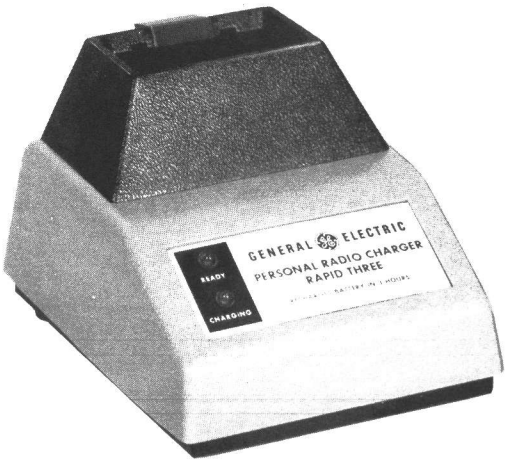
MOBILE RADIO

MASTR® Personal Series
PROGRESS LINE

PE 3-HOUR DESK CHARGERS 361L3A1X, 366L3A1X, 361M3A1X, AND 366M3A1X



DESK CHARGERS
361L3A1X and 361M3A1X

SPECIFICATIONS *

Combination No.	Input Voltage (50/60 Hz)	Input Current	Input Power
361L3A1X 366L3A1X	121 VAC	100 milliamps	8.5 watts
361M3A1X 366M3A1X	220 VAC	60 milliamps	8.5 watts

Used with MASTR® PE two-way radios

Recharge Time 3 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.

GENERAL ELECTRIC

TABLE OF CONTENTS

ILLUSTRATIONS

COMBINATION NOMAENCLATURE

Product Line	Application	Package	Input Voltage	Charge Time	Version	Type	Frequency Range
3 Charger	**6** PE (700 mAh batt)	**1** Desk	**L** 121 VAC	**3** 3 hour	**A** 1 Charge Socket	**1** Standard	**X** Not Range Sensitive
		6 Base Station	**M** 220 VAC				

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 Desk Chargers will recharge 700 mAh battery packs used with the MASTR® Personal PE Series, FM two-way radios. A 700 mAh battery pack will be recharged 100% in 3 hours at a constant current charge rate of C/2 or 350 milliamps.

When a battery pack is inserted into the charging insert of the desk charger, an amber LED indicator labeled "CHARGING" will light, indicating the battery pack is being charged. When the 700 mAh battery pack is fully charged, a green LED indicator labeled "READY" will light and the charger will automatically switch to a safe 20 milliamp trickle charge rate. The "CHARGING" indicator will go out.

The desk charger uses heat sensors to constantly monitor the temperature of both the battery pack and the charging insert. When a cold battery pack is inserted into the charging insert, the charger will wait until the battery pack has warmed up to within approximately 10°C of ambient. The charger will then, automatically, apply the high C/2 charging rate. When the battery pack overcharges enough to heat the cells 10°C above ambient, the charger will switch from fast charge to trickle charge. The charger also has a memory, set when the charger switches from the C/2 charging rate to trickle charge and reset by removing the battery pack from the charging insert or an AC power failure. If a hot battery is in the charging insert and the memory has not been reset, the charger will remain at the trickle charge rate. If the memory has been reset, the charger will wait until the battery pack has cooled before automatically switching to fast charge. If a fully charged battery pack is removed from the charging insert and then re-inserted, it will charge for approximately 1/2 hour until the cells reheat.

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. If the charger is a Base Station charger, it should be conveniently located for the operator.

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.

WARNING

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

To use the desk charger, plug the power cable into the applicable 121-Volt 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 the 700 mAh battery pack charge for 3 hours or until the "READY" indicator is on. If the radio is equipped with Option 4646, it can be used to send and receive messages while the battery is being recharged, although, it will take longer to fully recharge the battery.

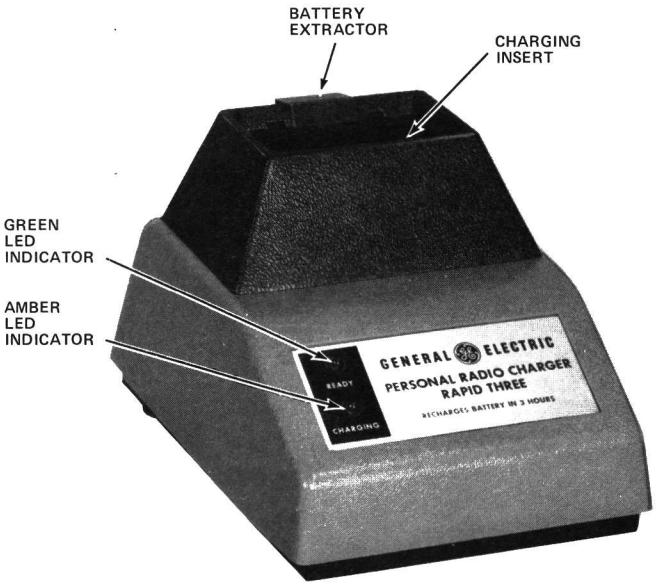


Figure 1 - Desk Charger

CIRCUIT ANALYSIS

The 3-hour desk charger consists of a power supply, charging circuit and temperature controlled cut-off circuit. The power supply is a fullwave rectifier circuit with an unfiltered output. The unfiltered output of the power supply causes the charging current to flow through silicon controlled rectifier Q2 and series connected resistor R4 at 100 to 120 Hz/second. Resistor R4, in the charging circuit, determines the high charge rate. The temperature controlled cut-off circuit is contained in thick film hybrid integrated circuit (IC) U1.

Temperature cut-off IC U1 monitors the temperature of both the charging insert, through thermistor RT1, and the battery pack through a thermistor inside the battery pack. It also fires SCR Q2, turns the "READY" indicator on when the battery pack is fully charged and provides memory to prevent the same battery pack from being recharged at the high rate.

