL
MANUAL DEL USUARIO

Models / Modelos:
SE50, SE-5212A-CA
Automatic Battery Charger
Cargador de baterías automático



PLEASE SAVE THIS OWNERS MANUAL AND READ BEFORE EACH USE. This manual will explain how to use the battery charger safely and effectively. Please read and follow these instructions and precautions carefully.

POR FAVOR CONSERVE ESTE MANUAL DEL USUARIO Y LEALO ANTES DE CADA USO. En este manual le explica cómo utilizar el cargador de batería de manera segura y confiable. Por favor, lea y siga las siguientes instrucciones y precauciones.



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IMPORTANT SAFETY INSTRUCTIONS

WARNING – RISK OF EXPLOSIVE GASES

WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL OPERATION. FOR THIS REASON, IT IS IMPORTANT THAT YOU FOLLOW THESE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.

To reduce the risk of a battery explosion, follow these instructions and those published by the manufacturer of the battery and any equipment you intend to use in the vicinity of the battery. Review the cautionary markings on these products and on the engine.

WARNING: Pursuant to California Proposition 65, this product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

- Keep out of reach of children.
- Use the battery charger on LEAD-ACID and AGM-type rechargeable batteries with recommended rated capacities of 22-59Ah (12V), as used in automobiles, trucks, tractors, airplanes, vans, RVs, trolling motors, etc. This charger is not intended to supply power to low-voltage electrical systems, other than in a motor-starting application.
- **WARNING:** Do not use battery charger with dry cell batteries that are commonly used with home appliances. These batteries may burst and cause injury or damage to property.
- Use only attachments recommended or sold by the battery charger's manufacturer. Use of non-recommended attachments may result in a fire, electric shock or injury.
- Locate the battery charger's power cord so it cannot be stepped on, tripped over, or subjected to damage or stress.
- Do not operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way. Take it to a qualified professional for inspection and repair.
- Do not disassemble the charger. Take it to a qualified professional when service or repair is required.

- To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
- Do not use an extension cord.
- Always charge the battery in a well-ventilated area.
- Do not set the charger on flammable materials, such as carpeting, upholstery, paper, cardboard, etc.
- NEVER smoke or allow sparks or flames in the vicinity of the battery or engine.

WARNING: RISK OF EXPLOSIVE GAS.

- Operate the charger as far away from the battery as DC charger cables permit.
- Do not expose the charger to rain or snow.
- NEVER charge a frozen battery.
- NEVER set a battery on top of the charger.
- NEVER place the charger directly above a battery being charged. Gases from the battery will corrode and damage the charger.
- NEVER touch the battery clamps together when the charger is energized.
- When disconnecting the battery charger, pull by the plug, not by the cord. Pulling on the cord may cause damage to the cord or plug.
- Do not operate the charger with a damaged cord or plug.
- NEVER allow battery acid to drip onto the charger.
- NEVER overcharge a battery.

PERSONAL SAFETY PRECAUTIONS

- Wear complete eye protection and protective clothing when working near lead-acid batteries. Always have someone nearby for help.
- Have plenty of fresh water, soap and baking soda nearby for use, in case battery acid contacts your eyes, skin, or clothing. Wash immediately with soap and water and seek medical attention.
- If battery acid comes in contact with eyes, flush eyes immediately for a minimum 10 minutes and get medical attention.
- Neutralize any acid spills thoroughly with baking soda before attempting to clean up.
- Remove all personal metal items from your body, such as rings, bracelets, necklaces and watches. A battery can produce a short circuit current high enough to weld a ring to metal, causing a severe burn.
- Do not drop a metal tool onto the battery.
- If it is necessary to remove the battery from the vehicle to charge it, always remove the grounded terminal first.

ASSEMBLY INSTRUCTIONS

Remove all cord wraps and uncoil the cables prior to using the battery charger.

GROUNDING AND AC POWER CORD CONNECTIONS

This battery charger is for use on a nominal 120 volt. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. The plug pins must fit the receptacle (outlet). Do not use with an ungrounded system.

NOTE: Pursuant to Canadian Regulations, use of an adapter plug is not allowed in Canada. Use of an adapter plug in the United States is not recommended and should not be used.

USING AN EXTENSION CORD

The use of an extension cord is not recommended. If you must use an extension cord, follow these guidelines:

- Pins on plug of extension cord must be the same number, size, and shape as those of plug on charger.
- Ensure that the extension cord is properly wired and in good electrical condition.
- Wire size must be large enough for the AC ampere rating of charger, as specified below:

Length of cord (feet)	25	50	100	150
AWG* size of cord	18	16	16	14

*AWG-American Wire Gauge

CONTROL PANEL

LED INDICATORS



CLAMPS REVERSED (red) LED flashing: The connections are reversed.



