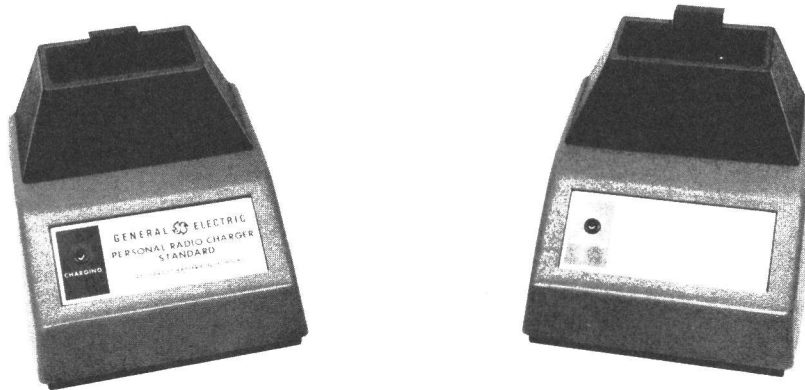


# MASTR<sup>®</sup> Personal Series

## PROGRESS LINE

MPE/PE 16-HOUR DESK CHARGERS 361L1A1X,  
361M1A1X, 381L1A1X AND 381M1A1X



### SPECIFICATIONS \*

<u>COMBINATION NO.</u>	<u>INPUT VOLTAGE</u> (50/60 Hz)	<u>INPUT CURRENT</u>	<u>INPUT POWER</u>
361L1A1X	121 VAC	33 Milliamps	4 Watts
361M1A1X	220 VAC	18 Milliamps	4 Watts
381L1A1X	121 VAC	33 Milliamps	4 Watts
381M1A1X	220 VAC	18 Milliamps	4 Watts

USED WITH MASTR Personal MPE/PE Series two-way radios

RECHARGE TIME 16 Hours

TEMPERATURE RANGE +5°C to 45°C  
(+41°F to 113°F)

\*These specifications are intended primarily for the use of the serviceman. Refer to the appropriate Specification Sheet for the complete specifications.

TABLE OF CONTENTS

SPECIFICATIONS ..... Cover

DESCRIPTION ..... 1

INSTALLATION ..... 1

OPERATION ..... 1

CIRCUIT ANALYSIS ..... 1

MAINTENANCE ..... 2

    Disassembly ..... 2

    Troubleshooting ..... 2

OUTLINE DIAGRAM ..... 4

SCHEMATIC DIAGRAMS

    Standard Desk Charger ..... 5

    Desk Charger for Intrinsically Safe 700 mAh Battery Packs ..... 7

PARTS LIST & PRODUCTION CHANGES

    Standard Desk Charger ..... 6

    Desk Charger for Intrinsically Safe 700 mAh Battery Packs ..... 8

ILLUSTRATIONS

Figure 1 - Desk Charger ..... 1

WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage; or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

## DESCRIPTION

General Electric 16-Hour Desk Chargers 361L1A1X, 361M1A1X, 381L1A1X and 381M1A1X, will recharge battery packs used with the MASTR Personal MPE/PE Series two-way radios. 361L1A1X for 121 VAC operation and 361M1A1X for 220 VAC operation will recharge the standard nickel-cadmium, 500 mAh or 700 mAh, battery pack. 381L1A1X for 121 VAC operation and 381M1A1X for 220 VAC operation will recharge the nickel-cadmium, 700 mAh Intrinsically Safe battery pack.

The Desk Charger will recharge a fully discharged battery pack 100% in 16 hours at a C/10 constant current charge rate. When a battery pack is inserted into the charging insert of the desk charger, an amber LED indicator will light, indicating that the battery is being charged.

Desk chargers for the Intrinsically Safe battery pack have a green coded front nameplate identifying the chargers to be for the Intrinsically Safe battery pack. The green coded desk chargers will not charge any other battery pack except the green coded Intrinsically Safe battery pack.

## INSTALLATION

The desk charger can be located on a table top or other flat surface. The location should be close to a 121-Volt AC or 220-Volt AC, 50/60 Hz source.

### CAUTION

The desk charger should not be used in a hazardous location.

## OPERATION

Temperature characteristics of nickel-cadmium batteries, prevent a full charge at temperature extremes. For a maximum charge, recharge the battery pack at room temperatures of from 65° to 85° Fahrenheit whenever possible.

To use the desk charger, plug the power cable into a 121-Volt AC or 220-Volt AC 50/60 Hz source (see Figure 1). Place the radio into the charging insert with the speaker facing the front of the charger, or place the battery pack into the insert with the arrow on the yellow label pointing toward the rear of the charger. The amber LED indicator labeled "CHARGING" will light, indicating the battery is being charged. To charge the battery to 100% capacity, let it stay

in the charging insert for at least 16 hours. A battery pack is removed from the charging insert by lifting up on the extractor.