Thermistors RT1 and RT Battery are connected with R6 and R7 to form a bridge circuit (See Figure 2). The outputs of the bridge circuit are connected to terminals 2 and 14 of U1. When a battery pack is in the charging insert and U1 senses the bridge to be in a nearly balanced condition, the high rate of charge is enabled. When the battery pack is removed from the charging insert RT Battery is removed from the bridge circuit causing the bridge to be unbalanced. U1 senses the bridge to be unbalanced, the voltage on U1-14 being much larger than the voltage on U1-2, and the charger memory is reset.

When the battery pack temperature is more than 10°C below ambient, thermistor RT Battery is a high resistance and the voltage on U1-14 is larger than the voltage on U1-2 just as though no battery pack were present. There is no output from U1-6 or U1-5 and SCR Q2 and LED "READY" indicator CR2 remain off. The battery pack charges at a low rate, determined by series resistor R1, until it is less than 10°C below ambient. At less than 10°C below ambient, the voltage at U1-14 and U1-2 are nearly equal and the output at U1-6 goes high to fire Q2 and begin the high charge rate. As the battery pack temperature increases 10°C above ambient during overcharge, the voltage at U1-2 becomes larger than the voltage at U1-14 causing U1-6 to go low. U1-6 going low removes the gating signal from SCR Q2. Q2 cuts off and the charge rate switches from the high rate to the low rate. The larger voltage on U1-2 also causes U1-5

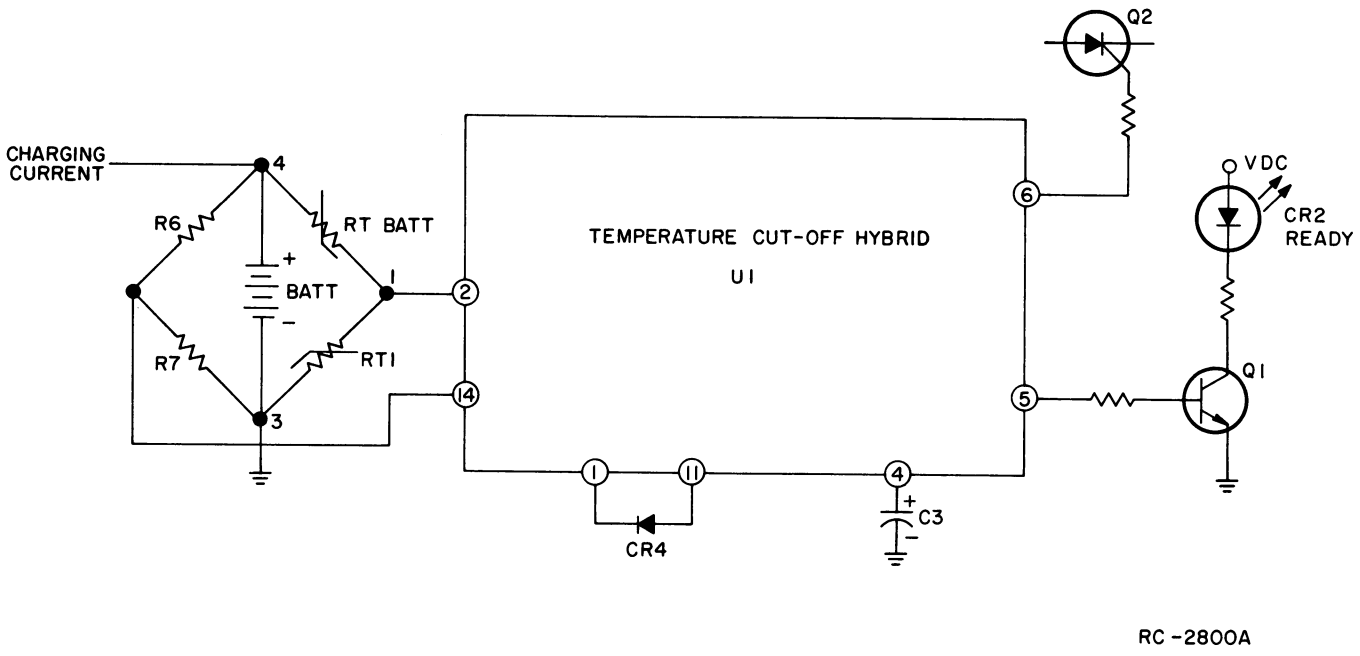


Figure 2 - Simplified Temperature Cut-Off Circuit

to go high. The high output on U1-5 causes transistor Q1 to conduct and CR2 to light. A memory circuit inside of U1 is set so that the same battery pack cannot be recharged at the high charge rate unless it is first removed from the charging insert to reset the memory. If a battery is too hot or too cold, no indicator lights will come on. The battery will receive the 20 mA trickle charge until the battery temperature is within the normal range. At that time, the charger will apply the C/2 rate and the "CHARGING" indicator will light.

DESK CHARGER BASE STATION

A 3-hour Base Station desk charger and a MASTR® Personal PE Series two-way FM radio can be used as a base station. Charger housing assembly 19D423232G1 is equipped with external connections for an antenna, microphone and PTT switch. A red LED "TRANSMIT" light is also part of the housing assembly. Refer to the Table of Contents for the base station housing assembly schematic and outline diagrams.

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 indicators and fuse.

TROUBLESHOOTING

Should a difficult service problem arise, the Troubleshooting Procedure listed in the Table of Contents is provided to assist the serviceman.

