



*"Your Supplier, Your Partner,
Your Friend!"*

MH-C888

Universal Drop-in
Charger / Conditioner

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Universal Drop-in
Charger & Conditioner

User's Guide

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Maha Communications, Inc.

Introduction

Thank you for purchasing the Maha MH-C888 Universal Drop-in Rapid Charger & Conditioner. This sophisticated yet easy to operate product is the result of long term research and development. Its design, definitely called the first of its kind, offers user maximum versatility in its functions. Maha hopes that you will enjoy this new and innovative product. If you have any questions regarding its functionality, please contact Maha's Technical Support at toll-free 1-800-376-9992, 8:30A to 5:30P Pacific Time.

1: Features

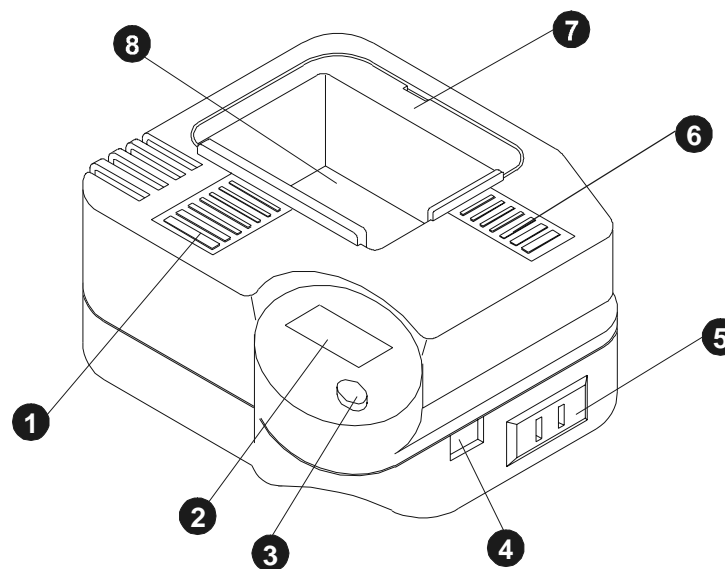
- Rapid charge Nickel Cadmium and Nickel Metal Hydride battery packs ranging from 4.8V to 12V.
- Digital LCD display with charging progress indicator.
- Innovative universal design. Features two sets of patented contact pins that can be placed on pre-configured adapter interface plates. You can set the charger to charge nearly "any" battery pack by adding contact holes in the cup. Pre-configured cups are available for different battery packs.
- Patented PowerShare feature. Maha's new innovative idea allows multiple chargers to be interconnected at user's wish! Simply "plug-in" one charger to another. Yet no additional power supply is required. Multiple chargers can be operated with a single power cord.
- Pulse charge and condition your battery packs. Special built-in mode allows single cycle and three full charge / discharge conditioning cycles.
- Detect and display any internal battery fault, short, reverse polarity, and diode protection.
- External charging connector for other special charging situation.

2: Before You Begin

In order to safely enjoy the functions that MH-C888 has to offer, please follow the safety guidelines listed below while operating the unit.

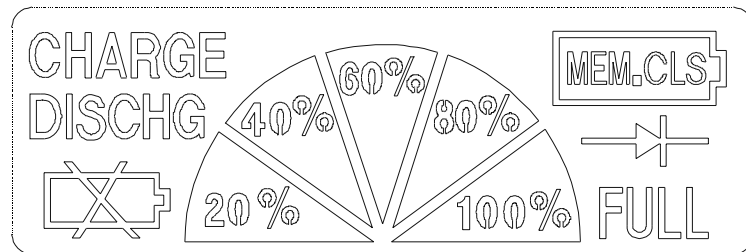
- Only operate this unit with rechargeable Nickel Cadmium (NiCD) and Nickel Metal Hydride (NiMH) battery packs. Do not operate this unit with non-rechargeable batteries.
- Do not operate this unit with non-rechargeable batteries.
- Consult with the battery's documentation or user manual to check whether the battery can be rapid charged or conditioned.
- When operating this unit with a DC adapter in your vehicle, make sure the unit is off and disconnected from your car's cigarette lighter before starting the vehicle's engine.
- This unit is intended for indoor use only. Do not expose the unit to high humidity or high temperature.
- While not operating in "PowerShare" mode (refer to section 8:1), make sure the PowerShare connector cover is attached at all times to prevent possible short circuits.
- When charging or conditioning your battery pack with the radio attached, make sure the radio is turned OFF. In addition, if your radio has a front panel keypad, exercise caution when inserting the radio into the charger.