### WARNING

General Electric Chargers covered in this manual, are designed for charging GE 500 mAh battery pack 19D413522G1, 700 mAh battery pack 19D413522G4 and the 700 mAh Intrinsically Safe battery pack 19D413522G5 only. Charging any other battery pack or batteries may result in damage to equipment, leakage or explosion.

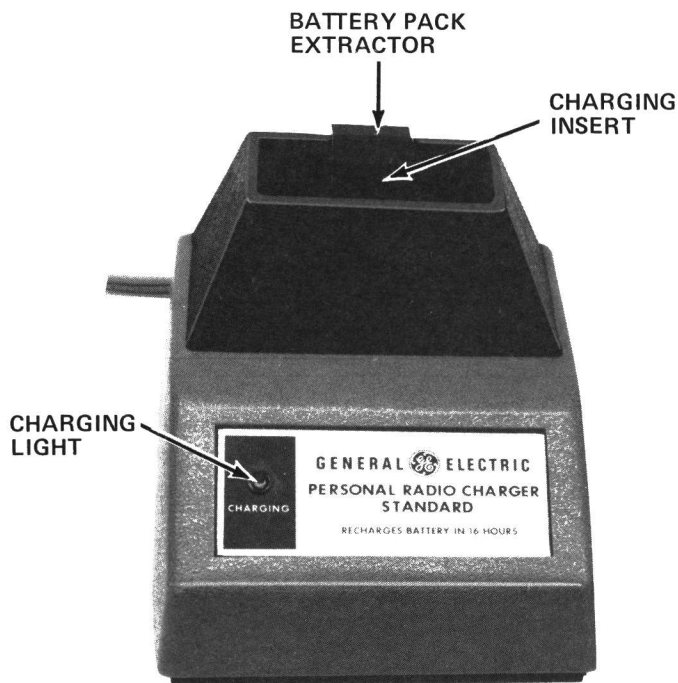


Figure 1 - Desk Charger

## CIRCUIT ANALYSIS

The 16-hour desk charger contains a power supply and a charging circuit. References to symbol numbers mentioned in the following text can be found on the applicable schematic and outline diagram or parts list (see Table of Contents).

AC voltage developed across the secondary of T1 or T2 is rectified by a full-wave bridge rectifier. The rectified output is applied to the charging circuit.

The charging circuit is a series resistance which determines the C/10 constant current charge rate, 50 mA for the 500 mAh battery pack and 70 mA for the 700 mAh battery pack. The charging current is applied to the battery pack when the pack is in the charging insert. The amber LED indicator labeled "CHARGING" lights when positive contact has been made with the battery contacts. Charging current for standard 500 mAh battery packs is applied through charger contacts E503 and E505. Charging current for the 700 mAh battery pack is applied through charging contacts E501 and E504. Charging current for the Intrinsically Safe battery pack is applied through charger contacts E503 and E504.

#### MAINTENANCE

#### DISASSEMBLY

To gain access to the desk charger circuitry for servicing, remove the three

Phillips-head screws in the bottom of the charger and carefully lift off the housing. The charger must be disassembled to replace the LED indicator and the fuse.

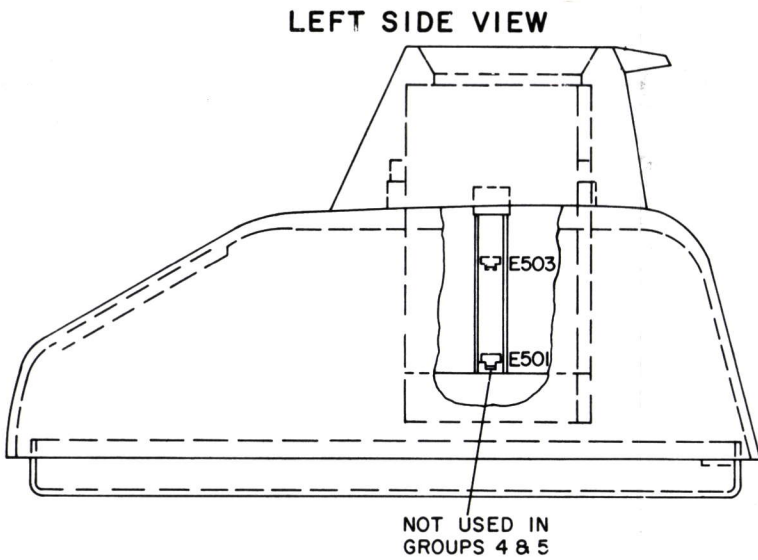
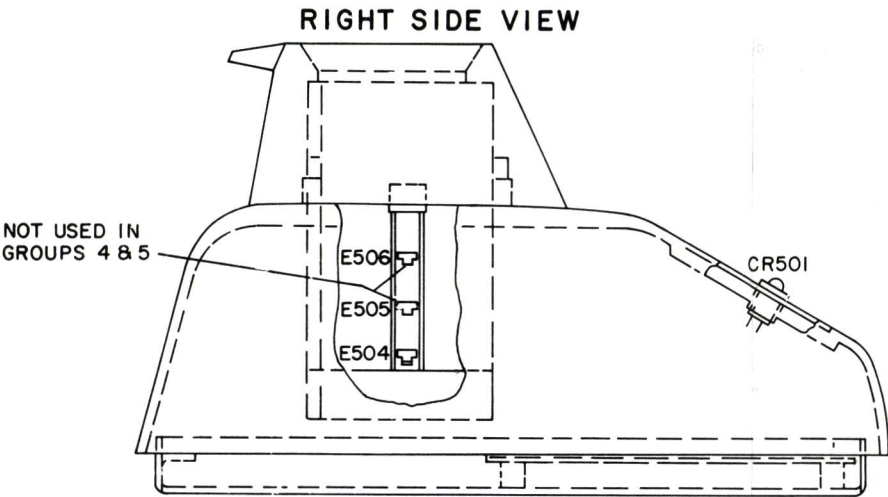
#### TROUBLESHOOTING

