MOTOROLA
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IMPRES™

Adaptive Multi-Unit Charger

Charger Display Module
Installation Procedure

Accessories
Installation Manual

6880309N67-B

English

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English

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This document contains important safety and operating instructions. Please read these instructions carefully and save them for future reference.

Before using the battery charger, read all the instructions and cautionary markings on (1) the charger and (2) the battery (3) and on the radio using the battery.

WARNING

1. To reduce risk of electrical shock, unplug the charger from the ac outlet before attempting installation of the CDM, any maintenance or cleaning.
2. To reduce risk of injury, charge only the rechargeable Motorola authorized batteries listed in Tables 1 through 5 in the MUC user guides publication part numbers 6880309L67 and 6866537D22.
3. Use of accessories not recommended by Motorola may result in risk of fire, electric shock, or injury.
4. To reduce risk of damage to the electric plug and cord, pull by the plug rather than the cord when disconnecting the charger.
5. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in risk of fire and

electric shock. If an extension cord must be used, make sure that the cord size is 18AWG for lengths of up to 100 feet (30.48 m), and 16AWG for lengths up to 150 feet (45.72 m).

6. To reduce risk of fire, electric shock, or injury, do not operate the charger if it has been broken or damaged in any way. Take it to a qualified Motorola service representative.
7. This unit is repairable. Each pocket is powered by a unique printed circuit board & power supply. The PCB / power supply can be purchased from the Aftermarket / Parts organization. The PCB replacement part number is RLN5325. No other component level replacement parts are available. A service manual describing the replacement process can also be ordered from the Aftermarket / Parts organization. The Service Manual Number is 6880309L66.
8. To reduce risk of electric shock, unplug the charger from the ac outlet before attempting any maintenance or cleaning.
9. For fuse replacement, use only fuses of the same type and rating listed on the charger label. The following parts can be ordered from your local Aftermarket / Parts organization:

Fuse	6587577G01
Cover	0987739G01

English

OPERATIONAL SAFETY GUIDELINES

- Turn the radio off when charging the battery.
- This equipment is not suitable for outdoor use. Use only in dry locations/conditions.
- Connect equipment only to an appropriately fused and wired supply of the correct voltage (as specified on the product).
- Disconnect from line voltage by removing the mains plug from the outlet.
- The socket outlet to which this equipment is connected should be close and easily accessible.
- For equipment using fuses, replacements must comply with the type and rating specified in the equipment instructions.
- Maximum ambient temperature around the charger must not exceed 40°C (104°F).
- Make sure the cord is located where it will not be stepped on, tripped over, or subjected to water, damage, or stress.
- This unit utilizes the same wall mount unit as the NTN4796 Multi Unit Charger. The wall mount part number is NLN7967.

English

CHARGER COMPATIBILITY

The Charger Display Module (CDM), P/N RLN5382, can be installed in any of the following existing *IMPRES* Adaptive Multi-Unit Chargers:

WPLN4108	WPLN4119
WPLN4109	WPLN4120
WPLN4110	WPLN4121
WPLN4118	WPLN4123

In addition, the CDM can be installed as a replacement for any of the following *IMPRES* Adaptive Multi-Unit Chargers with displays:

WPLN4127	WPLN4133
WPLN4130	WPLN4134
WPLN4131	WPLN4135
WPLN4132	WPLN4136

CHARGER DISPLAY MODULE INSTALLATION

It is recommended that qualified self-maintained users, independent service shops, or the Motorola Service Depot complete installation of the CDM.

To quickly and easily install the CDM, refer to the diagrams and information in the steps that follow.

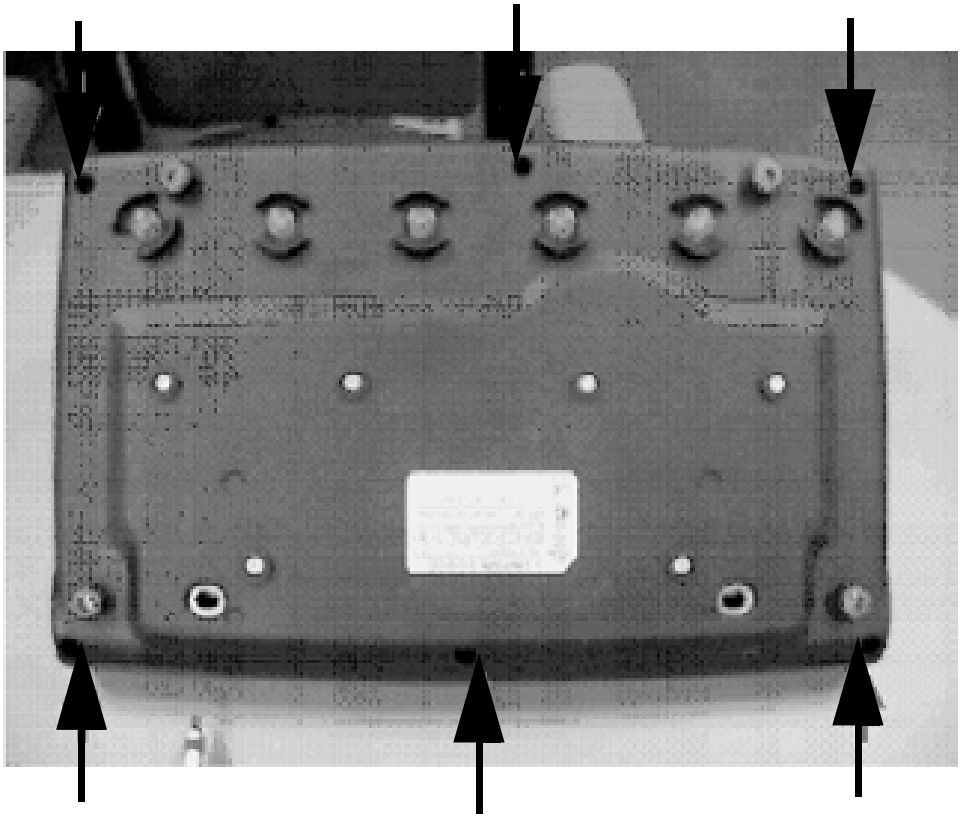
Required Tools:

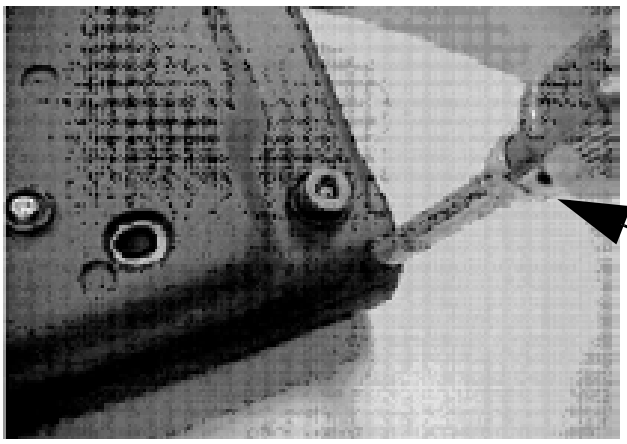
- Torque driver capable of delivering 8 and 10 in-lbs
- #10 Torx bit, P/N 6680387A74
- #20 Torx bit, P/N 6680387A76

English

Step 1:

Ensure that IMPRES charger is unplugged from AC outlet before attempting installation of the CDM. With the *IMPRES* Adaptive Multi-Unit Charger face down, remove the six screws, P/N 0387777G01, with #20 Torx bit.