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

GENERAL ELECTRIC*
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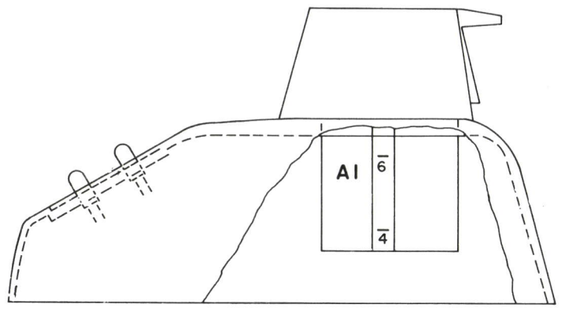
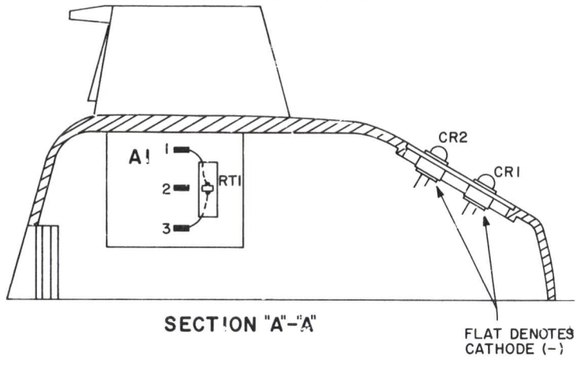
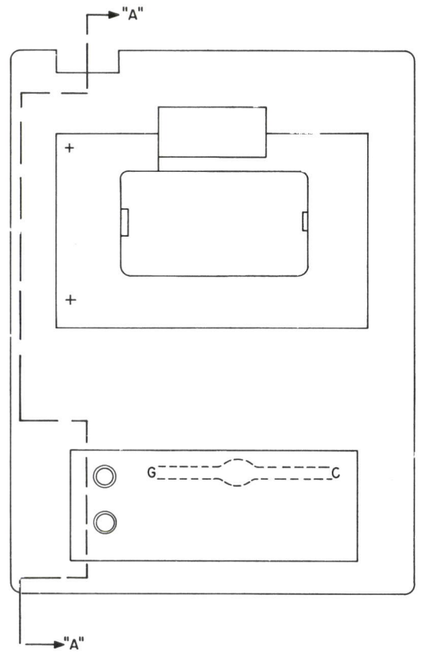
RIGHT SIDE VIEW



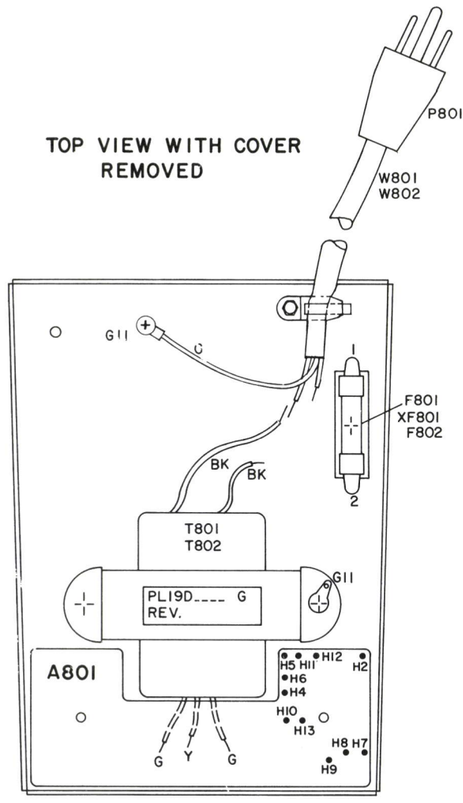
LEFT SIDE VIEW



TOP VIEW

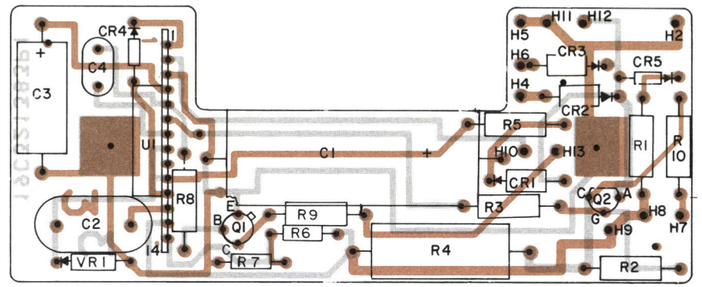


TOP VIEW WITH COVER REMOVED



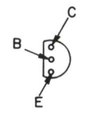
(19D432560, Rev. 5)

A801

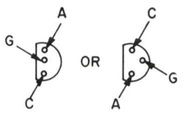


(19B226663, Sh. 1, Rev. 3)
(19B226663, Sh. 2, Rev. 3)