Should a service problem arise, the following chart contains possible causes.

SYMPTOM	CHECK FOR:
CR501 does not light.	<ol style="list-style-type: none"> <li>1. Battery is not in charging insert properly.</li> <li>2. Fuse F1 is open.</li> <li>3. LED CR501 is open</li> </ol>

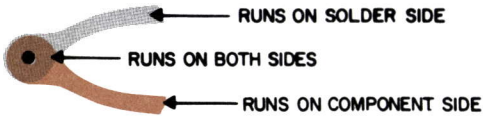
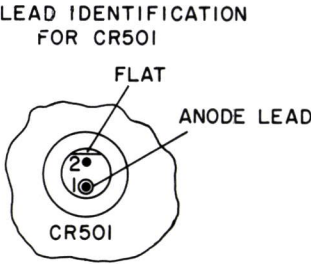
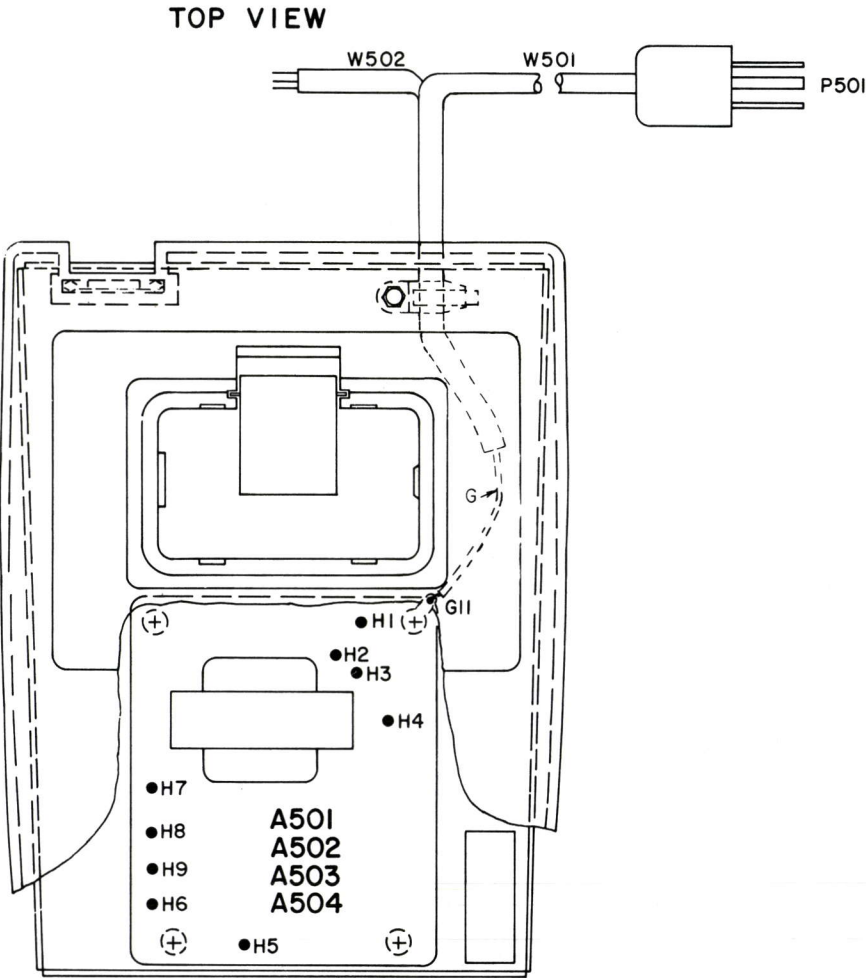
GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION  
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.



