

OPERATOR'S MANUAL

DieHard®

Battery Charger



Model No.
28.71219

CAUTION

Read and follow all Safety
Rules and Operating Instructions
before Every Use of this Product.

SAVE THESE INSTRUCTIONS.

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 TOLL-FREE FROM 7 AM TO 5 PM CT**

MONDAY THROUGH FRIDAY: 1-800-732-7764

IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.

SAVE THESE INSTRUCTIONS – This manual will show you how to use your charger safely and effectively. Please read, understand and follow these instructions and precautions carefully, as this manual contains important safety and operating instructions. The safety messages used throughout this manual contain a signal word, a message and an icon.

The signal word indicates the level of the hazard in a situation.

▲ DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or bystanders.

▲ WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.

▲ CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in moderate or minor injury to the operator or bystanders.

IMPORTANT

Indicates a potentially hazardous situation which, if not avoided, could result in damage to the equipment or vehicle or property damage.

▲ 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 before handling.

1. IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS. This manual contains important safety and operating instructions.



RISK OF ELECTRIC SHOCK OR FIRE.

- 1.1** Keep out of reach of children.
- 1.2** Do not expose the charger to rain or snow.
- 1.3** Use only recommended attachments.

Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock or injury to persons or damage to property.

- 1.4** To reduce the risk of damage to the electric plug or cord, pull by the plug rather than the cord when disconnecting the charger.
- 1.5** 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:
 - That the pins on the plug of the extension cord are the same number, size and shape as those of the plug on the charger.
 - That the extension cord is properly wired and in good electrical condition.
 - That the wire size is large enough for the AC ampere rating of the charger as specified in section 8.
- 1.6** To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning. Simply turning off the controls will not reduce this risk.
- 1.7** Do not operate the charger with a damaged cord or plug; have the cord or plug replaced immediately by a qualified service person. (Call customer service at 1-800-732-7764.)
- 1.8** 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 service person. (Call customer service at 1-800-732-7764.)
- 1.9** Do not disassemble the charger; take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of fire or electric shock. (Call customer service at 1-800-732-7764.)

⚠ WARNING**RISK OF EXPLOSIVE GASES.**

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

- 1.11** To reduce the risk of a battery explosion, follow these instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use in the vicinity of the battery. Review the cautionary markings on these products and on the engine.
- 1.12** This charger employs parts, such as switches and circuit breakers, that tend to produce arcs and sparks. If used in a garage, locate this charger 18 inches or more above floor level.

2. PERSONAL PRECAUTIONS**⚠ WARNING****RISK OF EXPLOSIVE GASES.**

2.1 NEVER smoke or allow a spark or flame in the vicinity of a battery or engine.

2.2 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.

- 2.3** Be extra cautious, to reduce the risk of dropping a metal tool onto the battery. It might spark or short-circuit the battery or other electrical part that may cause an explosion.
- 2.4** Use this charger for charging LEAD-ACID batteries only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use this battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
- 2.5** NEVER charge a frozen battery.
- 2.6** NEVER overcharge a battery.

- 2.7 Consider having someone nearby to come to your aid when you work near a lead-acid battery.
- 2.8 Have plenty of fresh water and soap nearby in case battery acid contacts your skin, clothing or eyes.
- 2.9 Wear complete eye and body protection, including safety goggles and protective clothing. Avoid touching your eyes while working near the battery.
- 2.10 If battery acid contacts your skin or clothing, immediately wash the area with soap and water. If acid enters your eye, immediately flood the eye with cold running water for at least 10 minutes and get medical attention right away.
- 2.11 If battery acid is accidentally swallowed, drink milk, the whites of eggs or water. DO NOT induce vomiting. Seek medical attention immediately.

3. PREPARING TO CHARGE



RISK OF CONTACT WITH BATTERY ACID. BATTERY ACID IS A HIGHLY CORROSIVE SULFURIC ACID.

- 3.1 If it is necessary to remove the battery from the vehicle to charge it, always remove the grounded terminal first. Make sure all of the accessories in the vehicle are off to prevent arcing.
- 3.2 Be sure the area around the battery is well ventilated while the battery is being charged.
- 3.3 Clean the battery terminals before charging the battery. During cleaning, keep airborne corrosion from coming into contact with your eyes, nose and mouth. Use baking soda and water to neutralize the battery acid and help eliminate airborne corrosion. Do not touch your eyes, nose or mouth.
- 3.4 Add distilled water to each cell until the battery acid reaches the level specified by the battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries (VRLA), carefully follow the manufacturer's recharging instructions.
- 3.5 Read, understand and follow all instructions for the charger, battery, vehicle and any equipment used near the battery

and charger. Study all of the battery manufacturer's specific precautions while charging and recommended rates of charge.

