

OPERATOR'S MANUAL / MANUAL DEL USUARIO

DieHard®

6V/12V Battery Charger

Cargador de baterías 6V y 12V



Model /Modelo:
28.71321

CAUTION:

Read and follow all safety rules and operating instructions before every use of this product.

SAVE THESE INSTRUCTIONS.

ATENCIÓN:

Lea y siga todas las reglas de seguridad e instrucciones de uso antes de cada uso de este producto.

GUARDE ESTAS INSTRUCCIONES.

Sears Brands Management Corporation,
Hoffman Estates, IL 60179 U.S.A.

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DIEHARD THREE-YEAR FULL WARRANTY

When operated and maintained according to all supplied instructions, if this DieHard product fails due to a defect in material or workmanship within 3 years from the date of purchase, return it to any DieHard outlet in the United States for free replacement.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears Brands Management Corporation, Hoffman Estates, IL 60179

**FOR CUSTOMER ASSISTANCE OR REPLACEMENT PARTS,
CALL 1-800-SEARS-64 (1-800-732-7764) TOLL-FREE
FROM 7 AM TO 5 PM CT.**

DIEHARD TRES AÑOS DE GARANTÍA TOTAL

Cuando se opere o maneje con las debidas precauciones de acuerdo a las instrucciones, si el DieHard falla en alguno de sus componentes de fabricación durante los 3 años contados a partir de la fecha de compra, regresarlo al autoservicio DieHard en los estados unidos para reemplazar el aparato sin costo alguno.

Esta garantía le otorga derechos legales específicos, así como otros derechos, que varían de estado a estado.

Sears Brands Management Corporation, Hoffman Estates, IL 60179

**PARA ASISTENCIA AL CLIENTE O REPUESTOS,
LLAME GRATIS AL 7 AM-5 PM CT
LUNES A VIERNES: 1-800-SEARS-64 (1-800-732-7764)**

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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 6 and 12V LEAD-ACID, GEL and AGM-type rechargeable batteries with rated capacities of 12Ah (6V) and 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 overcharge a 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 clips 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 damaged cord or plug.
- NEVER allow battery acid to drip onto the charger.

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.

GROUNDING AND AC POWER CORD CONNECTIONS

This battery charger is for use on a nominal 120 volt circuit. 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 the charger, as specified below:

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

*AWG-American Wire Gauge

ASSEMBLY INSTRUCTIONS

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

FEATURES



1. Hook attachment
2. Digital display
3. Display button
4. Charging/
Charged/Maintaining
LED indicator
5. AC Power cord
6. Battery clamps

CONTROL PANEL

DIGITAL DISPLAY

The digital display indicates the status of the battery and charger. See the troubleshooting section for a complete list of messages.

NOTE: During charging, the display will go into sleep mode and will not display any messages. To turn the display back on, press the display button.

DISPLAY BUTTON

The digital display will show the battery's voltage and percentage of charge. Press the display button to show the charge progress.

LED DISPLAY

GREEN LED solid (CHARGING): The charger is charging the battery.

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

GREEN LED flashing: The charge has aborted (see Aborted Charge section).

OPERATING INSTRUCTIONS

IMPORTANT: Do not start the vehicle with the charger connected to the AC outlet, or it may damage the charger and your vehicle.

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.

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, or use the convenient hook attachment to hang the unit safely outside the work area.
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. When the charger starts, the GREEN LED will be solid, and the display will show **ANALYZING BATTERY** while the charger determines that the battery is properly connected, the condition of the battery, and whether the battery is 6V or 12V.
10. Monitor the progress of the charge by pressing the display button on the front of the unit. When the battery is fully charged, the GREEN LED will pulse.
11. 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. When the charger starts, the GREEN LED will be solid, and the display will show **ANALYZING BATTERY** while the charger determines if the battery is properly connected, the condition of the battery, and whether the battery is 6V or 12V.
8. Monitor the progress of the charge by pressing the display button on the front of the unit. When the battery is fully charged, the GREEN LED will pulse.
9. When charging is complete, disconnect the charger from the AC power, disconnect the negative clamp, and finally the positive clamp.
10. A marine (boat) battery must be removed and charged on shore.