LEAD IDENTIFICATION FOR Q1

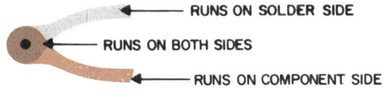


LEAD IDENTIFICATION FOR Q2



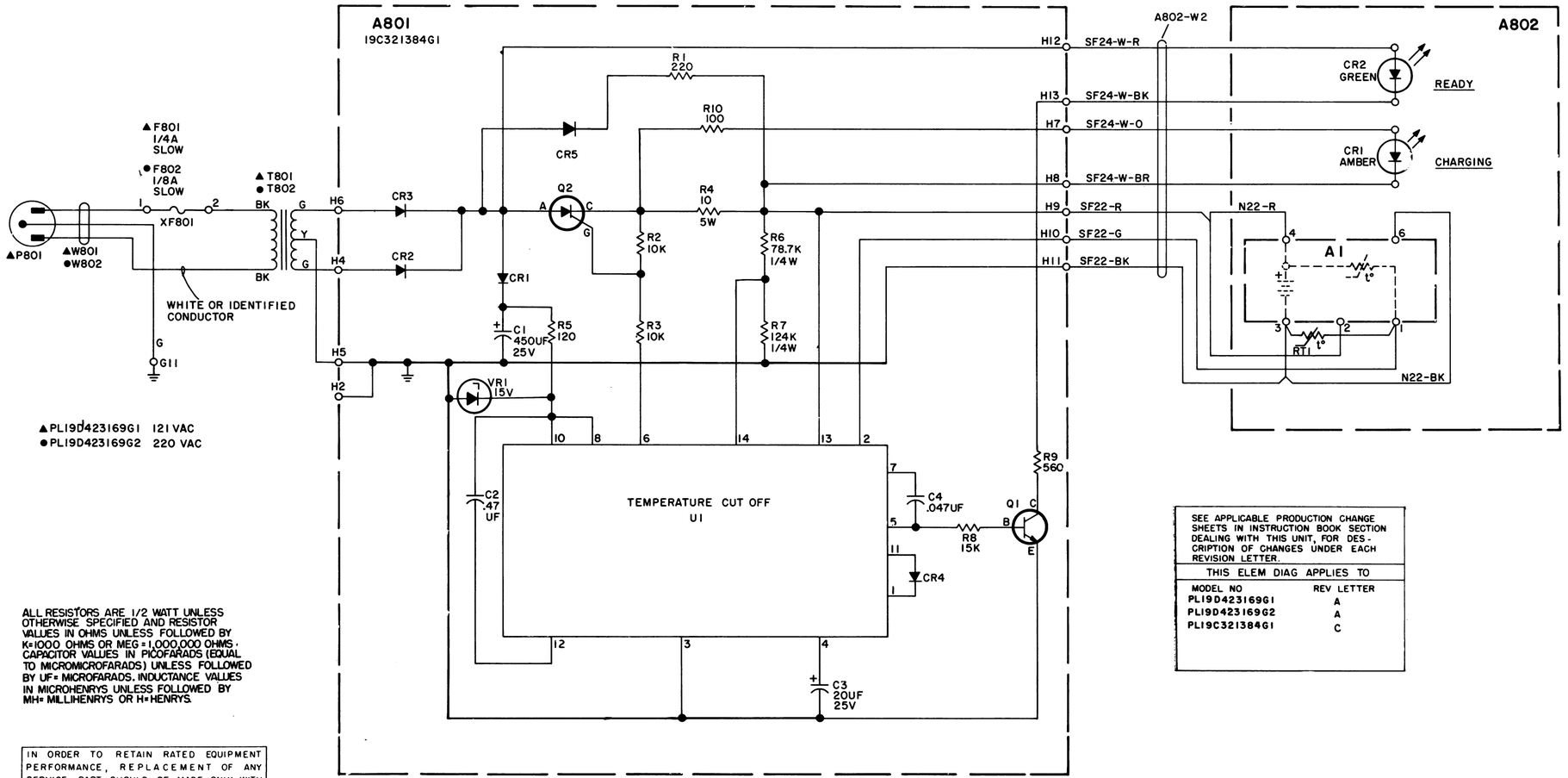
VIEW FROM LEAD END

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.



OUTLINE DIAGRAM

3-HOUR DESK CHARGER



ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PL19D423169G1	A
PL19D423169G2	A
PL19C321384G1	C

(19D423197, Rev. 6)

SCHEMATIC DIAGRAM

3-HOUR DESK CHARGER

PARTS LIST

LBI4956C

3 HOUR DESK CHARGER

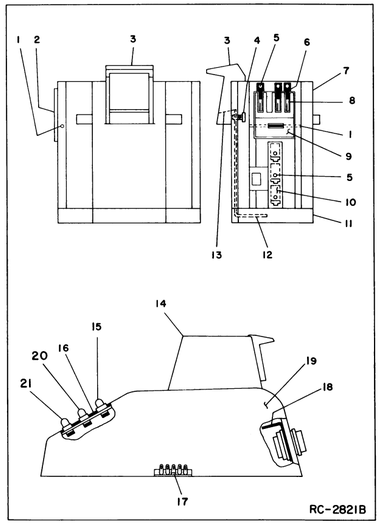
361L3A1X	19D423169G1	121 VAC	
361M3A1X	19D423169G2	220 VAC	
366L3A1X	19D423169G3	121 VAC	BASE STATION
366M3A1X	19D423169G4	220 VAC	BASE STATION

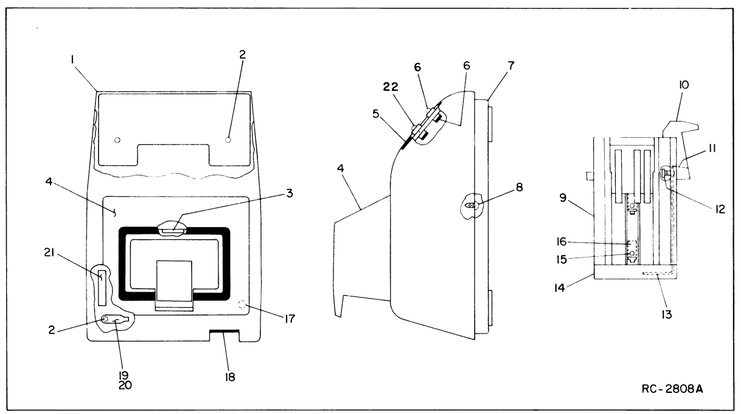
SYMBOL	GE PART NO.	DESCRIPTION
A801		COMPONENT BOARD 19C321384G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1*	5493132P23	Electrolytic: 450 µf +75% -10%, 25 VDCW; sim to Sprague Type 39D457G-025FJ6.
		In REV B & earlier:
	19A115680P5	Electrolytic: 100 µf +150% -10%, 25 VDCW; sim to Mallory Type TTX.
C2	19A116080P111	Polyester: 0.47 µf ±10%, 50 VDCW.
C3	19A115680P3	Electrolytic: 20 µf +150% -10%, 25 VDCW; sim to Mallory Type TTX.
C4	19A116080P105	Polyester: 0.047 µf ±10%, 50 VDCW.
C5*	19A134202P5	Tantalum: 3.3 µf ±20%, 15 VDCW. Added by REV A. Deleted by REV C.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 thru CR3	4037822P1	Silicon, 1000 mA, 400 PIV.
CR4 and CR5	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q2	19A116642P1	Thyristor, silicon controlled; sim to Type 2N5064.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1*	19A700113P47	Composition: 220 ohms ±5%, 1/2 w. Added by REV C.
	3R77P221J	Composition: 220 ohms ±5%, 1/2 w. Deleted by REV B.
R2 and R3	19A700113P87	Composition: 10K ohms ±5%, 1/2 w.
R4	5493035P27	Wirewound: 10 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
R5	19A700113P41	Composition: 120 ohms ±5%, 1/2 w.
R6	19C314256P27872	Metal film: 78.7K ohms ±1%, 1/4 w.
R7	19C314256P21243	Metal film: 124K ohms ±1%, 1/4 w.
R8	19A700113P91	Composition: 15K ohms ±5%, 1/2 w.
R9	19A700113P57	Composition: 560 ohms ±5%, 1/2 w.
R10*	19A700113P39	Composition: 100 ohms ±5%, 1/2 w.
		In REV B & earlier:
	3R77P301J	Composition: 300 ohms ±5%, 1/2 w.
		- - - - - - - - INTEGRATED CIRCUITS - - - - - - - -
U1	19D423164G1	Hybrid, temperature, cut off.
		- - - - - - - VOLTAGE REGULATORS - - - - - - - -
VR1*	4036887P12	Zener: 500 mW, 15 v. nominal. Added by REV C.
A802		HOUSING ASSEMBLY 19D423178G2
A1	19C321147G1	Sleeve Assembly. (See items 10-16).