3: Diagram of Parts



- 1 Forward Positioning Aid
- 2 LCD Display (Refer to section 4)
- 3 Conditioning Button (Refer to section 7)
- 4 DC Input (For vehicular use, Refer to Section 6)
- 5 PowerShare connector (Refer to section 8:1)
- 6 Side Positioning Aid
- 7 Cup (Refer to section 5.1)
- 8 Primary Charging Bay (Where the cup is installed)

4: LCD Display Definition



CHARGE

Indicates that the charger is in rapid charging mode.

DISCHG

Indicates that the charger is in discharge/conditioning mode



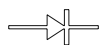
Indicates a faulty battery: reverse polarity or short



Indicates the charging progress.
***Note that when the unit is powered and idle (with no battery), this symbol will be in continuous sweep.**



Indicates that the charger is in the three-cycle deep conditioning mode.



Indicates diode protection, which will prohibit the conditioning function.

FULL

Indicates a full charge, charger enters trickle charge mode.

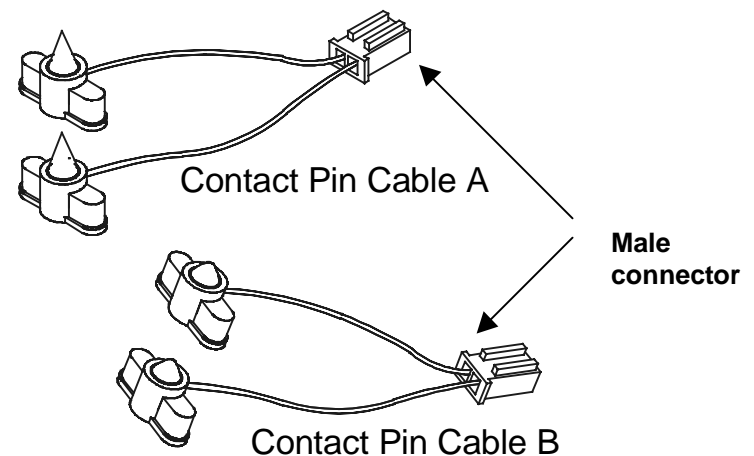
5: First Time Setup

This section provides you with detailed instruction on how to configure the charger to charge a specific battery pack for the first time. You can also refer to this section if you decide to configure the MH-C888 to charge a different battery pack.

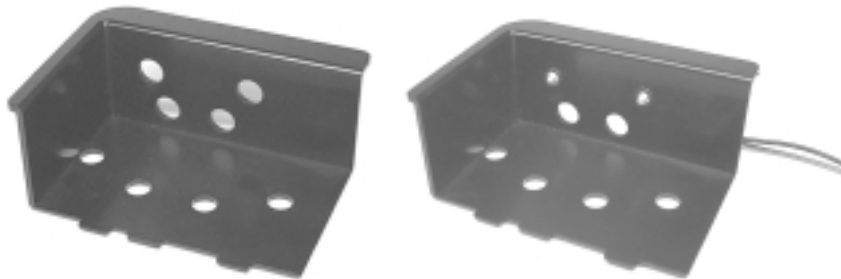
5.1: Get Your Cup Ready

The MH-C888 is based on the use of a separate plastic cup designed for various battery packs. You will need to choose the correct contacts on the proper cup. This section will show you how to do so.

1. You need to locate the 2 "contact pin" cables.



- Now select the cup you need. Refer to your *cup compatibility reference card* for compatibility information. (NOTE: MH-C888 comes with a blank cup. Extra pre-drilled cups available from dealer.)
- On the cup, you will see many pre-punched holes. They are designed to hold and lock the “contact pins” located at the end of the “contact pin cable”. You will need to refer to the *cup compatibility reference card* to find the proper holes for your battery. Note that there are exactly two possible holes for your battery pack, one positive, and the other negative. **The contact pin on the red wire goes to the POSITIVE hole. The contact pin on the black wire goes to the NEGATIVE hole.**
- After you have selected the holes for your battery pack, plug in the gold “contact pins” located at one end of the contact pin cables. Note that there are two cables, different in size. The smaller “**contact pins A**” (pointed contacts) are designed for holes located on the “bottom” base of the cup. The “**contact pins B**” (rounded pins) are designed for holes located on the back “vertical” side of the cup.