CHARGING (yellow/orange) LED lit: The charger is charging the battery.



CHARGING (yellow/orange) LED flashing: The charger is in abort mode.



CHARGED/MAINTAINING (green) LED pulsing: The battery is fully charged and the charger is in maintain mode.

NOTE: See the Operating Instructions section for a complete description of the charger modes.

RATE SELECTION

Use this button to select one of the following:

- **6<>2A CHARGE/MAINTAIN –** For charging small and large batteries. Not recommended for industrial applications. The charger will automatically adjust the charging current, based on battery size, in order to charge the battery completely, efficiently and safely.
- **10A BOOST –** This setting may be used for a quick boost, prior to using the engine start setting. Do not use this setting to charge your battery.
- **50A ENGINE START –** Provides additional amps for cranking an engine with a weak or run-down battery. Always use in combination with a battery.

OPERATING INSTRUCTIONS

WARNING: A spark near battery may cause an explosion.

IMPORTANT: Do not start the vehicle with the charger connected to the AC outlet, or it could result in damage to the charger.

CHARGING A BATTERY IN THE VEHICLE

1. Turn off all the vehicle's accessories.
2. Keep the hood open.
3. Clean the battery terminals.
4. Place the charger on a dry, non-flammable surface.
5. Lay the AC/DC cables away from any fan blades, belts, pulleys and other moving parts.
6. For a negative-ground vehicle (as in most vehicles), connect the charger's POSITIVE (RED) clamp to the POSITIVE (POS, P, +) battery post. Next, connect the charger's NEGATIVE (BLACK) clamp to the vehicle chassis or engine block, away from the battery.
7. For a positive-ground vehicle, connect the charger's NEGATIVE (BLACK) clamp to the NEGATIVE (NEG, N, -) battery post. Next, connect the charger's POSITIVE (RED) clamp to the vehicle chassis or engine block away from the battery. NEVER connect any clamps to the carburetor, fuel lines or sheet-metal body parts.

8. Connect the charger to an electrical outlet.
9. Select the desired rate.
10. When charging is complete, disconnect the charger from the AC power, remove the clamps from the vehicle's chassis, and then remove the clamp from the battery terminal.

CHARGING A BATTERY OUTSIDE OF THE VEHICLE


1. Place battery in a well-ventilated area.
2. Clean the battery terminals.
3. Connect a 24-inch long, 6-gauge (AWG) insulated battery cable to the NEGATIVE (NEG, N, -) battery post (i.e., jumper cable) (not provided).
4. Connect the POSITIVE (RED) clamp to the POSITIVE (POS, P, +) battery post.
5. Position yourself and the "negative post extension" cable as far away from the battery as possible, and connect the NEGATIVE (BLACK) clamp to the cable's free end.
6. Connect the charger to the electrical outlet.
7. Select the desired rate.
8. When charging is complete, disconnect the charger from the AC power, disconnect the negative clamp, and finally the positive clamp.
9. A marine (boat) battery must be removed and charged on shore.

NOTE: This charger is equipped with an auto-start feature. Current will not be supplied to the battery clamps until a battery is properly connected. The clamps will not spark if touched together.


AUTOMATIC CHARGING MODE

When an Automatic Charge is performed, the charger switches to the maintain mode automatically after the battery is charged.


ABORTED CHARGE

If charging cannot be completed normally, charging will abort. When charging aborts, the charger's output is shut off and the CHARGING  (yellow/orange) LED will flash. To reset after an aborted charge, unplug the charger from the AC outlet, wait a few moments and plug it back in.


DESULFATION MODE

Desulfation could take 8 to 10 hours. If desulfation fails, charging will abort and the CHARGING  (yellow/orange) LED will flash.

COMPLETION OF CHARGE

Charge completion is indicated by the CHARGED/MAINTAINING  (green) LED. When pulsing, the charger has switched to the maintain mode of operation.

MAINTAIN MODE (FLOAT-MODE MONITORING)

When the CHARGED/MAINTAINING  (green) LED is pulsing, the charger has started maintain mode. In this mode, the charger keeps the battery fully charged by delivering a small current when necessary. If the charger has to provide its maximum maintain current for a continuous 12 hour period, it will go into abort mode (see Aborted Charge section). This is usually caused by a drain on the battery or the battery could be bad. Make sure there are no loads on the battery. If there are, remove them. If there are none, have the battery checked or replaced.