- 3.6** Determine the voltage of the battery by referring to the vehicle owner's manual and make sure that the output voltage selector switch is set to the correct voltage. If the charger has an adjustable charge rate, charge the battery in the lowest rate first.
- 3.7** Make sure that the charger cable clips make tight connections.

4. CHARGER LOCATION



RISK OF EXPLOSION AND CONTACT WITH BATTERY ACID.

- 4.1** Locate the charger as far away from the battery as the DC cables permit.
- 4.2** Never place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
- 4.3** Do not set the battery on top of the charger.
- 4.4** Never allow battery acid to drip onto the charger when reading the electrolyte specific gravity or filling the battery.
- 4.5** Do not operate the charger in a closed-in area or restrict the ventilation in any way.

5. DC CONNECTION PRECAUTIONS

- 5.1** Connect and disconnect the DC output clips only after setting all of the charger switches to the "off" position (if applicable) and removing the AC plug from the electrical outlet. Never allow the clips to touch each other.
- 5.2** Attach the clips to the battery and chassis, as indicated in sections 6 and 7.

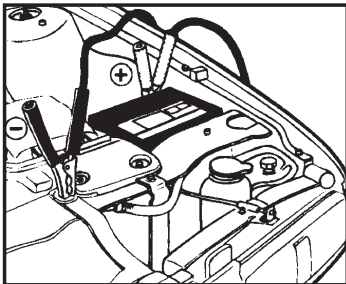
6. FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE.



A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY:

- 6.1** Position the AC and DC cables to reduce the risk of damage by the hood, door and moving or hot engine parts. NOTE: If it is necessary to close the hood during the charging process, ensure that the hood does not touch the metal part of the battery clips or cut the insulation of the cables.
- 6.2** Stay clear of fan blades, belts, pulleys and other parts that can cause injury.
- 6.3** Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter than the NEGATIVE (NEG, N, -) post.
- 6.4** Determine which post of the battery is grounded (connected) to the chassis. If the negative post is grounded to the chassis (as in most vehicles), see step 6.5. If the positive post is grounded to the chassis, see step 6.6.

- 6.5** For a negative-grounded vehicle, connect the POSITIVE (RED) clip from the battery charger to the POSITIVE (POS, P, +) ungrounded post of the battery. Connect the NEGATIVE (BLACK) clip to the vehicle chassis or engine block away from the battery. Do not connect the clip to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.



NEGATIVE GROUNDED SYSTEM

- 6.6** For a positive-grounded vehicle, connect the NEGATIVE (BLACK) clip from the battery charger to the NEGATIVE (NEG, N, -) ungrounded post of the battery. Connect the POSITIVE (RED) clip to the vehicle chassis or engine block away from the battery. Do not connect the clip to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 6.7** Connect charger AC supply cord to electrical outlet.

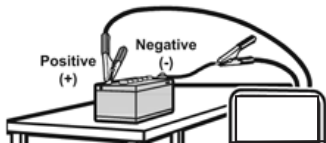
- 6.8** When disconnecting the charger, turn all switches to off (if applicable), disconnect the AC cord, remove the clip from the vehicle chassis and then remove the clip from the battery terminal.
- 6.9** See **CALCULATING CHARGE TIME** for length of charge information.

7. FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE.



A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY:

- 7.1** Check the polarity of the battery posts. The **POSITIVE** (POS, P, +) battery post usually has a larger diameter than the **NEGATIVE** (NEG, N, -) post.
- 7.2** Attach at least a 24-inch (61 cm) long 6-gauge (AWG) insulated battery cable to the **NEGATIVE** (NEG, N, -) battery post.
- 7.3** Connect the **POSITIVE** (RED) charger clip to the **POSITIVE** (POS, P, +) post of the battery.
- 7.4** Position yourself and the free end of the cable you previously attached to the **NEGATIVE** (NEG, N, -) battery post as far away from the battery as possible – then connect the **NEGATIVE** (BLACK) charger clip to the free end of the cable.
- 7.5** Do not face the battery when making the final connection.
- 7.6** Connect charger AC supply cord to electrical outlet.
- 7.7** When disconnecting the charger, always do so in the reverse order of the connecting procedure and break the first connection while as far away from the battery as practical.
- 7.8** A marine (boat) battery must be removed and charged on shore. To charge it onboard requires equipment specially designed for marine use.



8. AC POWER CORD CONNECTIONS



RISK OF ELECTRIC SHOCK OR FIRE.