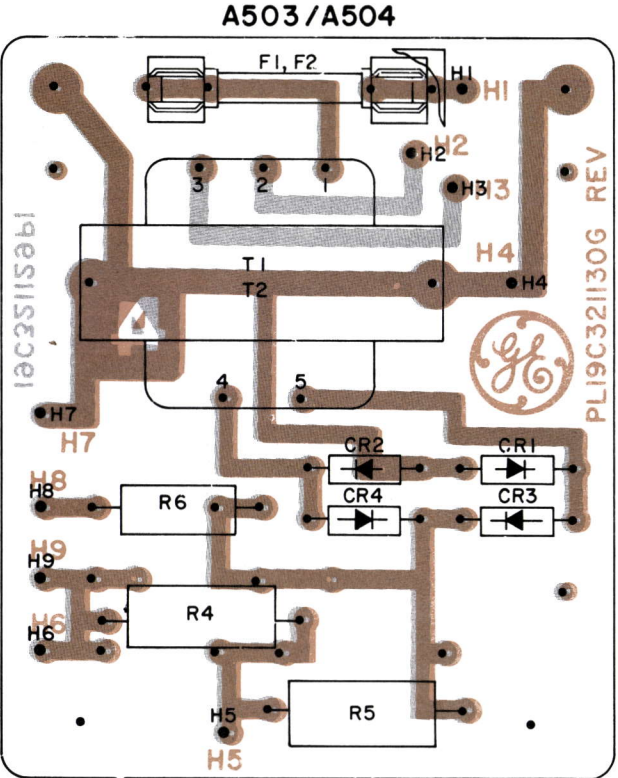
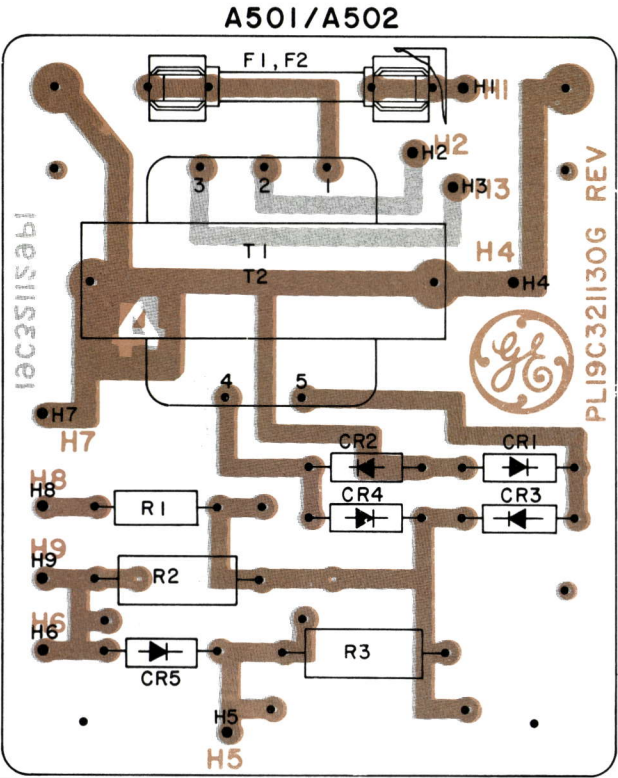