MAINTAINING A BATTERY

The SE50 and SE-5212A-CA charge and maintain 12 volt batteries, keeping them at full charge.

NOTE: The maintain mode technology allows you to safely charge and maintain a healthy battery for extended periods of time. However, problems with the battery, electrical problems in the vehicle, improper connections or other unanticipated conditions could cause excessive current draws. As such, occasionally monitoring your battery and the charging process is required.

USING THE ENGINE START SETTING

Your battery charger can be used to jump start your car if the battery is low. Follow all safety instructions and precautions for charging your battery. Wear complete eye protection and clothing protection.

WARNING: Using the ENGINE START setting WITHOUT a battery installed in the vehicle could cause damage to the vehicle's electrical system.

NOTE: If you have charged the battery and it still will not start your car, do not use the Engine Start setting, or it could damage the vehicle's electrical system. Have the battery checked.

1. With the charger unplugged from the AC outlet, connect the charger to the battery, following the instructions given in the CHARGING A BATTERY IN THE VEHICLE section.
2. With the charger plugged in and connected to the battery of the vehicle, set the rate selection to the Engine Start position.
3. Crank the engine until it starts or 3 seconds pass. If the engine does not start, wait 3 minutes before cranking again. **NOTE:** During extremely cold weather, or if the battery is under 2 volts, use the 10A Boost setting for 5 minutes before cranking the engine.

4. If the engine fails to start, boost the battery for 5 more minutes before attempting to crank the engine again.
5. After the engine starts, unplug the AC power cord before disconnecting the battery clamps from the vehicle.

NOTE: If the engine does turn over but never starts, there is not a problem with the starting system; there is a problem somewhere else with the vehicle. STOP cranking the engine until the other problem has been diagnosed and corrected.

MAINTENANCE AND CARE

- A minimal amount of care can keep your battery charger working properly for years.
- Clean the clamps each time you are finished charging. Wipe off any battery fluid that may have come in contact with the clamps to prevent corrosion.
 - Occasionally cleaning the case of the charger with a soft cloth will keep the finish shiny and help prevent corrosion.
 - Coil the input and output cords neatly when storing the charger. This will help prevent accidental damage to the cords and charger.
 - Store the charger unplugged from the AC power outlet in an upright position.
 - Store inside, in a cool, dry place. Do not store the clamps clipped together, on the handle, on or around metal, or clipped to the cables.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Battery clamps do not spark when touched together.	The charger is equipped with an auto-start feature. It will not supply current to the battery clamps until a battery is properly connected. The clamps will not spark if touched together.	No problem; this is a normal condition.
All three LEDs come on for 2 seconds, then turn off.	The charger is plugged into an AC outlet. The charger was recently unplugged from an AC outlet.	No problem; this is normal. This is normal. Allow a few minutes for the charger to shut off.
The charger will not turn on when properly connected.	AC outlet is dead. Poor electrical connection.	Check for open fuse or circuit breaker supplying AC outlet. Check power cord and extension cord for loose fitting plug.

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Short or no start cycle when cranking engine.	No power at receptacle.	Check for open fuse or circuit breaker supplying AC outlet.
	AC cord and/or extension cord is loose.	Check power cord and extension cord for loose fitting plug.
	The clamps are not making a good connection.	Check for poor connection at battery and frame.
	Failure to wait 3 minutes (180 seconds) between cranks.	Wait 3 minutes of rest time before the next crank, to allow the battery and charger to cool down.
	The battery may be severely discharged.	On a severely discharged battery, use the 10A Boost setting for few minutes, to help assist in cranking.
	The battery is drawing more than the Engine Start Rate.	Crank time varies with the amount of current drawn. If cranking draws more than the Engine Start Rate, crank time may be less than 3 seconds.
	The charger may be overheated.	The thermal protector may have tripped and needs a little longer to close. Make sure the charger vents are not blocked. Wait and try again.

SPECIFICATIONS

Input Voltage.....120V AC @ 60Hz, 2.2A
Output Voltage..... 12V DC
Output Current Rating..... 6<>2A / 10A Continuous / 50A Intermittent

BEFORE RETURNING FOR REPAIRS

If these solutions do not eliminate the problem, or for more information about troubleshooting, contact customer service for assistance:

**services@schumacherelectric.com
www.batterychargers.com
or call 1-800-621-5485**

Monday-Friday 7:00AM to 5:00PM CST

For **REPAIR OR RETURN**, contact Customer Service at 1-800-621-5485. **DO NOT SHIP UNIT** until you receive a **RETURN MERCHANDISE AUTHORIZATION (RMA)** number from Customer Service at Schumacher Electric Corporation.