8.1 This battery charger is for use on a nominal 120-volt circuit. The plug must be plugged into an outlet that is properly installed in accordance with all local codes and ordinances. The plug pins must fit the receptacle (outlet).

8.2 **▲DANGER** Never alter the AC cord or plug provided – if it does not fit the outlet, have a proper outlet installed by a qualified electrician. An improper connection can result in a risk of an electric shock or electrocution. **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.

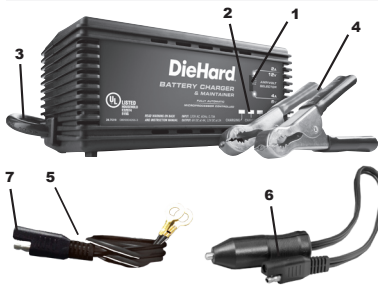
8.3 Recommended minimum AWG size for extension cord:

- 100 feet long or less – use an 18 gauge extension cord.
- Over 100 feet long – use a 16 gauge extension cord.

9. ASSEMBLY INSTRUCTIONS

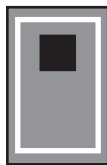
Remove all cord wraps and uncoil the cables prior to using the battery charger.

10. FEATURES/CONTROL PANEL



1. Amp/Volt Selector Switch
2. Battery Status LEDs
3. AC Power cord
4. Battery Clamp Cable Assembly
5. Ring Terminal Cable Assembly
6. 12V Plug Cable Assembly
7. Charger Quick-Connect Cable

10.1 Amp/Volt Selector Switch



2A, 12V
AMP/VOLT
SELECTOR
4A, 6V

10.2 LED Display

CHECK BATTERY (red) LED lit: Indicates the battery is not properly connected to the charger.

CHECK BATTERY (red) LED blinking: Indicates the charger is in abort mode.

CHARGING (yellow) LED lit: Indicates the charger is charging the battery.

CHARGED (green) LED lit: Indicates 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.

11. OPERATING INSTRUCTIONS

⚠WARNING This battery charger must be properly assembled in accordance with the assembly instructions before it is used.

The charger does not have an On/Off switch. Plug the 71219 into a 120V AC electrical wall outlet only after battery connections have been made and the Amp/Volt selector switch has been set.

NOTE: This charger is equipped with an auto-start feature. It will not supply current to the battery clips until a battery is properly connected. Meaning, the clips will not spark if touched together.

Charging

1. Ensure that all of the charger components are in place and in good working condition, for example, the plastic boots on the battery clips.
2. Connect the battery following the connection instructions described in Using the Quick-Disconnect Cable Connectors section.

3. Set the Amp/Volt Selector switch to the proper setting for the battery being charged.
4. Connect the AC power following the precautions listed in section 8.
5. If you've connected everything correctly, the CHARGING (yellow) LED should be lit indicating that the charger is charging. If the CHARGING (yellow) LED does not light or if the CHECK BATTERY (red) LED is lit, check the connections or have the battery checked/replaced.

USING THE QUICK-DISCONNECT CABLE CONNECTORS

Connect any of the three output cable assemblies to the charger in seconds. Make sure to place the charger on a dry, non-flammable surface.

NOTE: Never connect the clamp and ring terminal connectors together for use in other applications, such as external battery or other power source charging, or to extend the output cable length, as reverse polarity and/or overcharge conditions will occur.

50 AMP BATTERY CLIPS

1. Connect the end of the charger output cable to the end of the 50 Amp Battery clips cable.
2. Follow the steps in sections 6 and 7 to connect the output clips to the battery.
3. After a good electrical connection is made to the battery, plug the power cord into a 120V AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface.

PERMANENT RING CONNECTORS

The ring connectors permanently attach to the battery providing easy access to quickly charge your battery. This application is appropriate for motorcycles, lawn tractors, ATVs and snowmobiles.

1. To permanently attach to a battery, loosen and remove each nut from the bolt at the battery terminal.
2. Connect the red POSITIVE connector ring to the POSITIVE battery terminal.
3. Connect the black NEGATIVE connector ring to the NEGATIVE battery terminal.
4. Replace and tighten the nuts to secure.

5. Connect the cable to the end of the charger output cord. Take care to keep the wires and plug away from metal and moving parts.
6. Plug the charger power cord into a 120V AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface.

12V ACCESSORY PLUG

Charge or maintain your battery without lifting the hood.

1. Connect the end of the 12V Accessory Plug Cable Quick-Connect to the charger.
2. Insert the 12V accessory plug into the 12V accessory outlet.
3. Route the power cord from the charger through the vehicle's open window.
4. Plug the charger power cord into a 120V AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface.
5. If the vehicle's ignition key has to be on in order for the accessory outlet to supply/receive power, turn the key on.

