
TRAVELLER[®]

1037743

Battery Charger/Engine Starter



Instruction Manual

IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.

Warning: This unit is designed to charge 12V LEAD-ACID batteries only, use with the other batteries may damage the unit or the battery.

Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation.

Please read and follow these instructions and precautions carefully. This manual contains important safety and operating procedures.

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.

⚠ WARNING

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

⚠ CAUTION

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

IMPORTANT

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

1. IMPORTANT SAFETY INSTRUCTIONS



Risk of electric shock or fire

- 1.1** Do not expose the charger to rain or snow.
- 1.2** Use only recommended attachments. Use of an attachment not recommended may result in a risk of fire, electric shock, personal injury, or property damage.
- 1.3** To reduce the risk of damage to the electrical plug or cord, pull by the plug rather than the cord when disconnecting the charger.
- 1.4** An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire or 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 the table below

Length of cord (feet/meters)	100'(30.5m)	150'(45.7m)
AWG size of cord:	10	8

- 1.5** 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.
- 1.6** 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.
- 1.7** Do not operate the charger with a damaged cord or plug; take it to a qualified service person.
- 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.
- 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.

2. PERSONAL PRECAUTIONS



Risk of explosive gases

- 2.1** 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 these instructions.
- 2.2** 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.
- 2.3** 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.
- 2.4** **NEVER** smoke or allow a spark or flame in the vicinity of a battery or engine.
- 2.5** 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 parts that may cause an explosion.
- 2.6** 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 (such as Ni-Cd, Ni-MH, Lithium battery) that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
- 2.7** **NEVER** charge a frozen battery.

3. PERPARING TO CHARGE



Risk of contact with battery acid. Battery acid is a highly corrosive sulfuric acid.

- 3.1** Consider having someone nearby to come to your aid when you work near a lead-acid battery.
- 3.2** Have plenty of fresh water and soap nearby in case battery acid contacts your skin, clothing or eyes.
- 3.3** Wear complete eye and body protection, including safety goggles and protective clothing. Avoid touching your eyes while working near the battery.
- 3.4** If battery acid contacts your skin or clothing, immediately wash the area with soap and water. If acid enters your eye, immediately flush the eye with cold running water for at least 10 minutes and get medical attention right away.
- 3.5** 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.
- 3.6** Be sure the area around the battery is well ventilated while the battery is being charged.
- 3.7** 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.
- 3.8** 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.
- 3.9** 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.
- 3.10** 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.
- 3.11** Make sure that the charger cable clamps 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 an enclosed area or restrict the ventilation in any way.

5. DC CONNECTION PRECAUTIONS

5.1 This battery charger is equipped with a No-Spark safety function. No spark will be generated when making connections to the battery or if the clamps are touched together.

5.2 Attach the clamps to the battery and chassis, as indicated in steps 6.5, 6.6, 7.2, 7.3 and 7.4.

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 Ensure the AC cord and DC cables are positioned in a manner that they can not be damaged by the hood, door, or 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 clamps 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. If the polarity cannot be determined, it is recommended to use a multimeter to identify the (+) and (-) posts.

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 6.6. If the positive post is grounded to the chassis, see step 6.7.

- 6.5** Check the voltage of battery, it must be greater than 3V, It is recommended to use a multimeter for this measurement. If the battery voltage is less than 3V, the charger will not function.
- 6.6** For a negative-grounded vehicle, connect the POSITIVE (RED) clamp from the battery charger to the POSITIVE (POS, P,+) ungrounded post of the battery. Connect the NEGATIVE (BLACK) clamp the vehicle chassis or engine block away from the battery. Do not connect the clamp to carburetor, fuel lines or any sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 6.7** For a positive-grounded vehicle, connect the NEGATIVE (BLACK) clamp from the battery charger to the NEGATIVE (NEG, N,-) ungrounded post of the battery. Connect the POSITIVE (RED) clamp to the vehicle chassis or engine block away from the battery. Do not connect the clamp to carburetor, fuel lines or any sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 6.8** When disconnecting the charger, remove the clamp from the vehicle chassis and then remove the clamp from the battery terminal.