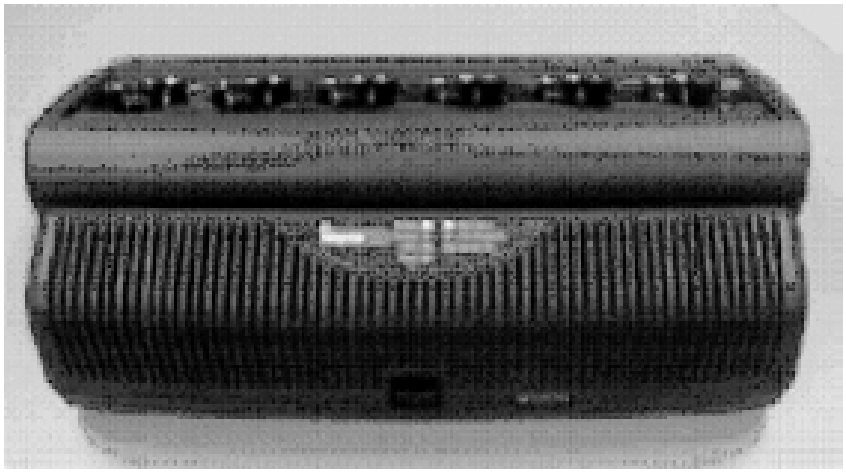


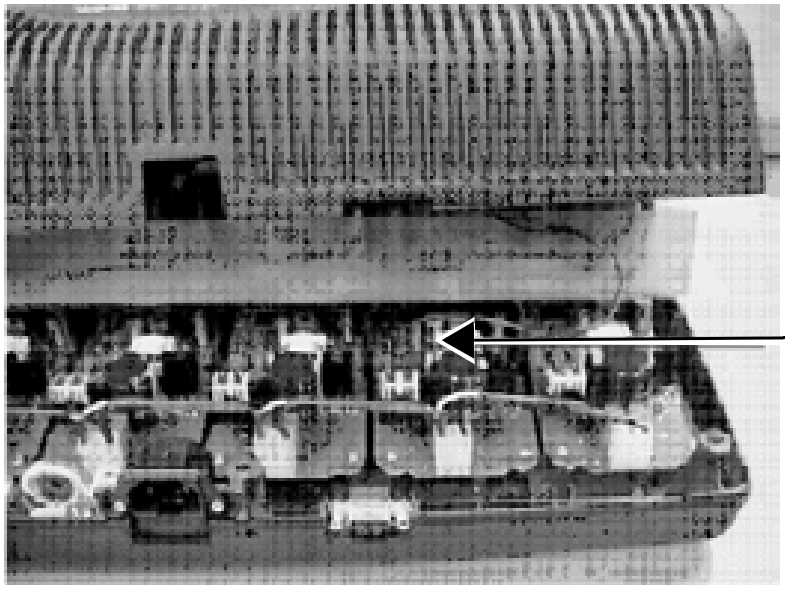
Torque Driver and Bit

English

Step 2:

Turn the unit over (base down) while holding the top housing and base together. Lift the back of the top housing a few inches away from the base, exposing the fan harness. Disconnect the fan harness from the PC board. The top housing can then be fully removed from the base and set aside.



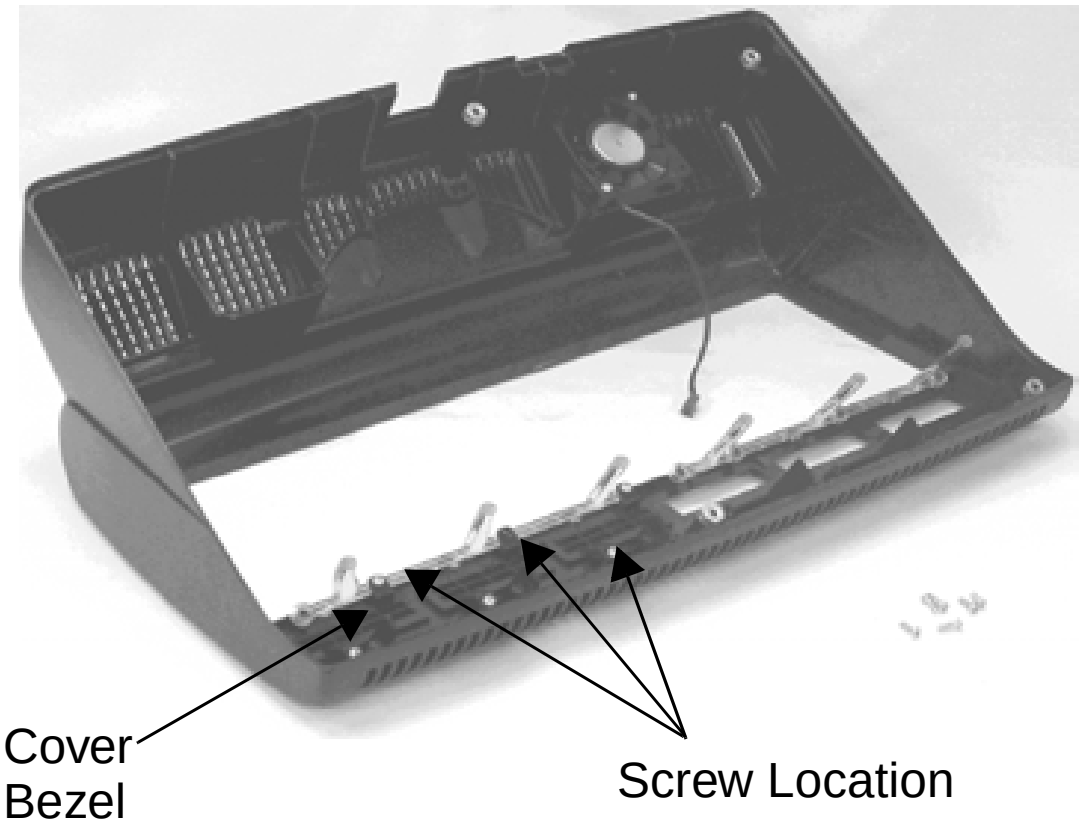


English

Step 3:

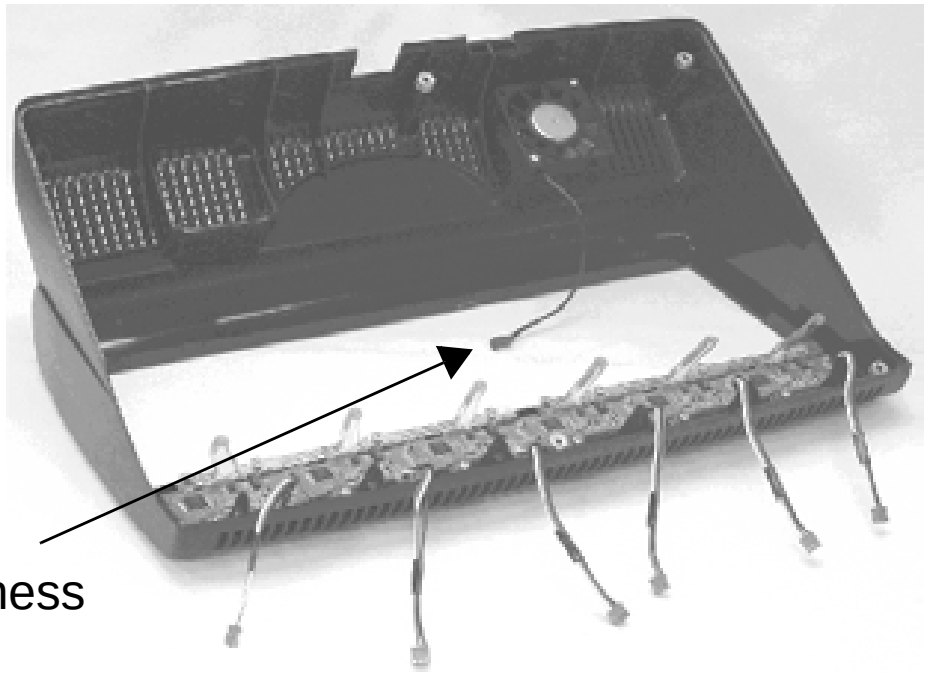
Remove the 12 screws, P/N 0387775G01, and take out the existing cover bezels, using a #10 Torx bit. Keep the screws for reassembly.

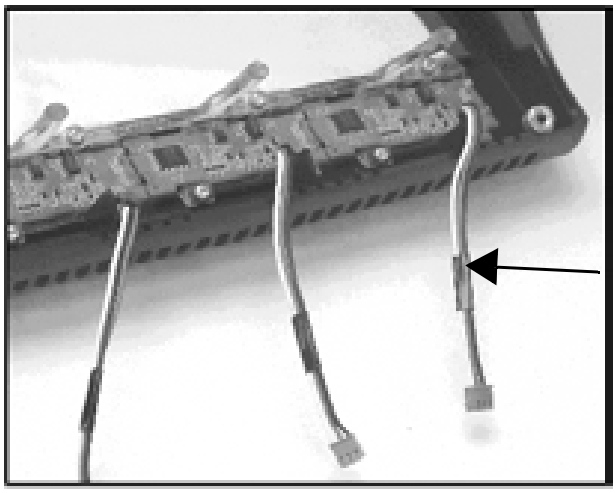
Note: Check that the LCD is not broken. If the LCD breaks and you get liquid on your hands, wash hands with soap and water. Discard or return the LCD.



Step 4:

Replace the previously removed bezels with the LCD modules, using the 12 screws (removed in Step 3) with the #10 Torx bit. Torque down to approximately 8 in-lbs.



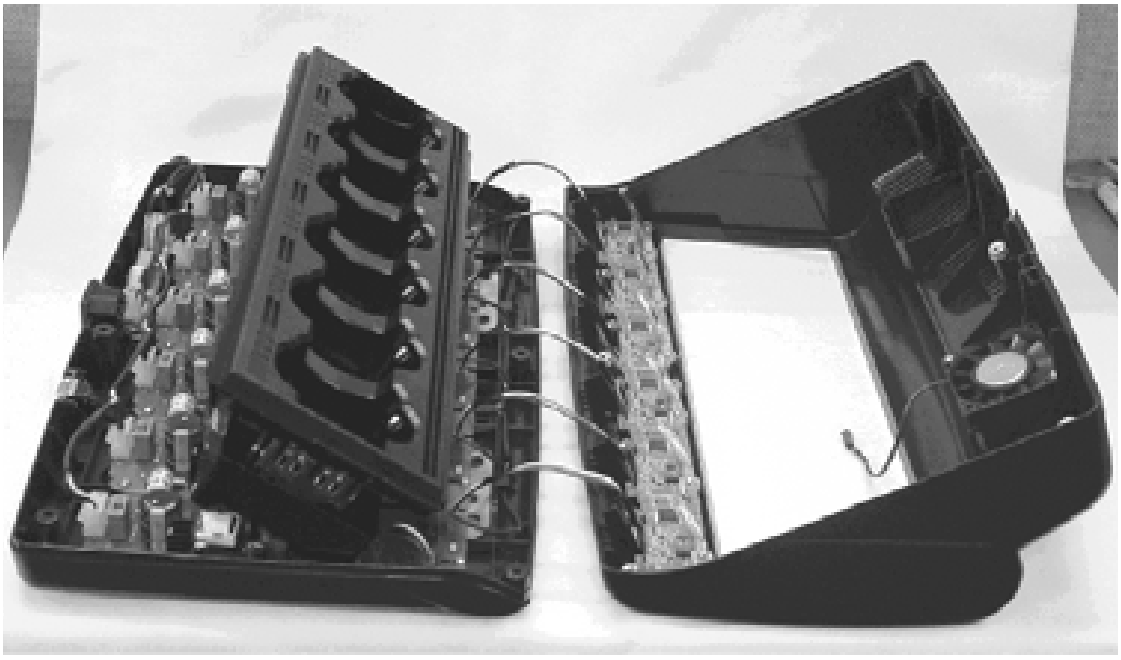


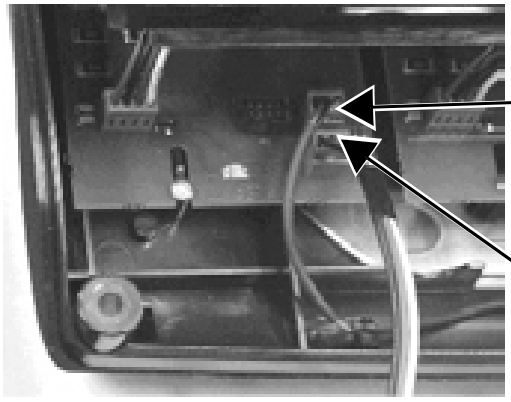
LCD Module Wire Harnesses

English

Step 5:

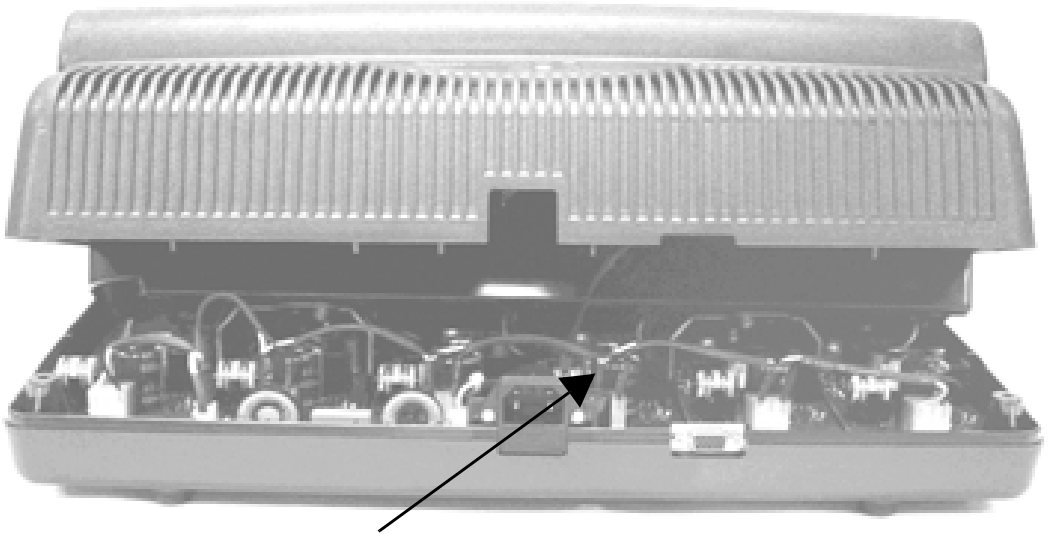
Turn the unit around and plug each LCD module/ wire connector into its corresponding PC board. The connector and header are keyed (grooved to properly align during insertion.)



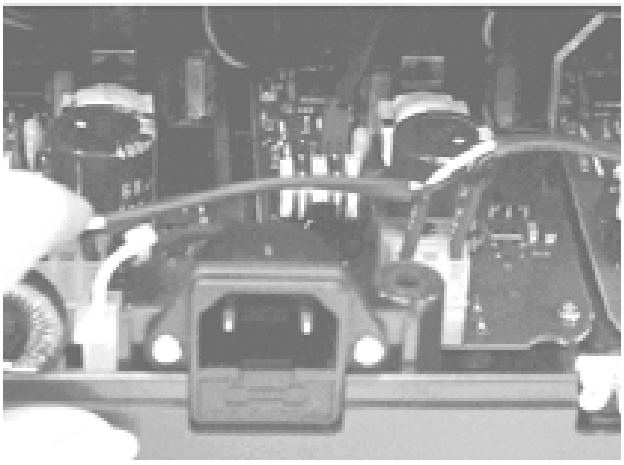


Step 6:

Fold the front housing over the base assembly and plug the fan harness into the nearest PC board. The fan connector and header are keyed to properly align during insertion. Ensure all LCD wire harnesses are encased in the housing.



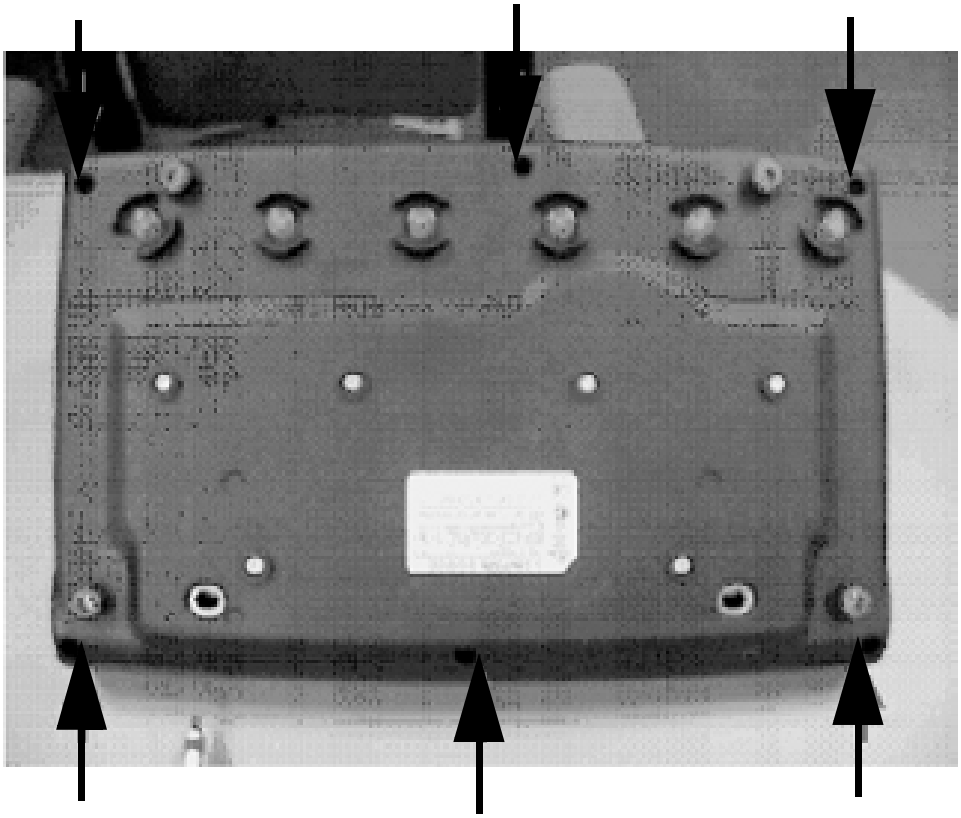
Plug Fan Harness into
3rd PC board from the right.

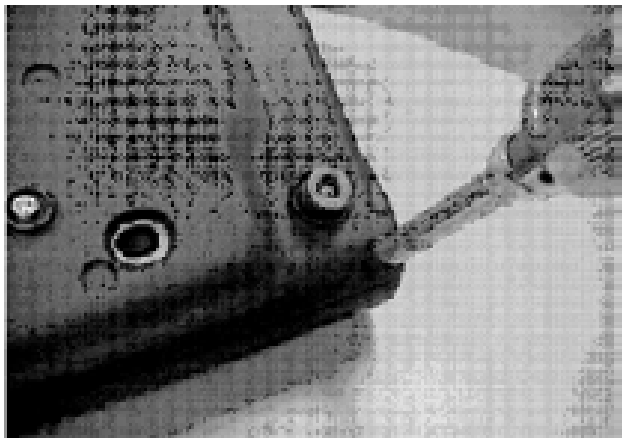


English

Step 7:

Close the unit carefully to avoid pinching any wires. Replace all six screws (previously removed in Step 1) with #20 Torx bit, and torque to approximately 10 in-lbs.