Before plugging in the contact pin cable

After plugging in the contact pin cable

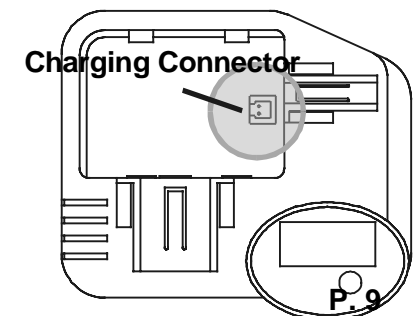
- That is it for the cup. Read the next section, it will tell you how to install the cup into the primary charging bay.

5.2: Get Your Charger Ready

- Now you have the cup ready with the contact pin cable attached to it. At this time, do not power your charger.
- On the top of the charger, you will locate two “positioning aids” that you can move in and out. They are designed to hold your handheld or battery pack in position. When installing the cup, both “positioning aids” **MUST** be removed.



- Inside the primary charging bay, you will find a white, female connector. Connect the male connector of the “contact pin cable” to the female **charging connector** located inside the primary charging bay.

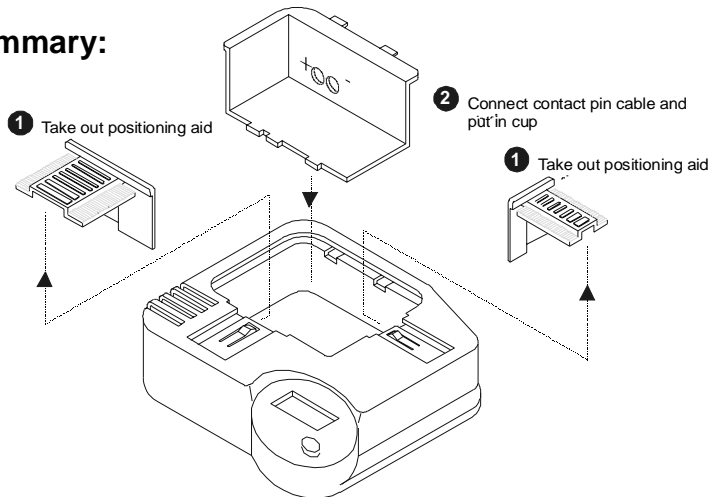


- Now you will physically install the entire cup inside the primary charging chamber. When you have completed this successfully, you will hear a click indicating that the cup is locked and secured.



- Next, you can put the two **positioning aids** back, which was removed earlier.
- That is it for setup! Read the next chapter on how to operate the charger and its rich features.

Summary:



B: How to Charge Your Battery

You have just completed the setup for your charger, now you are ready to charge your battery pack.

- At this time, you should power the charger by connecting one end of the power cable to the charger and the other end to a 110V 60Hz outlet. Or you can use the DC Input feature to connect to a DC source, such as a cigarette lighter adapter on your vehicle. **Note: While using 13.8VDC from your vehicle, the charger will only support up to 9.6V.**
- The LCD will be activated if you have successfully connected the power cable to an outlet.
- Now, place your battery pack into the **primary charging bay**. Adjust the **positioning aids** so they will hold the battery pack or handheld firmly in place.



4. Look at the LCD display, you will see one of the following conditions:



This means you have done everything correctly! The charger has begun to charge your battery pack. Sit back and relax. This process may take 1 to 3 hours. *Refer to chapter 7 if you wish to condition the battery pack.*



This symbol means you have connected the “contact pin cables” in the reverse order. Refer back to section 5:1 and flip the positive and negative connector around.

- If the charging progress indicator continue to sweep (no change), this means the charger is not detecting the battery pack. Check your setup and connection and make sure the contact pins firmly touch the charging terminals located on your battery pack.
5. When the charging process is complete, remove the battery pack for use. If you do not remove the battery pack, the charger will initiate the trickle charge mode.



7: How to Condition Your Battery

Sometimes it is necessary to condition your battery packs to make sure they remain in good shape. For Nickel Cadmium (NiCD) battery packs, it is recommended that you condition them periodically to prevent the development of memory effect, which will affect the performance of your battery packs.

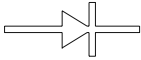
7.1: Single Cycle Conditioning Mode

This feature will first discharge, then rapid charge your battery packs.

- At this time, you should power the charger by connecting one end of the power cable to the charger and the other end to a 110V 60Hz outlet.
- The LCD will be activated if you have successfully connected the power cable to an outlet.
- Now, place your battery pack into the primary charging bay.
- Press the “CONDITION” button which is located on the front panel of the charger. The charger will now enter the conditioning mode.