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:

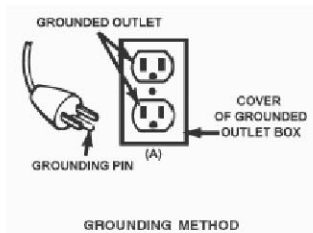
- 7.1** Check the polarity of the battery posts. If the polarity cannot be determined, It is recommended to use a multimeter to identify the (+) and (-) posts.
- 7.2** The charger functions on batteries with a voltage of more than 3V, if the battery voltage is less than 3V, the charger will not work.
- 7.3** Attach at least a 24-inch (61cm) long 6-gauge (AWG) insulated battery cable to the NEGATIVE (NEG, N,-) battery post.
- 7.4** Connect the POSITIVE (RED) charger clamp to the POSITIVE (POS, P, +) post of the battery.
- 7.5** 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 clamp to the free end of the cable.
- 7.6** Do not face the battery when making the final connection.
- 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. BATTERY CHARGING – AC CONNECTIONS



Risk of electric shock or fire

8.1 This battery charger is for use on a nominal 120-volt circuit and has a grounded plug that looks like the plug illustrated. The charger must be grounded to reduce the risk of electric shock. 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) properly. An improper connection can result in electrocution. Do not use with an ungrounded system.



8.2 Never alter the AC cord or plug provided.

Note: The use of an adapter plug is not recommended.

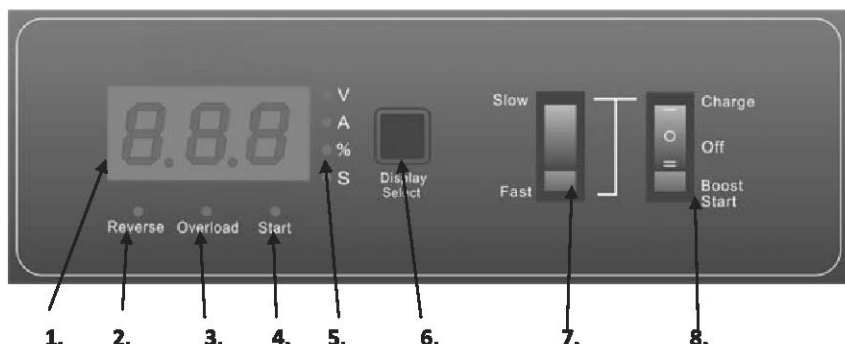
8.3 Recommended AWG size for extension cord, please refer to SECTION 1.4

9. SPECIFICATION

Input voltage	120V AC 60Hz
Input current	3A(Charge),12A(Start)
Rated output voltage	12V DC
Rated output current	2A (Slow) 15A(Fast)
Boost current	40A
Start current	100A
Start cycle	Max. on: 5 seconds Min. off: 120 seconds
Applicable battery capacity	5-120 Ah or 10-190RC
Applicable batteries	Conventional battery, low maintenance battery & maintenance-free battery, deep-cycle battery

Note: The battery voltage must be more than 3V, a battery with a starting voltage under 3V will not function with this charger.

10. CONTROL PANEL



1) Digital Display

Indicates charging voltage, charging current, battery capacity, wait time of starting function, and charged information.

2) Reverse Indicator

If the (+) charger cable is connected to the (-) battery post and the (-) charger cable is connected to the (+) battery, the polarity is reversed and the indicator will illuminate. Reverse the connections for correct polarity.

3) Overload Indicator

If the charging current is greater than the maximum current of 30A, the unit will automatically shut-off and the indicator will illuminate.

4) Start Indicator

When jump starting a vehicle, this indicator will illuminate when the engine can be started. This is conducted synchronously with start cycle 120 seconds (OFF), 5 seconds (ON).

5) Indicators

When illuminated voltage, current, battery capacity, or start function is shown in the Digital Display.

6) Display Selection Button

Choose voltage, current, battery capacity, or start function to be shown on the Digital Display.

7) Speed Selection Switch

Choose Slow/Fast charging modes.

8) Function Selection Switch

Choose Charge/Off/Boost Start mode.