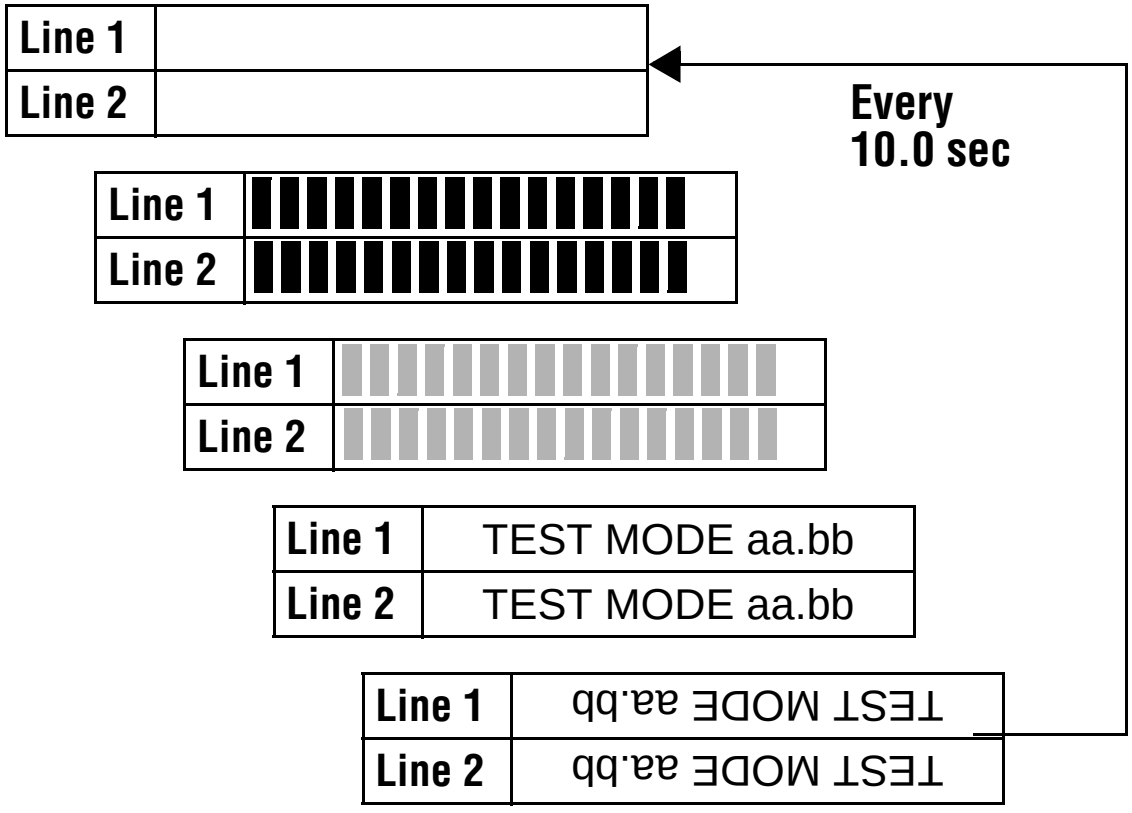
English

TEST MODE

Once the installation of the CDM is complete, the display can be tested to ensure proper installation and functionality. To initiate the test mode:

1. Plug the charger into an AC power outlet.
2. Insert the end of a large paper clip into the pinhole below the display on the front of the charger. The paper clip should be inserted perpendicular to the desktop. A “click” indicates the toggle button has been accessed.
3. Press and hold the toggle button for five seconds to access the test sequence.
4. The display will cycle through a series of displays (shown below) to indicate proper installation and operation.

Start



5. Press the toggle button again to exit the test mode.

   Note: Each CDM operates independently. If more than one CDM is installed in a charger, the test mode sequence can be run for each individual CDM.

GENERAL DISPLAY INFORMATION

The Charger Display Module (CDM) is designed to provide the user with valuable information while performing battery maintenance and care. Below details the information the CDM will display along with the corresponding LED indicator.

Start Up

Upon Charger Power-up

LED	SINGLE FLASH GREEN
Line 1	*IMPRES*
Line 2	

If There is No Battery in Pocket

LED	OFF
Line 1	NO BATTERY
Line 2	

Non-IMPRES Battery in the Pocket

LED	Defined by Charge State
Line 1	NON-*IMPRES*
Line 2	BATTERY

Note: If a **non-*IMPRES*** battery is in the pocket, this is the only information displayed.

IMPRES Battery in the Pocket

IMPRES and Software Versions are Displayed

LED	Defined by Charge State
Line 1	*IMPRES*
Line 2	SW xx.yy ; aa.bb

Note: xx.yy denotes charger SW version, and aa.bb denotes CDM SW version.

IMPRES Battery Kit # and Serial # are Displayed

(Each *IMPRES* battery shows a unique serial # for Easy ID)

LED	Defined by Charge State
Line 1	KIT# --------
Line 2	SN: ----------

IMPRES Battery Kit # and Chemistry are Displayed

LED	Defined by Charge State
Line 1	KIT# --------
Line 2	-----CHEMISTRY

Forecasted # of Cycles prior to Automatic Recondition

LED	Defined by Charge State
Line 1	- - - -CYCLES
Line 2	TO RECONDITION

* Displayed only when the number of cycles to recondition is less than 6.

Charger Waiting to Charge, Battery is Hot

LED	Flashing YELLOW
Line 1	WAITING TO CHG
Line 2	HOT BATTERY

Charger Waiting to Charge, Battery is Cold

LED	Flashing YELLOW
Line 1	WAITING TO CHG
Line 2	COLD BATTERY

Charger Waiting to Charge, Low Voltage

LED	Flashing YELLOW
Line 1	WAITING TO CHG
Line 2	LOW VOLTAGE

Charger is in Rapid Charge Mode

LED	Steady RED
Line 1	RAPID CHARGE
Line 2	

Charger is in Trickle Charge Mode

LED	Flashing GREEN
Line 1	TRICKLE CHARGE
Line 2	

Charge is Complete

LED	Steady GREEN
Line 1	CHARGE COMPLETE
Line 2	

Charger is in Discharge/Reconditioning Mode

LED	Steady YELLOW
Line 1	DISCHARGE
Line 2	

English

Charger Calibrating an IMPRES Battery

LED	Steady YELLOW, RED, Flashing YELLOW or GREEN
Line 1	Calibrating
Line 2	Battery

LED	Steady GREEN
Line 1	Battery
Line 2	Calibrated

* All *IMPRES* batteries should be calibrated before initial use. Charger will automatically initiate calibration for all new batteries.