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A134354P2	Diode, optoelectronic: yellow; sim to Hew. Packard 5082-4555.
CR2	19A134354P3	Diode, optoelectronic: green; sim to Hew. Packard 5082-4955.
		- - - - - - - - - THERMISTORS - - - - - - - - -
RT1	19C300048P6	Disc: 50K ohms ±10%; sim to NL Ind. 4D 103.
		- - - - - - - - - - CABLES - - - - - - - - - -
W2	19D423178G4	Cable Assembly. (Includes CR1 & CR2).
A803		HOUSING ASSEMBLY 19D423232G1
A1*	19C321147G4	Sleeve Assembly.
		Earlier than REV A:
	19C321147G3	Sleeve Assembly.
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1*	19A700221P44	Ceramic: 27 pf ±5%, 100 VDCW, temp coef -80 PPM PPM/°C. Added by REV B.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A134354P3	Diode, optoelectronic: green; sim to Hew. Packard 5082-4955.
CR2	19A134354P6	Diode, optoelectronic: red; sim to Hew. Packard 5082-4650.
CR3	19A134354P2	Diode, optoelectronic: yellow; sim to Hew. Packard 5082-4555.
CR4 and CR5	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1		(Part of W1).
J2	19B209201P1	Connector: 4 contacts; sim to Switchcraft 3C-1088.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1*	19A700113P87	Composition: 10K ohms ±5%, 1/2 w.
		In REV B & earlier:
	3R77P304J	Composition: 300K ohms ±5%, 1/2 w.
R2	19A700113P79	Composition: 4.7K ohms ±5%, 1/2 w.
R3	19A700113P59	Composition: 680 ohms ±5%, 1/2 w.
R4*	19A700113P63	Composition: 1K ohms ±5%, 1/2 w. Added by REV C.
		- - - - - - - - - THERMISTORS - - - - - - - - -
RT1	19C300048P6	Disc: 50K ohms ±10%; sim to NL IND. 4D103.
		- - - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1	7775500P3	Phen: 4 terminals.
TB2	7775500P11	Phen: 5 terminals.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1*	19A127521G8	RF Cable. Includes J1.
		Earlier than REV A:
	19A127521G5	RF Cable. Includes J1.
W2		HARNESS ASSEMBLY 19D423232G2 (Includes C1, CR1-CR5, R1-R3, TB1, TB2)
		- - - - - - - - - - FUSES - - - - - - - - - -
F801	7487942P1	Slow blowing: 1/4 amp at 250 v; sim to Bussmann MDL-1/4.
F802	7487942P10	Slow blowing: 1/8 amp at 250 v; sim to Bussmann MDL-1/8.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - PLUGS - - - - - - - - - -
P801		(Part of W801).
		- - - - - - - - - - TRANSFORMERS - - - - - - - - -
T801	19A134178P1	Power, step-down: Pri: 121 VRMS, 50/60 Hz, Output: 16.0 ±0.5 VDC at 0.4 amp.
T802	19A134178P2	Power, step-down: Pri: 220 VRMS, 50/60 Hz, Output: 16.0 ±0.5 VDC at 0.4 amp.
		- - - - - - - - - - CABLES - - - - - - - - - -
W801	19B232987G1	Power: approx 6 feet long. Includes P801.
W802	19B232987G2	Power cable.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XF801	7141008P1	Fuseholder: 5 amps at 125 v; sim to Littelfuse E-357001.
		MECHANICAL PARTS 19D423169G1 19D423169G2 (SEE RC2808)
1	19E500894P2	Housing.
2	N80P13005C6	Machine screw, Phillips: No. 6-32 x 5/16.
3	19A130551P1	Pad. (Not Used).
4	19D417639P1	Collar.
5	NP279908	Nameplate.
6	19A134521P4	Lens.
7	19C321499G1	Base assembly.
8	19A116773P106	Tap screw, Phillips POZIDRIV®: No. 7-19 x 3/8.
9	19C321147G1	Sleeve assembly. Includes items 10-16.
10	19B216965P1	Extractor.
11	19B219104P1	Block.
12	N136P505C6	Tap screw, phillips head: No. 2-32 x 5/16.
13	19B216963P4	Angle.
14	19C321020P2	Cover.
15	N136AP503C	Tap screw, phillips POZIDRIV: No. 2-32 x 3/16.
16	19C327044P1	Contact.
17	19A116773P108	Tap screw, Phillips POZIDRIV®: No. 7-19 x 1/2.
18	19C317175P2	Plug.
19	19A115185P4	Strap base.
20	19A115185P3	Strap.
21	19A130456G1	Fuse cover.
22	19A134521P2	Lens: green.
		MECHANICAL PARTS 19D423169G3 19D423169G4 (SEE RC2821)
1	19A142796P1	Pin. (Quantity 2).
	N910P906C	Retainer ring. (Secures 19A142796P1 pin).
2	19D424593P2	Lever. (Lever is different on other side).
3	19B216965P1	Extractor.
4	N136P505C6	Tap screw, phillips head: No. 2-32 x 5/16.
5	N136AP503C	Tap screw, phillips POZIDRIV®: No. 2-32 x 3/16.
6	19B227847P1	Spring. (Quantity 6).
7	19C321147G4	Sleeve assembly. (Includes items 1-6, 8-13).

