

NEC-1: Constant Current Charger

INSTRUCTIONS (HOOK-UP & USE)

Please Note: Although it is possible to use this charger without reading these instructions, failing to follow proper procedures may cause damage to your charger or batteries, void the warranty, and result in **expensive repair costs!** Please read and follow these instructions carefully.

DESCRIPTION:

The NOVAK Electronic's NEC-1 is a light weight, compact, adjustable, constant current, temperature-sensing charger. It is fuse protected on the input and it is output short-circuit protected. It will fully charge a 6 or 7 cell nickel-cadmium battery pack using a 12 volt DC car battery or a 12 volt DC power supply. (This charger may be used to charge a 4 cell battery pack if an optional voltage dropping cord is purchased and used in place of the five foot zip cord furnished with the NEC-1).

SIZE: 1.50" L x 1.35" D x 1.15" H

WEIGHT: 1.50 oz.

CURRENT OUTPUT: Constant current adjustable from 1.0 to 5.5 amps.

INCLUDED:

- 1). Charger with large heat sink and 7.5 amp fuse installed. Features a temperature-sensing probe, two 5-inch wire leads, one with a female plug, one with a male plug.
- 2). A 5-foot zip cord (male plug) with a large red alligator clip on the positive lead, a large black alligator clip on the negative lead.
- 3). A 5-inch adaptor (female plug) with a small red alligator clip and a small black alligator clip.
- 4). A spare 7.5 amp fuse.

OPTIONAL ACCESSORIES:

- 1). A 5-foot voltage dropping cord to charge 4 cell packs.
- 2). Adaptor from NOVAK charger to ASSOCIATED battery pack.
- 3). Adaptor from NOVAK charger to TAMIYA battery pack.
- 4). Adaptor from NOVAK charger to DEANS 4-pin plug.

1. WIRE HOOK-UP:

- 1). Plug the 5-foot zip cord into the female lead coming from the charger. Plug the 5-inch adaptor cord into the male lead coming from the charger.
- 2). Clip the large red alligator clip on the 5-foot cord to the positive lead of the 12 volt charging battery, and clip the large black clip to the negative terminal.
- 3). Attach the temperature probe to the battery pack in such a way that the probe is in constant, physical contact with one or more cells. (Probe should be in place for 2-3 minutes before any temperature adjustments are made so that the batteries can stabilize and inform the charger of the battery temperature). Note: if the probe falls off of the batteries while they are being charged, they will be destroyed.
- 4). Clip the small red alligator clip on the 5-inch adaptor to the positive terminal of the battery pack and the small black clip to the negative terminal.

2. ADJUSTMENTS:

1). TEMPERATURE:

- a). Rotate the temperature adjustment until the red LED light just turns on-- remember to allow the probe to be in contact with the battery pack for 2-3 minutes before making this adjustment.
- b). The red light will turn off when the battery pack is charged (approximately 20 minutes).
- c). If you want the battery pack to become hotter, rotate the adjustment until the red light just comes on again-- batteries will then charge until another 3 degree rise in temperature occurs. Experience will tell you how much you must rotate the temperature adjustment beyond the initial charger turn-on point to produce the desired battery pack temperature. Maximum battery temperature is factory pre-set not to exceed 130°F.
- d). REMEMBER, THE PROBE MUST BE TOUCHING THE BATTERIES AT ALL TIMES. NOT DOING THIS WILL OVERCHARGE AND DESTROY YOUR BATTERIES. ALSO, IT IS A GOOD IDEA TO ALLOW THE PACK TO COOL OFF BEFORE RE-CHARGING.

2). AMP:

a). The adjustment on the right of the charger is the current adjustment. It is factory pre-set at 4.0 amps. If you want to re-set the charge current, hook an amp meter in series with the positive lead of the 5-foot zip cord going to the 12 volt battery, and adjust "AMP" pot for desired current.

3. PRECAUTIONS:

1). The charger heat sink can get very hot while charging, and should not be touched or allowed to come in contact with any material that is combustible or that can be damaged by high heat.

2). Do not charge with a source voltage higher than 14 volts DC.

3). Do not charge fewer than 6 cells unless you use the optional 5-foot voltage-dropping cord in place of the 5-foot zip cord furnished with charger.

4). Always hook the temperature probe to the batteries before starting the charging cycle-- remember, if the probe falls off the batteries, they will be destroyed.

5). The red charger LED will not turn on if the voltage of the battery pack is below approximately 4.5 volts, or if the charger is hooked-up backwards to the battery pack. Low voltage can result if the pack has been discharged with a discharge resistor. Therefore, batteries should sit for a few hours after discharge to allow the voltage to rise above 4.5 volts. This sensing circuit is designed into the charger to prevent any of the cells from going into cell voltage reversal.

6). If you hook-up the input leads of the 5-foot zip cord to the charging 12 volt battery backwards, the fuse will blow. If this happens, simply replace the fuse. If red light stays on when the battery pack is not connected, the fuse has been blown.

7). Only rechargeable nickel cadmium batteries should be charged. 1200 MAH batteries should be charged at 4.0 amps, 500 MAH batteries should be charged at 2.0 amps.

8). If the red LED does not turn on:

a). battery voltage may be below 4.5 volts.

b). battery pack is too hot (over 130°F).

Warranty:

NOVAK Electronics guarantees all products to be free from defects in materials or workmanship for a period of 90 days from date of purchase (verified by sales receipt). This warranty does not cover components worn by use, tampering, or any damage to the batteries being charged. In no case shall our liability exceed the original cost of the product. We reserve the right to modify the provisions of this warranty without notice.

Because NOVAK Electronics has no control over the hook-up and use of this charger, no liability may be assumed nor will liability be accepted for any damage resulting from using this product. Every charger is thoroughly checked and cycled before leaving our facility and is, therefore, considered operational.

By the act of installing or operating this charger, the user accepts all resulting liability.

NOVAK ELECTRONICS ACCEPTS NO LIABILITY.

The Following Items Specifically Void This Warranty:

- 1). Not using the heat sink.
- 2). Allowing water or moisture into the charger.
- 3). Any alteration to wires or harnesses installed by NOVAK.
- 4). Allowing charger to get excessively hot due to inadequate ventilation.
- 5). Charging 4 cells without using the optional voltage-dropping cord.
- 6). Using a source voltage higher than 14 volts.

A FEW WORDS ABOUT REPAIRS...

- * All chargers should be sent to NOVAK Electronics for repair. The address is 2709-C ORANGE AVE., SANTA ANA, CA 92707.
- * For warranty repair work, proof of purchase (sales receipt) must be submitted before work is performed.
- * Repair estimates will not be provided-- customer assumes responsibility for repair costs.
- * In order to guide the technician, a letter explaining the problems must accompany repair.
- * Dealers will not replace units thought to be defective-- these must be returned to the factory for repair or replacement.