Battery Capacity Data is Displayed as % in mAH, and Voltage

LED	Defined by Charge State
Line 1	----% RATED CAP.
Line 2	----mAH --.-V

Note: Not shown for uncalibrated batteries.
Note: Display will show slightly lower capacity after reaching charge completion if battery inserted in another pocket due to stand loss calculations, but the charger will correct this deviation when the battery reaches full charge in the new pocket, typically in a few minutes.

Estimated Time to Charge Complete Displayed in Hours, Minutes (NiCd & NiMH only)

LED	Defined by Charge State
Line 1	EST COMPLETE IN
Line 2	--HRS, --MIN

Note: Not all screens shown will be displayed. For example, Waiting to Charge displays (battery hot, cold, low voltage) will only be shown if the situation warrants.

Note: Fully charged *IMPRES* batteries immediately inserted into a different pocket will show a slightly lower initial capacity due to stand loss estimation, but the charger will correct this deviation when the battery reaches full charge in the new pocket, typically in a few minutes.

Note:

(1) Estimated time to complete charging includes trickle charge and discharge cycles (if applicable).

(2) Battery capacity information is not displayed for uncalibrated batteries.

(3) Use of *IMPRES* batteries with non-*IMPRES* chargers can affect capacity and charging time accuracy.

(4) Fully charged *IMPRES* NiCd & NiMH batteries inserted into a pocket will initially show 1 hour and 10 minutes estimated time to complete charge, but will typically revert to solid GREEN within a few minutes.

English

SEQUENCING DIAGRAMS FOR *IMPRES* NICD & NIMH BATTERIES

IMPRES Battery Display Sequence

Start

(4.0 sec)

LED	Defined by Charge State
Line 1	KIT# xxxxxxxx
Line 2	SN: yyyyyyyyyyy

Every 73.0 sec

(2.0 sec)

LED	Defined by Charge State
Line 1	KIT# xxxxxxxx
Line 2	yyyyy CHEMISTRY

(2.0 sec)

LED	Defined by Charge State
Line 1	xxxx CYCLES
Line 2	TO RECONDITION

(2.0sec)

LED	Steady RED
Line 1	RAPID CHARGE
Line 2	

Every 13.0 sec

(7.0 sec)

LED	Defined by Charge State
Line 1	xx% RATED CAP.
Line 2	yyyyy mAH zz.z V

5X 65.0 sec

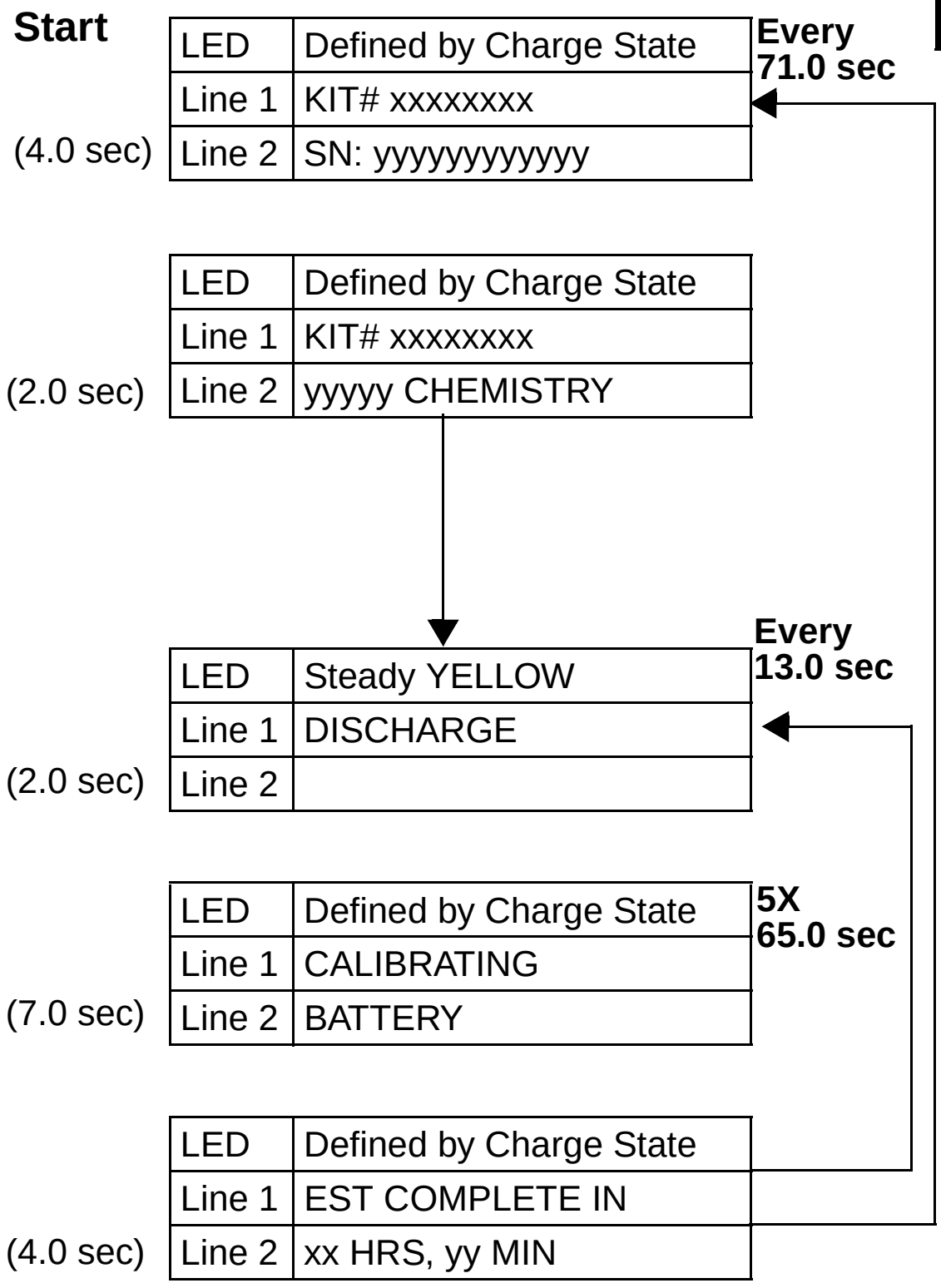
(4.0 sec)

LED	Defined by Charge State
Line 1	EST COMPLETE IN
Line 2	xx HRS, yy MIN

SEQUENCING DIAGRAMS FOR *IMPRES* NICD & NIMH BATTERIES

English

Before Calibration:



English

SEQUENCING DIAGRAMS FOR *IMPRES* NICD & NIMH BATTERIES

After Calibration:

Start

(4.0 sec)

LED	Defined by Charge State
Line 1	KIT# xxxxxxxx
Line 2	SN: yyyyyyyyyyy

Every 61.0 sec

(2.0 sec)

LED	Defined by Charge State
Line 1	KIT# xxxxxxxx
Line 2	yyyyy CHEMISTRY

(2.0 sec)

LED	Steady GREEN
Line 1	CHARGE COMPLETE
Line 2	

Every 11.0 sec

(2.0 sec)

LED	Defined by Charge State
Line 1	BATTERY
Line 2	CALIBRATED

5X 55.0 sec

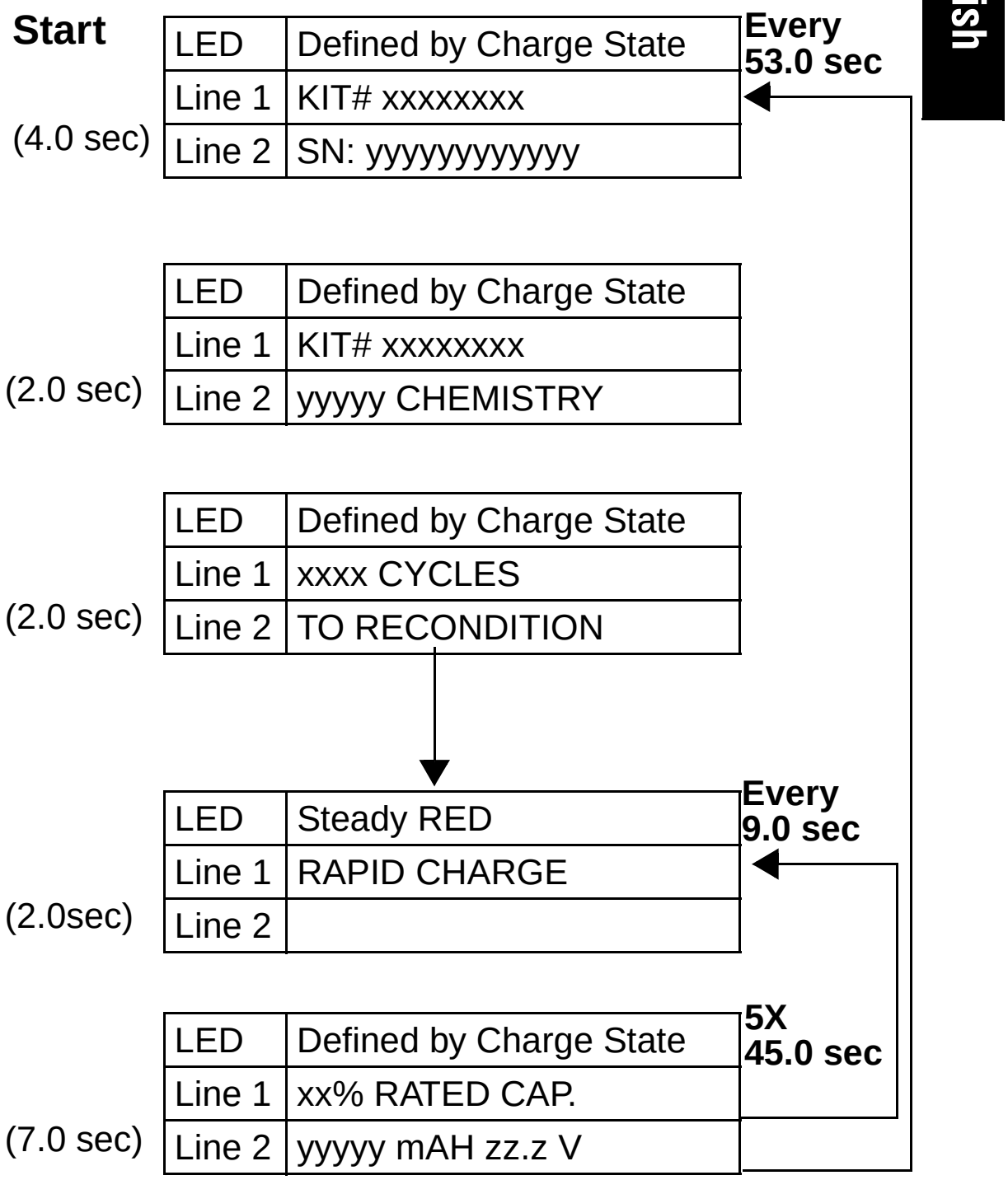
(7.0 sec)