OUTLINE DIAGRAM

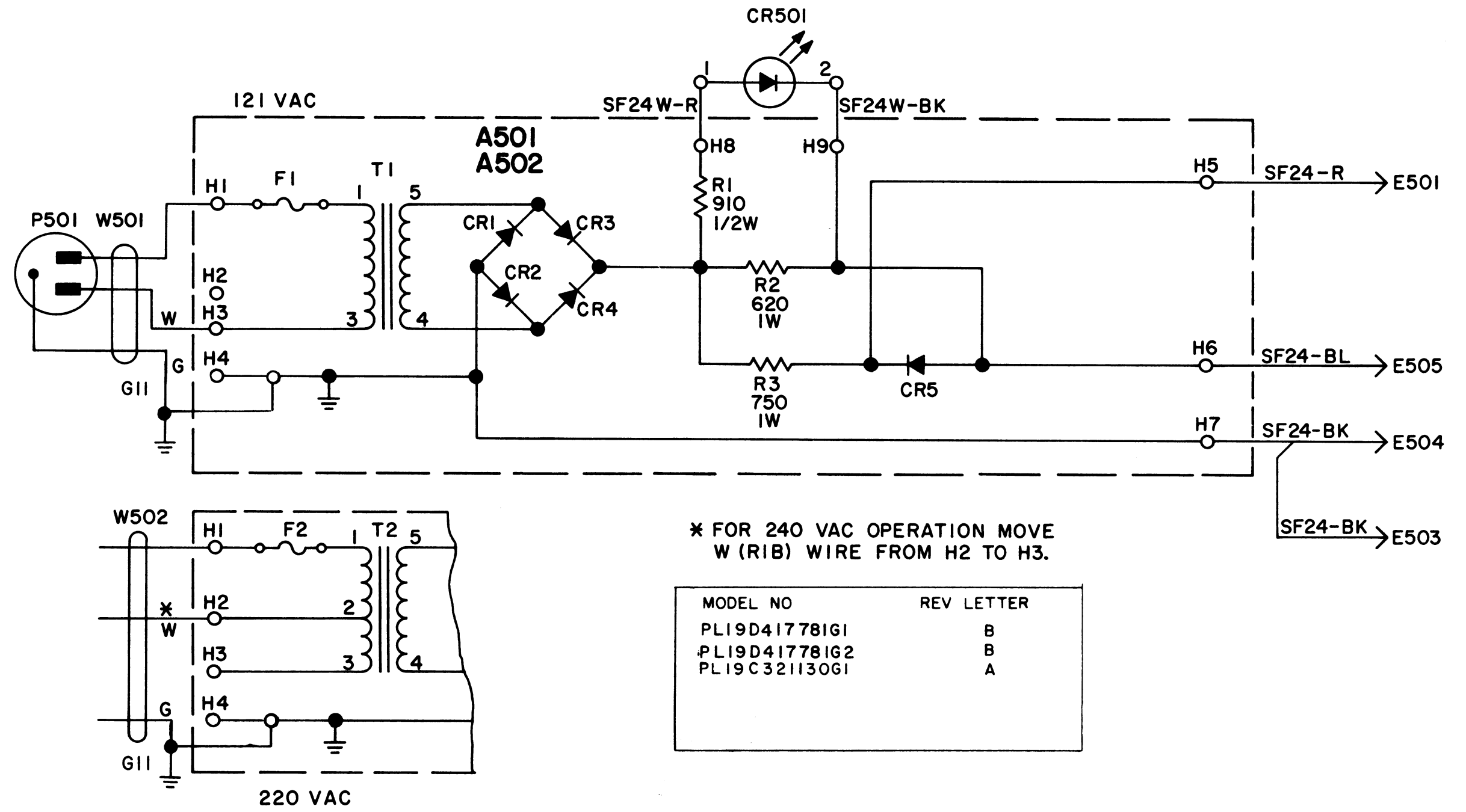
16 HOUR DESK CHARGER



(19D423495, Rev. 3)



(19C321129, Sh. 2, Rev. 4)  
(19C321129, Sh. 3, Rev. 4)



(19B226468, Rev. 6)