Switch Positions for Operating the Four Charging Modes			
Mode	Amperage	Speed Switch Position	Function Switch Position
Slow Charge	2	Slow	Charge
Fast Charge	15	Fast	Charge
Boost	40	Slow	Boost-Start
Engine Starter	100	Fast	Boost-Start

11. OPERATING INSTRUCTIONS

CHARGE FUNCTION

1. Ensure the Function Selection Switch is in the off position. Connect the battery charger leads to the correct battery posts. Plug the AC cord of the battery charger into an appropriate outlet.
2. Position the Function Selection Switch to Charge mode, and the Slow/Fast Charging Selection Switch to the desired mode. Wait five seconds; and the battery charger will begin charging. If the charger is not connected to a battery, the Digital Display will show 0 and the Voltage indicator will be illuminated.
3. During charging process, you can choose different display modes: (V = voltage, A = current, % = battery capacity, or S = start function) by pressing the "display select" button.
4. When the battery is charged, the digital display indicates FUL. If the capacity of battery is less than 50%, the digital display will indicate: "Lo".
5. If the charging cables are reversed, the digital display will indicate ERR, the REVERSE indicator will illuminate, and the battery charger will not function. If the charging cables are disconnected from the battery, the REVERSE indicator will illuminate, and the Digital display will show 0 and the Voltage indicator will be illuminated.
6. If charging current is greater than 30A, the Digital display will indicate ERR and the OVERLOAD indicator will illuminate.

Maintenance Mode

When the digital display indicates "FUL", the charger will automatically go into Maintenance Mode. In this mode, the charger keeps the battery fully charged by delivering a small current, as needed. If the battery voltage drops below a preset level, the charger will go back into charge mode until the battery voltage returns to the full charge level, at which point the charger will return to maintenance mode.

Using the Engine Start feature

This battery charger can be used to jump start your car if the battery is low.

FOLLOW these instructions on how to use the ENGINE START feature.

IMPORTANT

Using the ENGINE START feature WITHOUT a battery installed in the vehicle could cause the charger not to work.

BOOST/START FUNCTION

Turn the switch to BOOST/START mode, after five seconds, the battery charger will go to BOOST or START mode. The LED display will indicate charging current and the BOOST/START light will be illuminated. The battery charger will automatically choose Boost or Start based on the load.

NOTE: If the engine turns over but will not start, allow the battery to charge for 10-15 minutes before trying to start the vehicle a second time. If the vehicle still fails to start you may need to seek the advice of a mechanic.

12. CALCULATING CHARGE TIME

Use the following table to determine the time it will take to bring a battery to full charge.

NR means that the charger setting is NOT APPLICABLE.

Find your battery's rating on the chart below and note the charge time given for each charger setting. The time given are for batteries with a 50% charge prior to recharging. Add more time for severely discharged batteries.

BATTERY SIZE/RATING			CHARGE RATE/CHARGING TIME	
			2 AMP	15 AMP
SMALL BATTERIES	Motorcycle, garden, tractor, etc	6 - 12 AH	2 - 4 hrs	NR
		12 - 32 AH	4 - 10 hrs	NR
CARS/TRUCKS	200-315 CCA	40 - 60 RC	11½ - 14½ hrs	2 - 2½ hrs
	315-550 CCA	60 - 85 RC	14½ - 18½ hrs	2½ - 3 hrs
	550-1000 CCA	80 - 190 RC	18½ - 34½ hrs	3 - 5½ hrs
MARINE/DEEP CYCLE		80 RC	17½ hrs	3 hrs
		140 RC	27 hrs	4½ hrs
		160 RC	30 hrs	5 hrs
		180 RC	33 hrs	5½ hrs

NOTE: This chart is for reference only. This charger functions automatically when the battery is fully charged, the digital display will indicate "FUL".

13. MAINTENANCE INSTRUCTIONS

13.1 After use and before performing maintenance, unplug and disconnect the battery charger (see SECTION 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 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 clamps.

13.4 Servicing does not require opening the unit, as these are no serviceable parts.

14. STORAGE INSTRUCTIONS

14.1 Store the charger unplugged, in an upright position. The cord will still conduct electricity until it is unplugged from the outlet.