5. Within 90 seconds of the initialization of the conditioning mode, you may see the following symbol on you LCD display:



This indicates your battery pack cannot be conditioned using the selected charging contacts because the battery pack features “diode protection”. This prevents the battery pack to be discharged. At this time, the charger will revert back to rapid charge mode. **Do not worry. Refer to section 8:2 for the solution to this problem.**

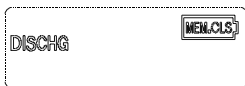
6. When the discharge is completed, the charger will revert back to rapid charge mode.

7.2 Three Cycle Conditioning Mode

This feature is quite like the “single cycle conditioning mode”, with the exception that this mode will condition your battery pack 3 times. This mode will also require an extended operating time.

Note: You can use this special mode to “wake-up” your new NiMH battery pack. It is important to cycle a new NiMH battery pack three to five times before expecting full performance.

1. Follow step 1 through 3 of “single cycle conditioning mode.
2. Hold the “CONDITION” button for about 5 seconds. The charger will now enter the “three cycle conditioning mode.” Keep in mind that this process may require 10 to 20 hours, depending on the capacity of your battery pack. The LCD will display this symbol:



8: Advanced Features

8.1: PowerShare Mode (Requires Two MH-C888)

This powerful feature, available only from Maha, enables you to connect one charger to another without any electrical work. You can create a bank of chargers consisting up to 12 units. You will only need one power cable. In order to enable the PowerShare mode, you must have two or more MH-C888.

1. Locate the **PowerShare connector** on the first charger, on the right lateral side of the charger. Remove the protective cover.



PowerShare Connector

2. Take your second charger, without power cable attached, and put its power connector into the PowerShare connector on the first charger.



3. On the bottom of the second charger, remove the supplied screw and plastic cover to secure the physical connection.
4. Finally, power only the first charger. As a result, all chargers will be powered automatically. Each unit functions as an individual charger.

If one charger malfunctions, the rest of the chain will continue to operate without any problem. This is because the PowerShare mode is based on a parallel power supply mode, rather than serial. Therefore, the chain does not break due to malfunction of a charger. However, if the connection breaks, the chargers installed after the point of disconnection will not be powered.

8.2: External Charge / Discharge Connector

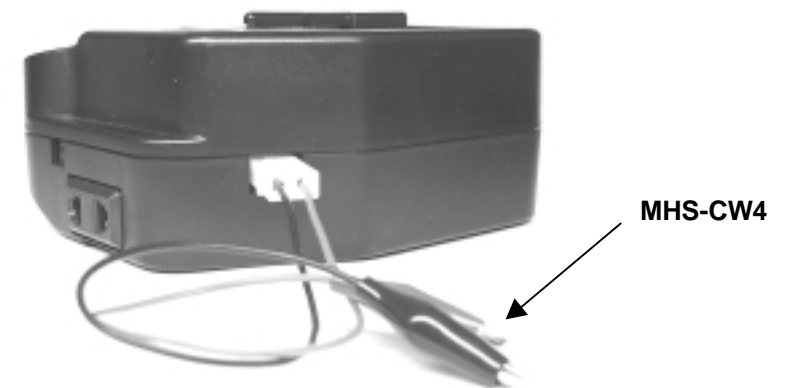
The external charge / discharge connector serves as a secondary contact pin, with the exception that it can be connected to the alligator clip-lead accessory (optional)



The clip-lead accessory can be used to:

- Charge large battery packs that cannot be accommodated by the primary charging bay.
- Condition battery packs that have a diode and cannot be conditioned by the primary charging bay.
- Monitor charging progress.

Charge / Condition Battery Pack Using Alligator Based Clip-Leads Connector P/N: MHS-CW4 (optional)



The procedure is similar to that of the primary charging bay. Instead of using the cup and contact pin cables, you will be using the external alligator based clip-leads connectors. Keep in mind this process can only take place when the charger is NOT charging a battery pack in its primary charging bay.

1. In order to avoid diode protection, which will prevent the conditioning feature from operating with your battery pack, you must use the “radio terminals” (contacts that are used to power the radio).
2. Connect the clip-lead to your battery pack.
3. Follow the appropriate instruction on charging or conditioning your battery pack.

Charge / Condition Battery Pack Using Alligator External Universal Charging/Conditioning Platform (optional)

Refer to its instructional manual.

9. Specifications

Input Power:	12V~18V DC 800mAh
Rapid Charge Current:	650mAh
Trickle Charge Current:	40mA
Discharge Current:	300-400mA
Primary Detection Sensor:	Negative Delta V FLEX Pulse
Acceptable Battery Voltage:	4.8V~12V (wall); 4.8V~9.6V (car)
Maximum Charger Bank:	12 Units