# SCHEMATIC DIAGRAM

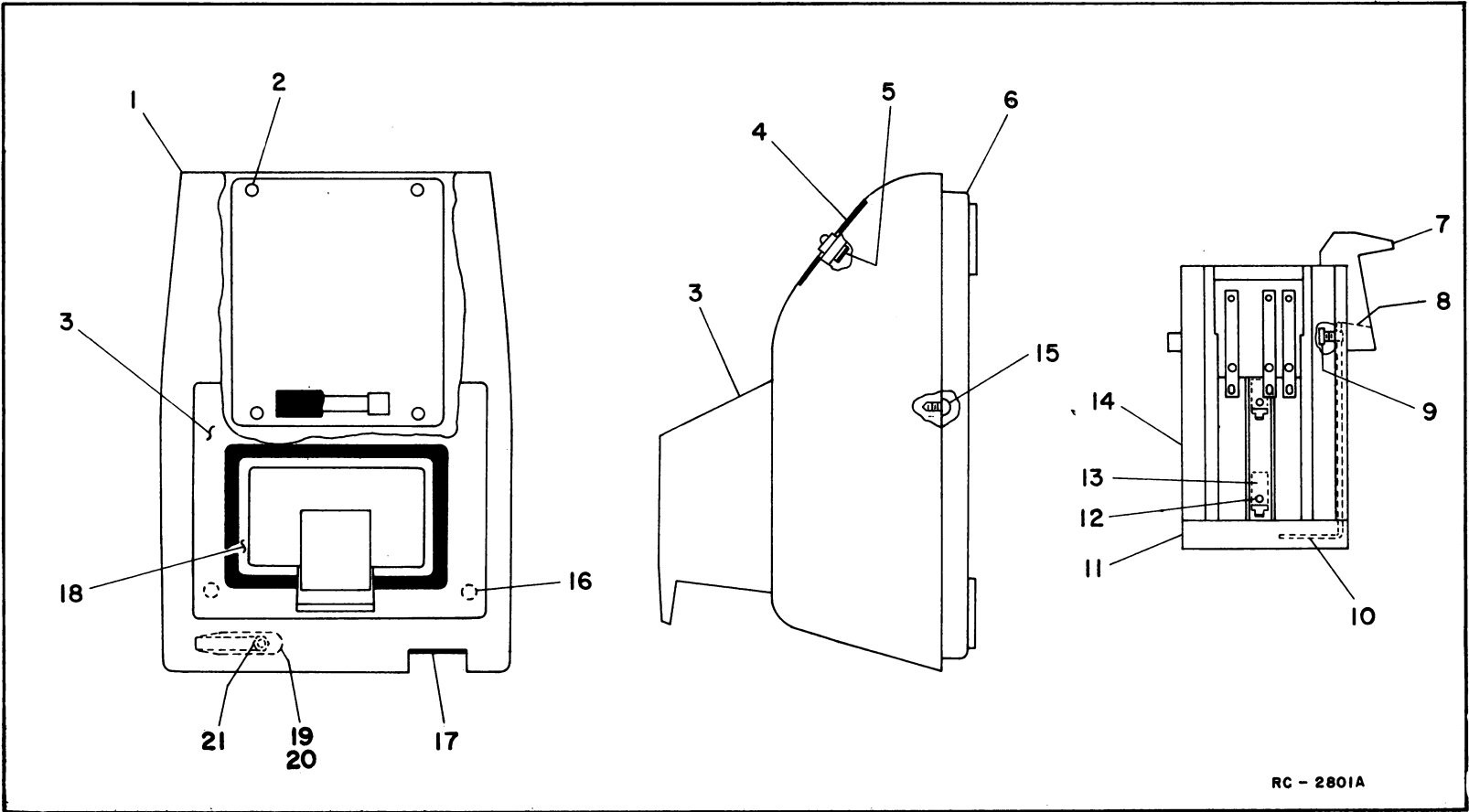
DESK CHARGER  
361L1A1X & 361M1A1X

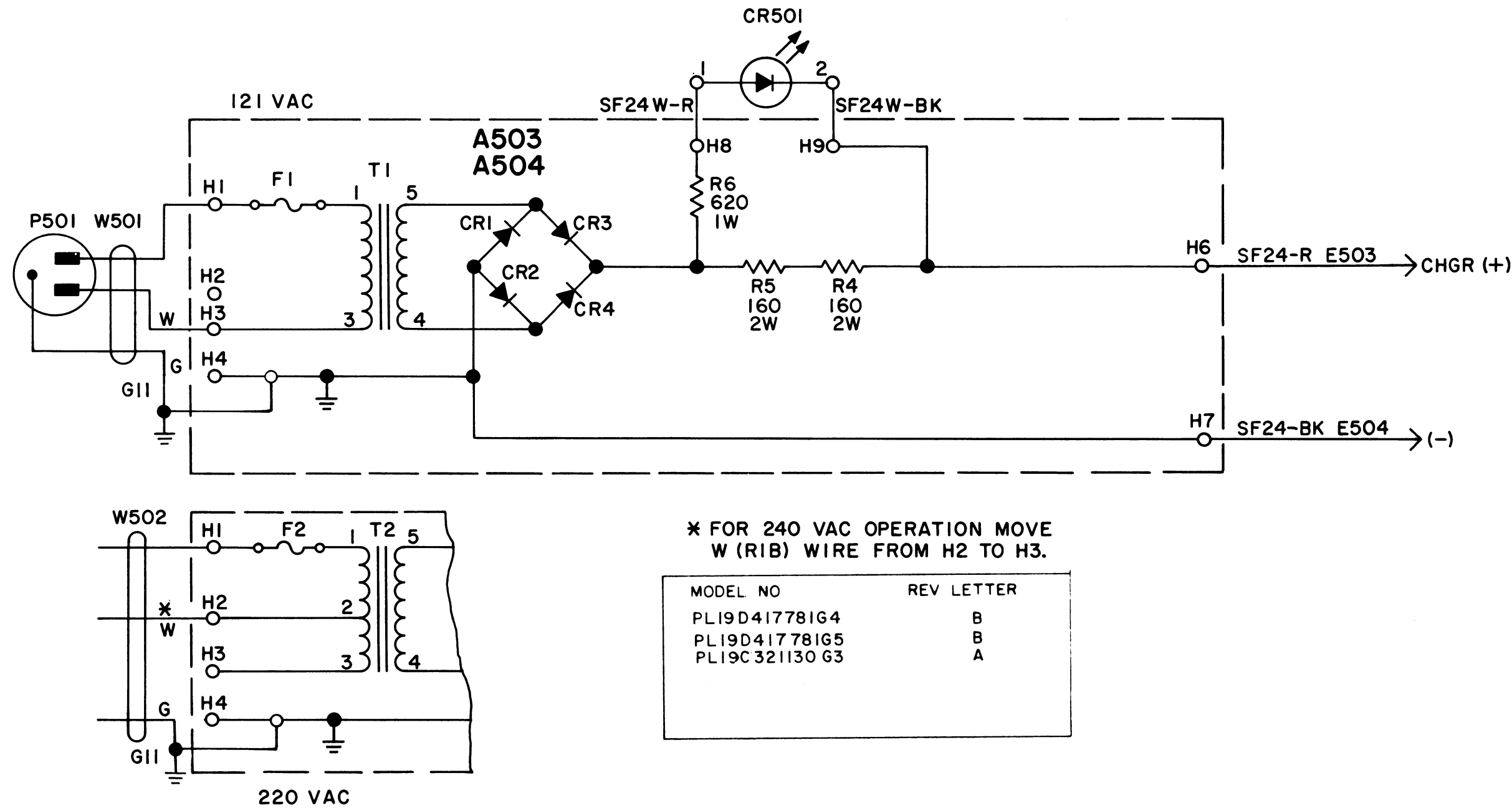
PARTS LIST

LBI4951C  
DESK CHARGER  
381L1A1X 19D417781G1 121 VAC - REV B  
381M1A1X 19D427782G2 220/240 VAC - REV B

SYMBOL	GE PART NO.	DESCRIPTION
A501 and A502		COMPONENT BOARD A501 19C321130G1 121 VAC A502 19C321130G2 220/240 VAC
		----- DIODES AND RECTIFIERS -----
CR1 thru CR5	4037822PL	Silicon, 1000 mA, 400 PIV.
		----- FUSES -----
F1	7487942P10	Cartridge, quick blow: 1/8 amps at 250 v; sim to Bussmann MDL 1/8.
F2	7487942P6	Cartridge, slow blow: 1/16 amps at 250 v; sim to Bussmann MDL 1/16.
		----- RESISTORS -----
R1	3R77P911J	Composition: 910 ohms + or - 5%, 1/2 w.
R2	3R78P621J	Composition: 620 ohms + or - 5%, 1 w.
R3	3R78P751J	Composition: 750 ohms + or - 5%, 1 w.
		----- TRANSFORMERS -----
T1	19A134091P1	Power, step-down: Pri: 121 VRMS, 50/60 Hz, Output: 30 + or - 1.2 VAC at 100 mA.
T2	19A134091P2	Power, step down: Pri: 220/240 VRMS, 50/60 Hz, Output: 30 + or - 1.2 VAC at 100 mA.
		----- DIODES AND RECTIFIERS -----
CR501	19A134354P2	Diode, optoelectronic: yellow; sim to Hew. Packard 5082-4655.
		----- PLUGS -----
P501		(Part of W501).
		----- CABLES -----
W501*	19B232987G1	Power: 2 pole, 3 wire grounding, approx 6 feet long. (Includes P501).