AUTOMATIC CHARGING MODE

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

BATTERY CONNECTION INDICATOR

If the charger does not detect a properly connected battery, charging will not start and the digital display will show one of two messages. If the display shows **CONNECT CLAMPS**, make sure the charger is connected to the battery and the connection points are clean and making a good connection. If the display shows **WARNING CLAMPS REVERSED**, unplug the charger from the AC outlet and reverse the connections at the battery.

CHARGE COMPLETION AND MAINTAIN MODE (FLOAT MODE MONITORING)

Charge completion is indicated by the GREEN LED pulsing and the digital display showing **FULLY CHARGED AUTO MAINTAINING**. This means that the charger has stopped charging and has switched to the Maintain Mode of operation. **NOTE:** 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 28.71321 maintains both 6 and 12 volt batteries, keeping them at full charge. **It is not recommended for industrial applications.**

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.

DESULFATION MODE

If the battery is left discharged for an extended period of time, it could become sulfated and not accept a normal charge. If the charger detects a sulfated battery, the charger will switch to a special mode of operation designed for such batteries. If successful, normal charging will resume after the battery is desulfated. Desulfation could take up to 8 hours. If desulfation fails, charging will abort, the GREEN LED will flash, and the display will show **CHARGING ABORTED BAD BATTERY**.

ABORTED CHARGE

If charging cannot be completed normally, charging will abort. When charging aborts, the charger's output is shut off, the GREEN LED will flash, and the display will show **CHARGING ABORTED BAD BATTERY**. To reset after an aborted charge, unplug the charger from the outlet, wait a few moments and plug it back in.

FAN

Your charger is equipped with a fan. It is normal for the fan to run while the charger is charging. Keep the area near the charger free of obstructions, to allow the fan to operate efficiently.

DISPLAY MESSAGES

CONNECT CLAMPS (No LED lit) – Plugged into the AC outlet without the clamps connected to a battery.

WARNING CLAMPS REVERSED (Green LED lit) – Plugged into the AC outlet and the clamps are connected backwards to a 6V or 12V battery.

ANALYZING BATTERY (No LED lit) – Plugged into the AC outlet, and when first connected to a 6V or 12V battery correctly.

CHARGING 12V – XX% (Green LED lit) – Plugged into the AC outlet and correctly connected to a discharged 12V battery.

CHARGING 6V – XX% (Green LED lit) – Plugged into the AC outlet and correctly connected to a discharged 6V battery.

FULLY CHARGED AUTO MAINTAINING (Green LED pulsing) – Plugged into the AC outlet and correctly connected to a fully charged 6V or 12V battery.

CHARGING ABORTED BAD BATTERY (Green LED flashing) – Circumstances that could cause an Abort situation during charging:

- The battery is severely sulfated or has a shorted cell and can't reach a full charge.
- The battery is too large or there is a bank of batteries and it doesn't reach full charge within a set time period.

Circumstances that could cause an Abort situation during maintaining:

- The battery is severely sulfated or has a weak cell and will not hold a charge.
- There is a large draw on the battery and the charger has to supply its maximum maintain current for a 12 hour period to keep the battery at full charge.

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.
- Store inside, in a cool, dry place. Do not store the clamps clipped together, 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.
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.
I cannot select a 6V or 12V setting.	The charger is equipped with Auto Voltage Detection, which automatically detects the voltage and charges the battery.	No problem; this is normal.
Green LED is solid and the display shows ANALYZING BATTERY .	The charger needs to check the condition of the battery.	The Green LED will be solid when the charger is checking the condition of the battery.

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Green LED is flashing and the display shows CHARGE ABORTED BAD BATTERY.	The battery is sulfated. The battery is too large for the charger.	Reset the charger by briefly unplugging it. You need a charger with a higher amp rate.
The display shows CONNECT CLAMPS.	The clamps are not making a good connection.	Check for poor connection at battery and frame.

BEFORE RETURNING FOR REPAIRS

- When a charging problem arises, make certain that the battery is capable of accepting a normal charge. Double check all connections, the AC outlet for a full 120 volts, the charger clamps for correct polarity and the quality of the connections from the cables to the clamps and from the clamps to the battery system. The clamps must be clean.
- When an UNKNOWN OPERATING PROBLEM arises, please read the complete manual and call the customer service number for information. This will usually eliminate the need for return.

**If the above solutions do not eliminate the problem,
or for information about troubleshooting
or replacement parts,
call toll-free from anywhere in the U.S.A.
1-800-732-7764
7:00 am to 5:00 pm CST, Monday through Friday**