SYMBOL	GE PART NO.	DESCRIPTION
8	19A142590G1	Contact. (Quantity 5).
9	19D424593P1	Lever. (Lever is different on other side).
10	19C327044P1	Contact.
11	19C321020P2	Cover.
12	19B216963P4	Angle.
13	19B219104P1	Block.
14	19D417639P1	Collar.
15	19A134521P2	Lens: green.
16	NP279909	Nameplate.
17	19A116773P108	Tap screw, Phillips POZIDRIV®: No. 7-19 x 1/2.
18	4033714P20	Terminal, solderless: sim to Zierick 379.
19	19C321543G1	Housing.
20	19A134521P1	Lens: red.
21	19A134521P4	Lens: yellow.





*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

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 - Base Station Housing 19D423232G1
To incorporate new accessory interface contacts. Changed A1 and W1.

REV. A - Desk Charger 19D423169G1-G4
To incorporate changes to meet CSA standards.
Changed power cord ground wire termination.
Added 35 pound pull spec. on power cord strain relief.
Added internal label for fuse rating.

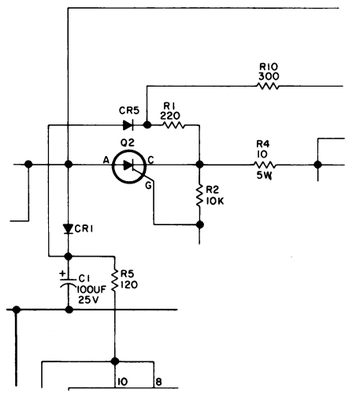
REV. B - Desk Charger 19D423169G3 & G4
To improve performance in UHF fields.
Added C1.

REV. A - Component Board 19C321384G1
To improve fast to trickle charge switching.
Added C5.

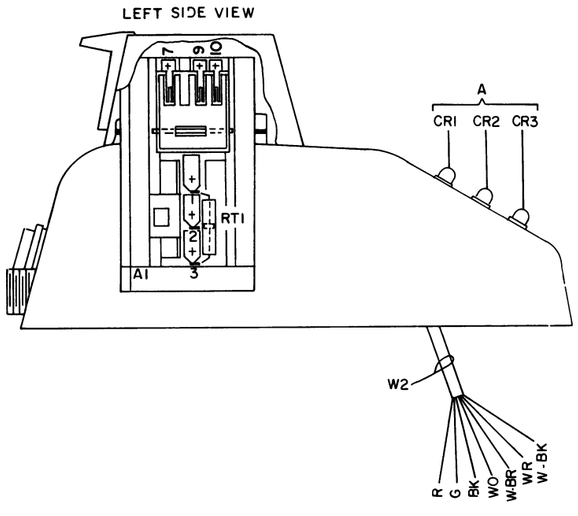
REV. B - To reduce the trickle Charge rate and lower the teperature inside of the Charger.
Deleted R1.

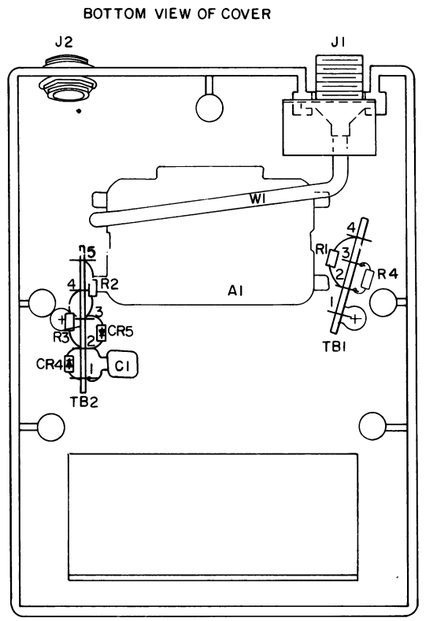
REV. C - To improve battery life.
Changed C1. Added VR1.