		Earlier than REV A:
	19A116682P1	Push, sensitive: single pole, normally open, 5 amp at 125/250 VRMS, 60 Hz; sim to Cherry Electrical E23-23B. (Includes P501).
W502*	19B232987G2	Power: 3 conductors, size No. 18 AWG; UL Type SPT-3.
		Earlier than REV A:
	19B227086G2	Power: 3 conductors, size No. 18 AWG; UL Type SPT-3 Rip Cord.
		HARNESS ASSEMBLY 19D417781G3 (Includes CR501)
		MECHANICAL PARTS (SEE RC2801A)
1	9E500894P2	Housing.
2	N80P9004C6	Screw, phillips: panhead, No. 4-40 x 1/4.
3	19D417839P1	Collar.
4	NP279906	Nameplate.

SYMBOL	GE PART NO.	DESCRIPTION
5	19A134521P4	Lens, yellow; sim to Visual Comm. CLF-280-YTP.
6	19D432476P1	Base assembly.
7	19B216965P1	Extractor.
8	19B219104P1	Block.
9	N136P505C	Tap screw: No. 2-32 x 5/16.
10	19B216963P3	Angle.
11	19C321010P1	Cover.
12	N136AP503C	Tap screw: No. 2-32 x 3/16.
13	19C327044P1	Contact.
14	19D413607P2	Sleeve.
15	19A116773P108	Tap screw, Phillips POZIDRIVE®: No. 7-19 x 1/2. (Secures housing to base).
16	19A116773P108	Tap screw, Phillips POZIDRIVE®: No. 7-19 x 1/2. (Secures collar to housing).
17	19C317175P2	Plug. (Battery charging option).
18	19C321147G2	Sleeve assembly. (Includes items 7-14).
19	19J706152P4	Strap base: sim to Panduit Corp. TA-1.
20	19J706152P3	Strap: sim to Panduit Corp. SST-1.
21	7141225P3	Hex nut: No. 6-32.





