INSPIRED ENERGY®
SOLUTIONS FOR PORTABLE POWER

SH7070 Instruction Manual

Revision History				
Revision	Release Date	Revisions	Issued By	Approved By
1.0	4/20/21	Production Release	KP	JAB
1.1	8/2/21	Added photos, new charge times, and changed site link to inspired-energy.com	KP	JAB
1.2	6/7/22	Added RI battery variants to recharge table	KP	JAB

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SH7070A/E/U/X



Desktop Dual Bay Smart Charger
Instructions for use

The SH7070 is a standalone dual bay desktop smart, standard battery charger with the added ability to simultaneously charge two smart battery packs. It works with all Inspired Energy® brand “N” Series smart standard packs and hybrids irrespective of size, shape, voltage, cell chemistry or capacity.

What’s in the box?

1. One SH7070 desktop charger
2. Two sets of three plastic spacers to modify the battery bay to suit your battery size
3. One 10-26V 65W DC power supply with universal mains input
4. One mains cable
    - N. American chargers (SH7070A) are packed with a US 3-pin mains cord
    - European chargers (SH7070E) are packed with a European 2-pin mains cord
    - UK chargers (SH7070U) are packed with a UK 3-pin mains cord
    - SH7070X chargers are not packed with a mains cord

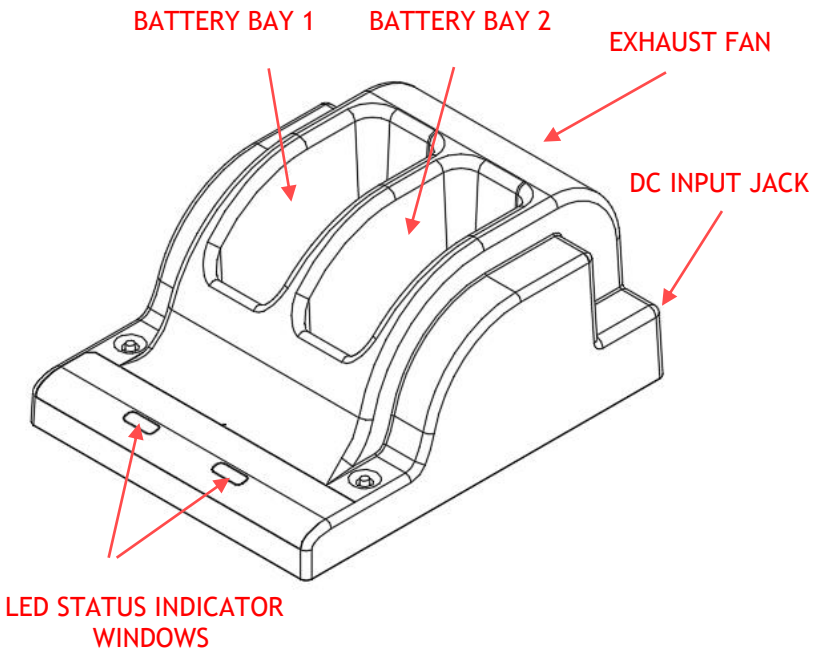
Safety:

1. Do not expose the charger or power supply to water or liquids.
2. Do not open the charger or power supply case, no user serviceable parts are inside.
3. Do not cover the fan exhaust or obstruct the airflow, this will cause overheating.
4. Use only the manufacturer’s power supply and observe terminal polarity.
5. Place the charger in a cool spot, away from external heat sources.
6. Caution - during recalibration the charger may become warm.

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Using your Charger:

Place the charger on a flat, level surface away from sources of heat and moisture. Plug the DC connector from the power supply into the back of the charger and connect the power supply to the mains AC supply using the cable supplied. All LEDs illuminate for two seconds on power up.



Using the Plastic Spacers:

Plastic spacers are supplied to assist in the correct insertion of all of the different sizes of smart standard packs. To insert a spacer, place the bottom of the spacer in the rear corner of the battery bay. Place a thumb on the top of the spacer and push it firmly towards the back of the charger. Correct insertion should be accompanied by a click as the guides lock into place. The cross reference of spacers to batteries is given below:

Thick “L” shaped spacer:	NC2560, NI1030, ND2017, Ni2020 Style
Thin “L” shaped spacer:	NL2020 & NL2024 Style
Flat spacer:	203x, 204x, and 2050x

No spacer is required for the 40xx ranges of batteries.

Charging:

Place the battery into the battery bay ensuring that the 5-way connector is fully seated. The LEDs in the status window will provide status information and the charger will automatically begin charging.

LED Indication:

The status of the battery is indicated by the LEDs visible in the status window:

- ✳ **Green flashing:** **Battery charging**
- ● **Green solid:** **Battery fully charged**
- ● **Red solid:** **Error**

Recharge Time:

Different battery packs will require differing recharge times. The times given below are for a full charge from 0% to 100% state of charge. They are valid for all variants and custom hybrids of each battery model.

Battery Chemistry	Battery Model	Recharge Time (hours)
NiMH	NI1030, NJ1020	1.5 - 2
Li-ion	NC2040, NC2560, ND2054, ND2034	2.5 - 3
	ND2053	5
	NB2037, ND2017	3 – 3.5
	ND2037, ND2057	3 – 3.5
	NF2040, NF2030	2.5 – 3
	NF2047	4
	NH2057	5
	NH2054, NH2034	2.5 – 3
	NI2020, NI2040, NL2020, NL2050, NL2024, NL2044, NL2054, RH2024, RH2044, RH2054, RI2020, RI2050	2.5 – 3.5
	NB4037, NC4040, ND4054, NE4068	2.5 – 3.5

What are the SMBus and the SBS?

The Smart Battery System defines the parameters that are stored by an SBS-compliant battery. These parameters include full battery status and fuel gauging information. The System Management Bus is the language by which these parameters are communicated between the battery, the charger and the host device. For full details of the SBS information available from your battery please refer to the battery specification sheet available at www.inspired-energy.com.

How does the charger know what charge to deliver?

The SH7070 charger is capable of sensing and delivering an appropriate charge to all Inspired Energy NiMH and Li-ion "N" Series standard battery packs. Upon inserting the battery into the charger, the battery communicates to the charger over the SMBus telling the charger what type of cell chemistry it is and what type of charge regime it needs. The SH7070 then configures its output to provide the charge regime requested by the battery. If no SMBus communications are issued from the battery, the charger interrogates the thermistor/resistor I.D. pin on the battery terminal and delivers an appropriate charge.

Compatibility:

The SH7070 is fully compatible with all Inspired Energy® brand "N" Series standard battery packs and their custom hybrids. For optimum results we recommend using only Inspired Energy® brand batteries. For a full list of all compatible Inspired Energy batteries, please visit:

www.inspired-energy.com

CH7171A/E/U/X Specification Summary	
Weight:	510g / 18oz
Height:	58mm / 3 1/3"
Length:	180mm / 7"
Width:	140mm / 5½"
Mating Connector:	7-blade standard battery connector
Communications Compliances:	System Management Bus Rev 1.1, Smart Battery Data Specification Rev 1.1 and Smart Battery Charger Specification Rev 1.1 compliant
Power Supply:	90-260VAC, 26V, 2.5A DC, 119x38x60mm, 500g / 18oz UL listed, CE Compliant
Mains Cord:	SH7070A - 110V N. American 3-pin connector SH7070E – 220V European 2-pin connector with ground recess SH7070U – 240V UK 3-pin connector SH7070X – No AC cable supplied