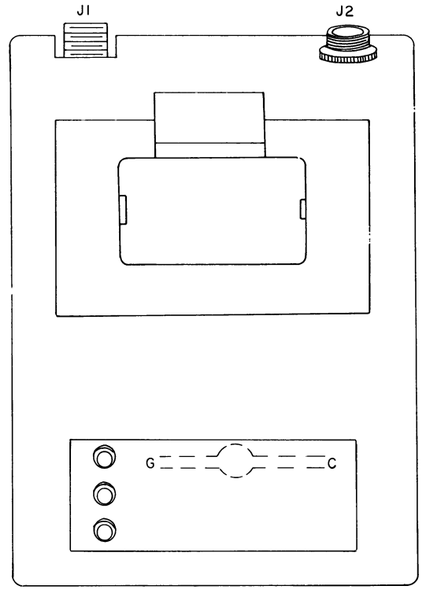
Schematic Diagram was:

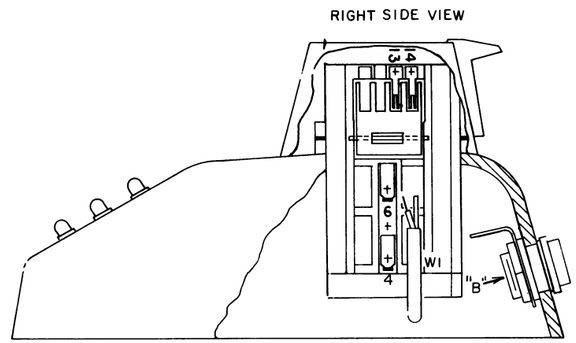


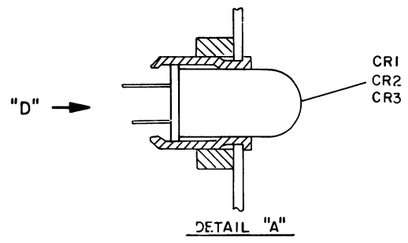
REV. C - Desk Charger 19D423169G3 & G4
To reduce transmitted AC hum.
Changed R1. Added R4.

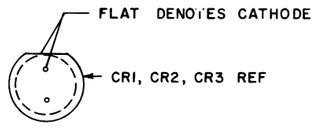




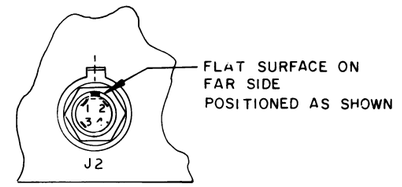








LEAD IDENTIFICATION FOR CR1-CR3
VIEW "D" (PARTIAL)



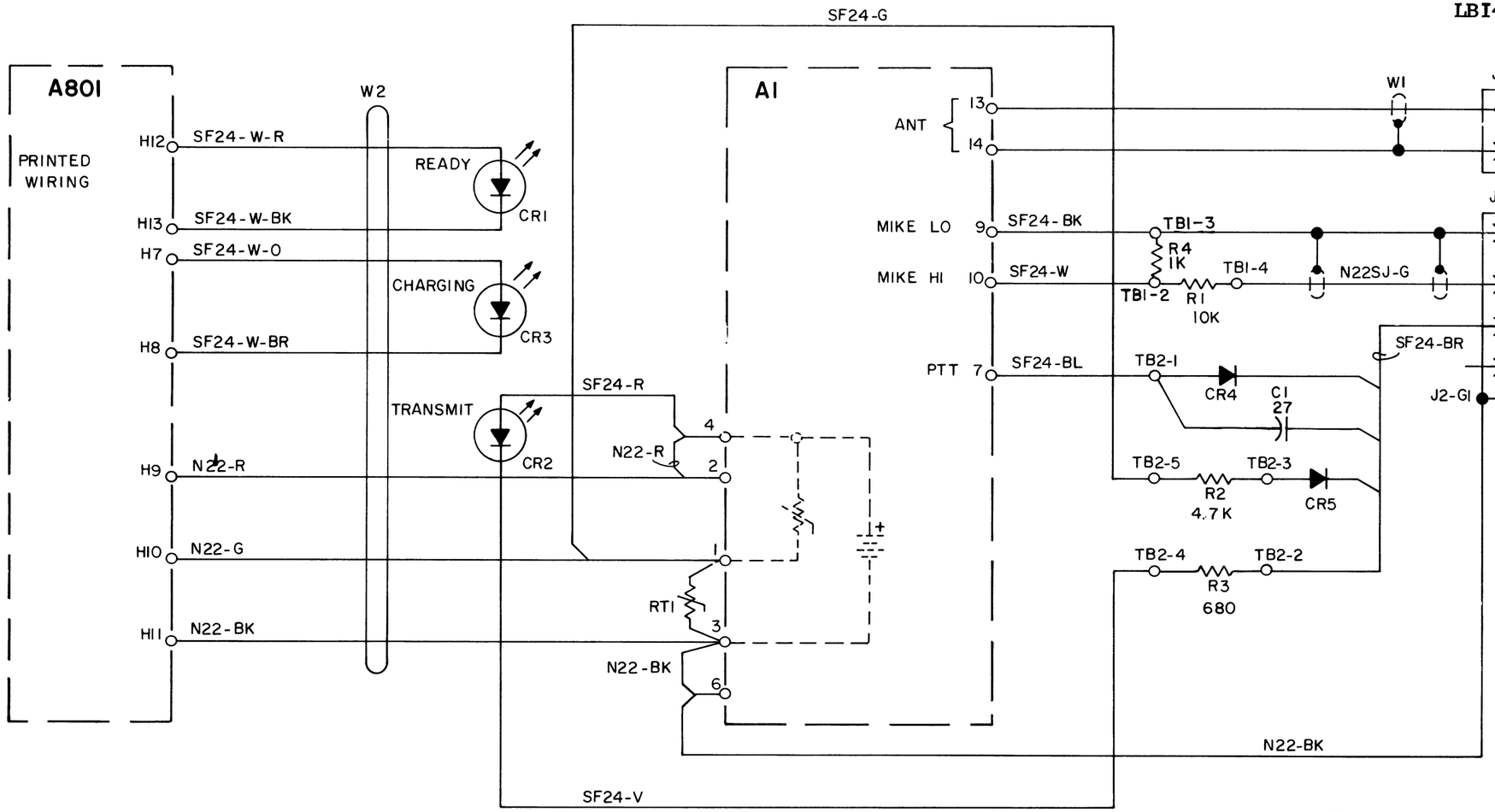
VIEW "B"

(19D423564, Rev. 6)