14.2 Store inside, in a cool, dry place (unless you're using an on-board marine charger)

14.3 Do not store the clamps on the handle, clipped together, on or around metal, or clipped to cables.

15. TROUBLESHOOTING

Digital display is not on	AC power not connected	Connect AC power
	AC outlet is dead	Check the AC outlet
	Problem with power cord	Check the power cord
Reverse Indicator is Illuminated	Polarity is reversed	Connect correctly
Overload indicator is illuminated	Maximum current has been exceeded	Set the charge rate to 2A, after working for 1-2 hours, set the switch to "Fast" for fast charge
Digital display is blank	Clamps are not making a good connection to the battery	Clean the electrode of battery. Rock clamps back and forth for a better connection
	The voltage is not correct	Select correct voltage
	The circuit of the battery internal plate is broken	Replace the battery
Charger makes a loud Buzz or hum	Transformer laminations vibrate(buzz)	No problem, this is a normal condition
	Shorted diode assembly or output Rectifier assembly	Have charger checked by a qualified technician
	In charge state, the function selection is set to START	Select CHARGE
Engine turns over but will not start	The current required to start the engine exceeds the start current of the Charger/Starter	The charger size is not appropriate, please select a Charger/Starter with larger capacity
	The battery voltage is too low	Charge the battery for 5-10 more minutes before attempting to crank the engine again
	Clamps are not making a good connection	Clean the electrode of battery. Rock clamps back and forth for a better connection

ASSEMBLY INSTRUCTIONS

It is important to fully assemble your charger before use.

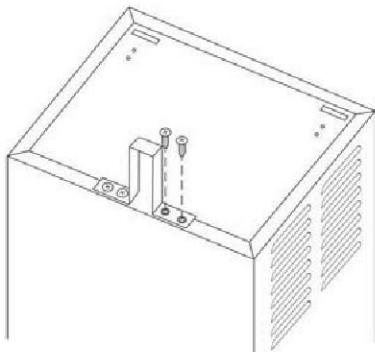
Remove all cord wraps and uncoil the cables prior to using the battery charger.

Follow these instructions for assembly.

PARTS	TOOLS NEEDED
(8) thread cutting screws, 5/32"	screwdriver (for mounting the foot)
(2) washer, 13/32"	screwdriver (for mounting the axle brackets)
(2) pin	pliers (for mounting the wheels)
(4) nuts, 3/16"	wrench (for mounting the handle)
(2) wheels	
(1) Axle	
(2) Axle brackets	
(1) handle	
(1) foot	

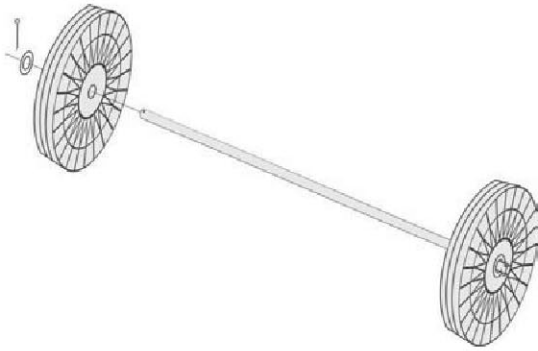
Attach the foot

- 1) Remove the charger from the packing materials and place upside down on a flat surface.
- 2) Use a screwdriver to attach the foot.
- 3) Secure it with the four 5/32" thread cutting screws provided.



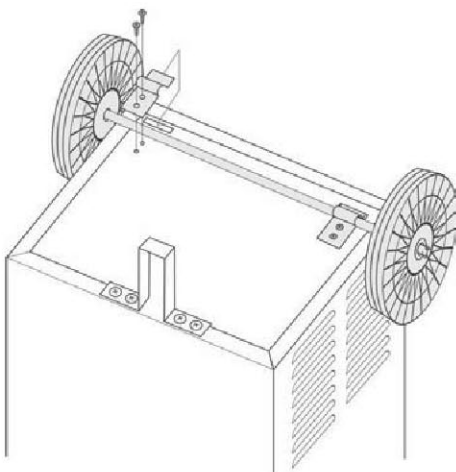
Assemble the wheels

- 1) Place the wheels on the axle.
- 2) Place a washer on the axle outside of each wheel.
- 3) Insert a cotter pin into the hole on the axle; spread the legs of the cotter pin using pliers.



Mount the Axle to the Charger

- 1) Place the charger upside down on a flat surface. Place the axle with wheels on the surface (See the figure below).
- 2) Insert the side of the axle bracket without holes into the slot on the underside of the charger.
- 3) Press the axle bracket, and insert two screws. Do not tighten.
- 4) Repeat steps 2 and 3.
- 5) Center the axle and wheels and tighten the four screws.



Mount the Handle

- 1) Turn the charger right side up onto its foot and wheels.
- 2) Align the 2 holes in the handle to the fixed studs on the side of the charger body, install nuts and hand tighten only.
- 3) Pull the handle out slightly and align the 2 holes in the handle to the fixed studs on the other side of the charger. Install nuts and hand tighten only.
- 4) Tighten all 4 nuts using a wrench.