(19B226825, Rev. 5)

**SCHEMATIC DIAGRAM**

DESK CHARGER  
381L1A1X & 381MA1X



PARTS LIST

LBI4953C  
DESK CHARGER  
FOR AGENCY APPROVED 700 mAh BATTERIES  
381L1A1X 19D417781G4 121 VAC  
381M1A1X 19D427782G5 220/240 VAC

SYMBOL	GE PART NO.	DESCRIPTION
A503 and A504		COMPONENT BOARD A503 19C321130G3 121 VAC A504 19C321130G4 220/240 VAC
CR1 thru CR4	4037822PL	DIODES AND RECTIFIERS Silicon, 1000 mA, 400 PIV.
F1	7487942P10	FUSES Cartridge, quick blow: 1/8 amps at 250 v; sim to Bussmann MDL 1/8.
F2	7487942P6	Cartridge, slow blow: 1/16 amps at 250 v; sim to Bussmann MDL 1/16.
R4 and R5	3R79P161J	RESISTORS Composition: 160 ohms + or - 5%, 2 w.
R6	3R78P621J	Composition: 620 ohms + or - 5%, 1 w.
T1	19A134091P1	TRANSFORMERS Power, step-down: Pri: 121 VRMS, 50/60 Hz, Output: 30 + or - 1.2 VAC at 100 mA.
T2	19A134091P2	Power, step down: Pri: 220/240 VRMS, 50/60 Hz, Output: 30 + or - 1.2 VAC at 100 mA.
CR501	19A134354P2	DIODES AND RECTIFIERS Diode, optoelectronic: yellow; sim to Hew. Packard 5082-4655.
P501		PLUGS (Part of W501).
W501*	19B232987G1	CABLES Power: 2 pole, 3 wire grounding, approx 6 feet long. (Includes P501). Earlier than REV A:
	19A116682P1	Push, sensitive: single pole, normally open, 5 amp at 125/250 VRMS, 60 Hz; sim to Cherry Electrical E23-23B. (Includes P501).
W502*	19B232987G2	Power: 3 conductors, size No. 18 AWG; UL Type SPT-3. Earlier than REV A:
	19B227086G2	Power: 3 conductors, size No. 18 AWG; UL Type SPT-3 Rip Cord.
		HARNES ASSEMBLY 19D417781G6 (Includes CR501)
		MECHANICAL PARTS (SEE RC2801)
1	9E500894P2	Housing.
2	N80P9004C6	Screw, phillips: panhead, No. 4-40 x 1/4.
3	19D417639P1	Collar.
4	NP279952	Nameplate.

SYMBOL	GE PART NO.	DESCRIPTION
5	19A134521P4	Lens, yellow; sim to Visual Comm. CLF-280-YTP.
6	19D432476P1	Base assembly.
7	19B216965P1	Extractor.
8	19B219104P1	Block.
9	N136P505C	Tap screw: No. 2-32 x 5/16.
10	19B216963P3	Angle.
11	19C321010P1	Cover.
12	N136AP503C	Tap screw: No. 2-32 x 3/16.
13	19C327044P1	Contact.
14	19D413607P2	Sleeve.
15	19A116773P108	Tap screw, Phillips POZIDRIV®: No. 7-19 x 1/2. (Secures housing to base).
16	19A116773P108	Tap screw, Phillips POZIDRIV®: No. 7-19 x 1/2. (Secures collar to housing).
17	19C317175P2	Plug. (Battery charging option).
18	19C321147G2	Sleeve assembly. (Includes items 7-14).
19	19J706152P4	Strap base: sim to Panduit Corp. TA-1.
20	19J706152P3	Strap: sim to Panduit Corp. SST-1.
21	7141225P3	Hex nut: No. 6-32.

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter," which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A - DESK CHARGERS 19D417781G1,G2,G4&5

To incorporate changes to meet CSA standards.  
Changed power cord ground wire termination.  
Added 35 pound pull on power cord strain relief.  
Added internal label for fuse rating.  
Removed sharp edges on plastic housing near power cord.

REV. B - To change desk chargers from a fabricated sheet metal base assembly to a molded Lexan base assembly. Changed base assembly. Base assembly was 19C317108G2.