LED	Defined by Charge State
Line 1	xx% RATED CAP.
Line 2	yyyy mAH zz.z V

SEQUENCING DIAGRAMS FOR *IMPRES* LI-ION BATTERIES

English

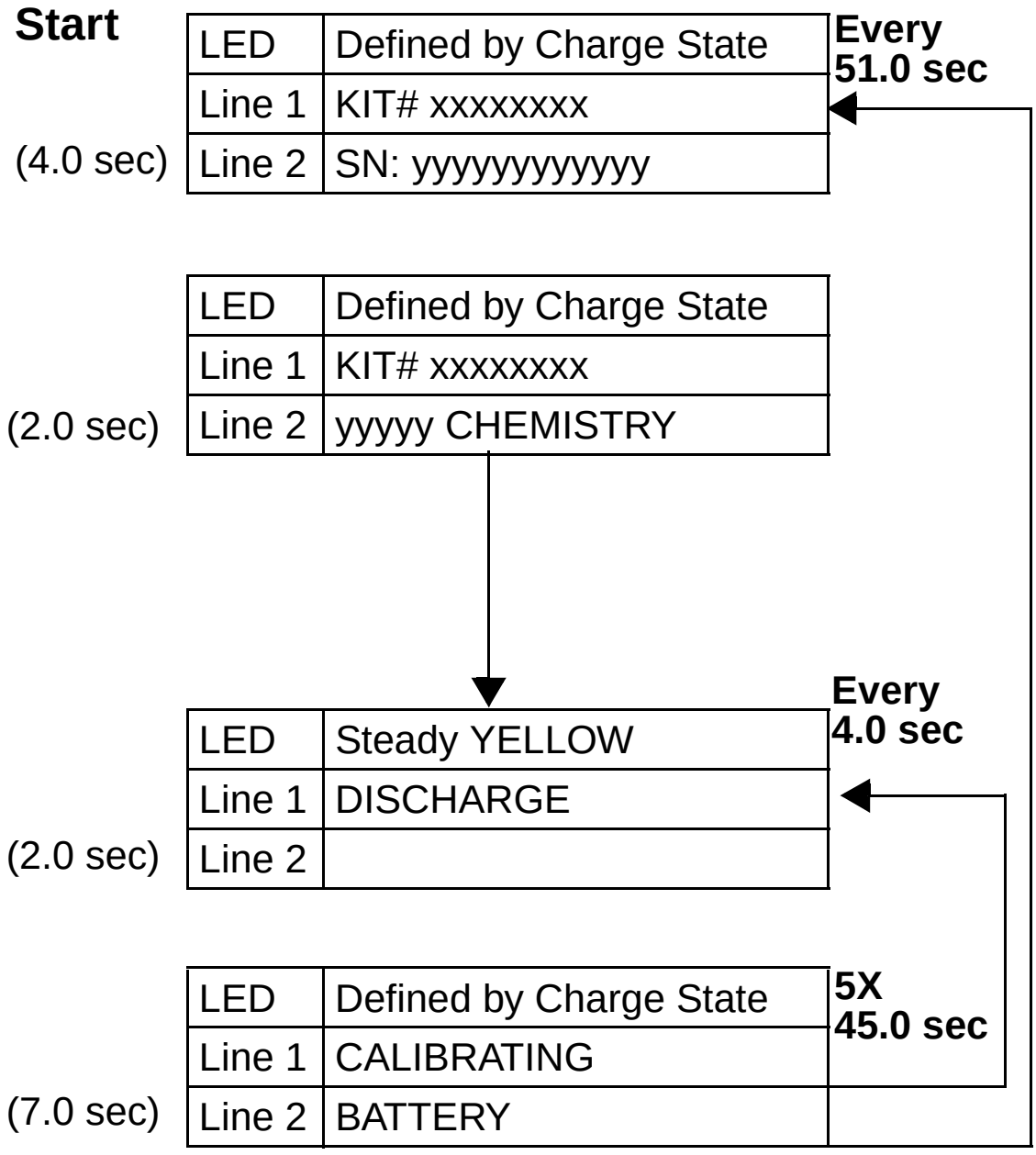
IMPRES Battery Display Sequence



English

SEQUENCING DIAGRAMS FOR *IMPRES* LI-ION BATTERIES

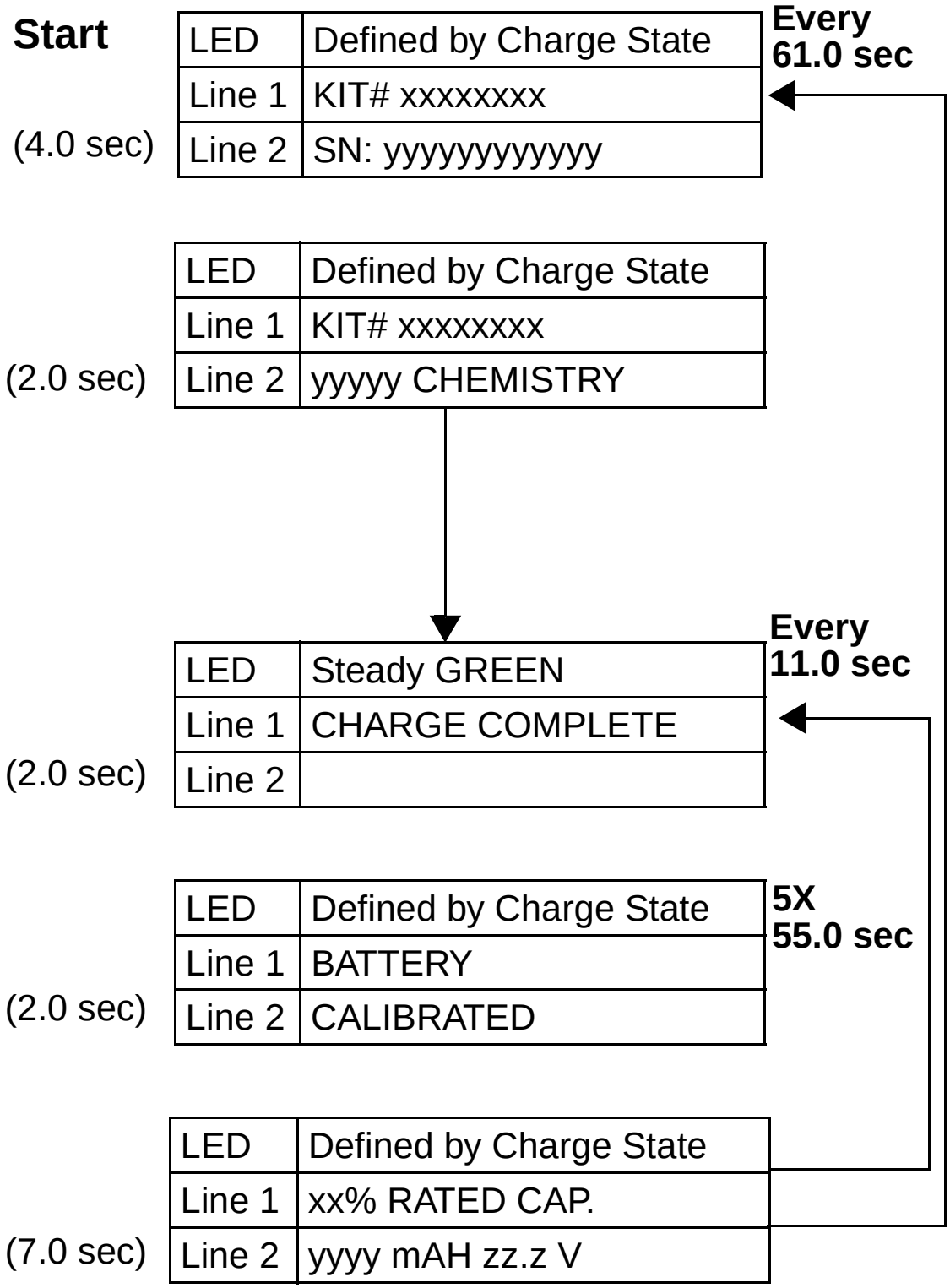
Before Calibration:



SEQUENCING DIAGRAMS FOR *IMPRES* LI-ION BATTERIES

English

After Calibration:



English

DISPLAY TEXT ORIENTATION

In order to allow for desk or wall mounting of the *IMPRES* Adaptive Multi-Unit Charger, the CDM is equipped with the ability to “flip” the display text 180 degrees.

To do this, insert a large paper clip into the pinhole below the display perpendicular to the desktop. A “click” indicates the toggle button has been actuated, flipping the text 180 degrees.

IMPRES ADAPTIVE MULTI-UNIT CHARGER OPERATION

For more information on the operation of the Multi-Unit Charger, refer the User Guide. For more information on serviceability of the MUC and CDM, refer to the Charger Service Guide, 6880309L66.

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