OUTLINE DIAGRAM

DESK CHARGER BASE STATION

8 Issue 4



SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.	
THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PLI9D423232G1	A
PLI9D423169G3	C
PLI9D423169G4	C

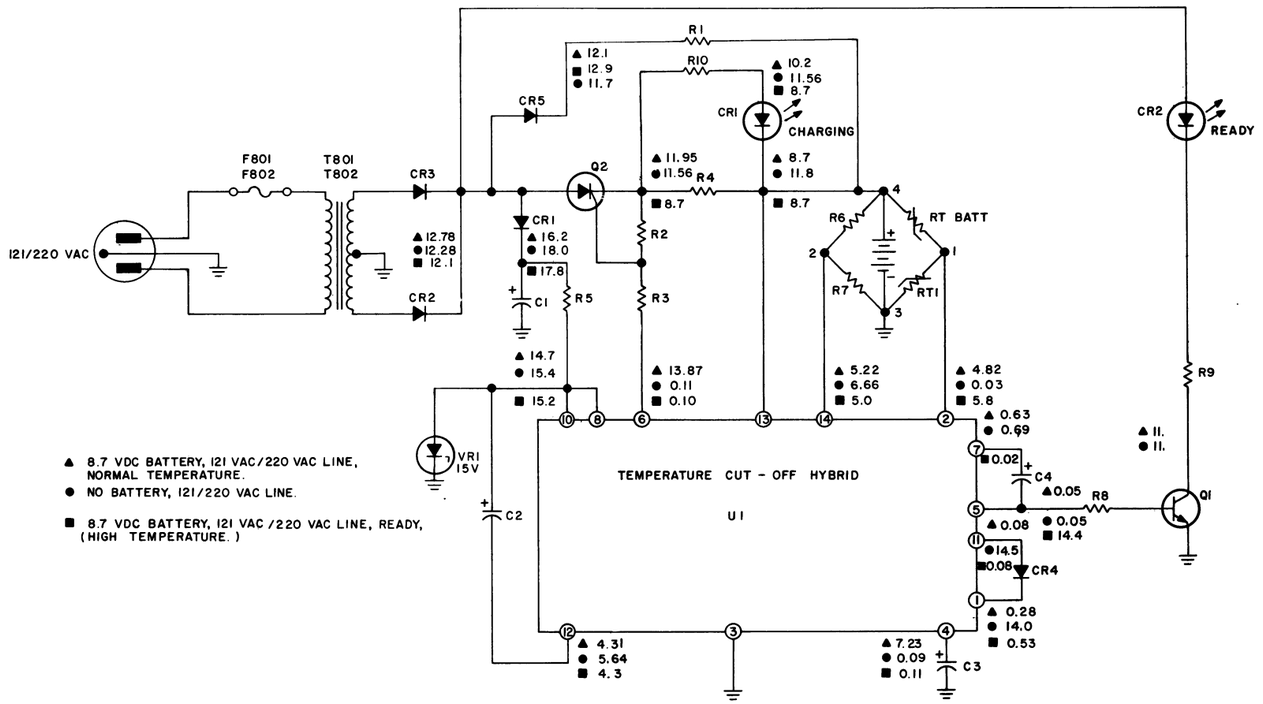
IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG = 1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

(19C321556, Rev. 4)

SCHEMATIC DIAGRAM

DESK CHARGER BASE STATION



RC - 2850C

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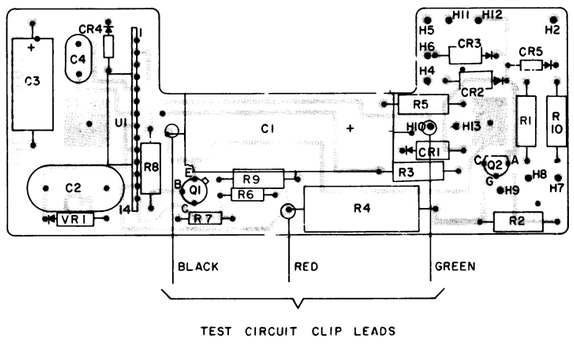

TEST CIRCUIT CLIP LEADS

(RC-2852)
(19D423560, Rev. 5)
(19B226663, Sh. 2, Rev. 3)

TROUBLESHOOTING PROCEDURE

3-HOUR DESK CHARGER

TROUBLESHOOTING PROCEDURES

The test circuit shown can be used to simulate battery pack conditions and determine if the charger is working properly. Switch S1 simulates battery pack temperature (open-room temperature, closed-hot battery pack). Switch S2 resets charger logic, the same as removing the battery pack from the charging insert.

Connect the test circuit as shown on the diagram. Insert a battery pack into the charging insert. Use the logic chart and voltage readings on the diagram to determine the working condition of the charger.

If the charger works properly with the test circuit, but not with the battery pack, check thermistors RT1 and RT Battery. Each should measure approximately 50 K ohms at room temperature (25°C).

Other Checks:

1. If a known good battery pack has been charging and the charger fails to shut-off (READY light does not come on) at the end of the charge time, check Q1 and Q2.
2. U1-11 always high, logic will not reset, check C2.
3. U1-6 always low, no high rate of charge, check C3.
4. U1-5 always low, logic will not reset, check C4.
5. No high rate of charge, check for open CR4.

Test Battery Condition	UI Pin				Test CKT Switch Position	
	11	4	6	5	S1	S2
No Battery	High	Low	Low	Low	Norm	Closed
Cold Battery	High	Low	Low	Low	Norm	Closed
Normal Battery Charging	Low	High	High	Low	Norm	Open
Charged Battery	Low	Low	Low	High	Hot	Open
Hot Battery Just Inserted	Low	Low	Low	Low	Hot	Open

Low = Pin Voltage ≦ 1.0 Volts

High = Pin Voltage ≧ 3.0 Volts