Battery Connection Indicator

If the charger does not detect a properly connected battery, the CHECK BATTERY (red) LED will light continuously until such a battery is detected. Charging will not begin while the CHECK BATTERY (red) LED is on. When charging begins, the CHARGING (yellow) LED will be lit.

Completion of Charge

Charge completion is indicated by the CHARGED (green) LED. When lit, the charger has stopped charging and switched to the Maintain Mode of operation.

Maintain Mode (Float-Mode Monitoring)

When the CHARGED (green) LED is lit, the charger has started Maintain Mode. In this mode, the charger keeps the battery fully charged.

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 71219 is a battery maintainer that maintains both 6 and 12 volt batteries, keeping them at full charge. It can charge small batteries and maintain both small and large batteries. If you are maintaining a fully charged large battery, you will be properly utilizing the battery charger. However, if you were to use this battery charger to charge a large battery, such as a marine deep cycle battery, that was not fully charged, you may lose some of the battery's capacity. This would cause the large battery to be unable to hold a charge and become useless. Therefore, we do not recommend charging a large battery with this unit.

NOTE: The maintain mode technology utilized in DieHard's chargers 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 recommended.

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 and the CHARGING (yellow) LED will blink.

Aborted Charge

If charging can not be completed normally, charging will abort. When charging aborts, the charger's output is shut off and the CHECK BATTERY (red) LED will blink. To reset after an aborted charge, unplug the charger from the outlet, wait a few moments and plug it back in.

12. BATTERY PERCENT AND CHARGE TIMES

This charger adjusts the charging current in order to charge the battery completely, efficiently and safely.

This battery charger has a rated output of 2 and 4 amperes.

12.1 Charging Times

2 Amp, 12 Volt Battery	Battery Condition	
	50% Discharged	100% Discharged
Ampere Hour Battery Capacity	Approximate Average Charge Time in Hours	
10	3.2	6.2
12	4.0	7.5
20	6.4	12.4

4 Amp, 6 Volt Battery	Battery Condition	
	50% Discharged	100% Discharged
Ampere Hour Battery Capacity	Approximate Average Charge Time in Hours	
10	1.6	3.2
12	2.0	4.0
20	3.2	6.4

13. MAINTENANCE INSTRUCTIONS

- 13.1 After use and before performing maintenance, unplug and disconnect the battery charger (see sections 6, 7 and 8).
- 13.2 Use a dry cloth to wipe all battery corrosion and other dirt or oil from the terminals, cords, and the charger case.
- 13.3 Ensure that all of the charger components are in place and in good working condition, including the plastic boots on the battery clips.
- 13.4 Servicing does not require opening the unit, as there are no user-serviceable parts.
- 13.5 All other servicing should be performed by qualified service personnel.

14. MOVING AND STORAGE INSTRUCTIONS

- 14.1** Store the charger unplugged, in an upright condition. The AC cord will still conduct electricity until it is unplugged from the outlet.
- 14.2** Store inside, in a dry, cool place.
- 14.3** Do not store the clips on or around metal, clipped together or clipped to cables.
- 14.4** If the charger is moved around the shop or transported to another location, take care to avoid/prevent damage to the cords, clips and charger. Failure to do so could result in personal injury or property damage.

15. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Charger will not turn on when properly connected, and no LEDs are lit.	AC outlet is dead. Poor electrical connection.	Check for an open fuse or circuit breaker supplying the AC outlet. Check the power cord and extension cord for a loose fitting plug.
CHECK BATTERY (red) LED is lit.	Reverse connections at battery. Battery voltage is too low. Battery is not properly connected to the charger.	Unplug the charger and correct the lead connections. This charger has an automatic start feature. If the battery voltage is under 0.2 Volts, the charger will not detect it and will not start the charging process. Have the battery checked/ replaced. Make sure the connections from the battery connector cable to the battery and to the charger are tight.

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
CHECK BATTERY (red) LED is blinking	Charger is in abort mode.	See "Aborted Charge" in the OPERATING INSTRUCTIONS Section.
Battery clips do not spark when touched together.	The charger is equipped with an auto-start feature. It will not supply current to the battery clips until a battery is properly connected. Meaning, the clips will not spark if touched together.	No problem; this is a normal condition.

16. BEFORE RETURNING FOR REPAIRS

- 16.1** 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 clips for correct polarity and the quality of the connections from the cables to the clips and from the clips to the battery system. The clips must be clean.
- 16.2** When an UNKNOWN OPERATING PROBLEM arises, please read the complete manual and call the customer service number for information that 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 Central Time Monday through Friday