

# SECTION V PARTS LIST

## GENERAL

**This section contains a list of replaceable electronic parts and assemblies in the equipment; structural items and hardware such as screws and nuts are not included.**

## PARTS LIST ARRANGEMENT

**The parts list starts with the Chassis Assembly, followed by a list of components found on the chassis as well as the major modular components.**

## LIST OF MANUFACTURERS

**The MANUFACTURER (MFR) column of the parts list uses brief descriptions; the names are given in full below.**

<b>A. H. H.</b>	<b>Arrow, Hart and Hegeman, Hartford, Connecticut</b>
<b>Allen Bradley</b>	<b>Allen Bradley, Milwaukee, Wisconsin</b>
<b>Amphenol</b>	<b>Amphenol Corporation, Chicago, Illinois</b>
<b>Arco</b>	<b>Arco Electronics, Great Neck, L.I., New York</b>
<b>CDE</b>	<b>Cornell Dubilier , Division of Federal Pacific Electric Company, Newark, New Jersey</b>
<b>Continental</b>	<b>Continental-Wirt Electronics Corporation, Philadelphia, Pennsylvania</b>
<b>Corning</b>	<b>Corning Glass Works, Bradford, Pennsylvania</b>
<b>CRL</b>	<b>Centralab, Division of Globe-Union, Milwaukee, Wisconsin</b>
<b>CTS</b>	<b>Chicago Telephone Systems, Los Angeles, California</b>
<b>Elpac</b>	<b>Elpac Incorporated, Fullerton, California</b>
<b>Erie</b>	<b>Erie Technological Products Incorporated, Erie, Pennsylvania</b>
<b>Eveready</b>	<b>Eveready Batteries, Union Carbide Corporation, Los Angeles, California</b>

<b>Fairchild</b>	<b>Fairchild Semiconductor Corporation, Palo Alto, California</b>
<b>G. E.</b>	<b>General Electric Company, Semiconductor Products Division, Buffalo, New York</b>
<b>Grayhill</b>	<b>Grayhill Incorporated, La Grange, Illinois</b>
<b>IRC</b>	<b>International Resistance Company, Philadelphia, Pennsylvania</b>
<b>Johnson</b>	<b>E. F. Johnson Company, Waseca, Minnesota</b>
<b>Kings</b>	<b>Kings Electronics Company Incorporated, Tuckahoe, New York</b>
<b>Littelfuse</b>	<b>Littelfuse Incorporated, Des Plaines, Illinois</b>
<b>Motorola</b>	<b>Motorola Semiconductor Products, Phoenix, Arizona</b>
<b>RCA</b>	<b>RCA Semiconductor Division, Somerville, New Jersey</b>
<b>Richey</b>	<b>Richey Electronics, Nashville, Tennessee</b>
<b>Semtech</b>	<b>Semtech Corporation, Newbury Park, California</b>
<b>Smith</b>	<b>H. H. Smith Incorporated, Brooklyn, New York</b>
<b>SEC</b>	<b>Southern Electronics Corporation, Burbank, California</b>
<b>Sprague</b>	<b>Sprague Electric Company, North Adams, Massachusetts</b>
<b>Stackpole</b>	<b>Stackpole Carbon Company, St. Mary's, Pennsylvania</b>
<b>Wakefield</b>	<b>Wakefield Engineering Incorporated, Wakefield, Massachusetts</b>

#### **MATCHED OR PAIRED PARTS**

**Prior to ordering or replacing electronic components in the equipment, refer to the notes regarding matched or paired parts on the schematic diagrams in Section VI.**

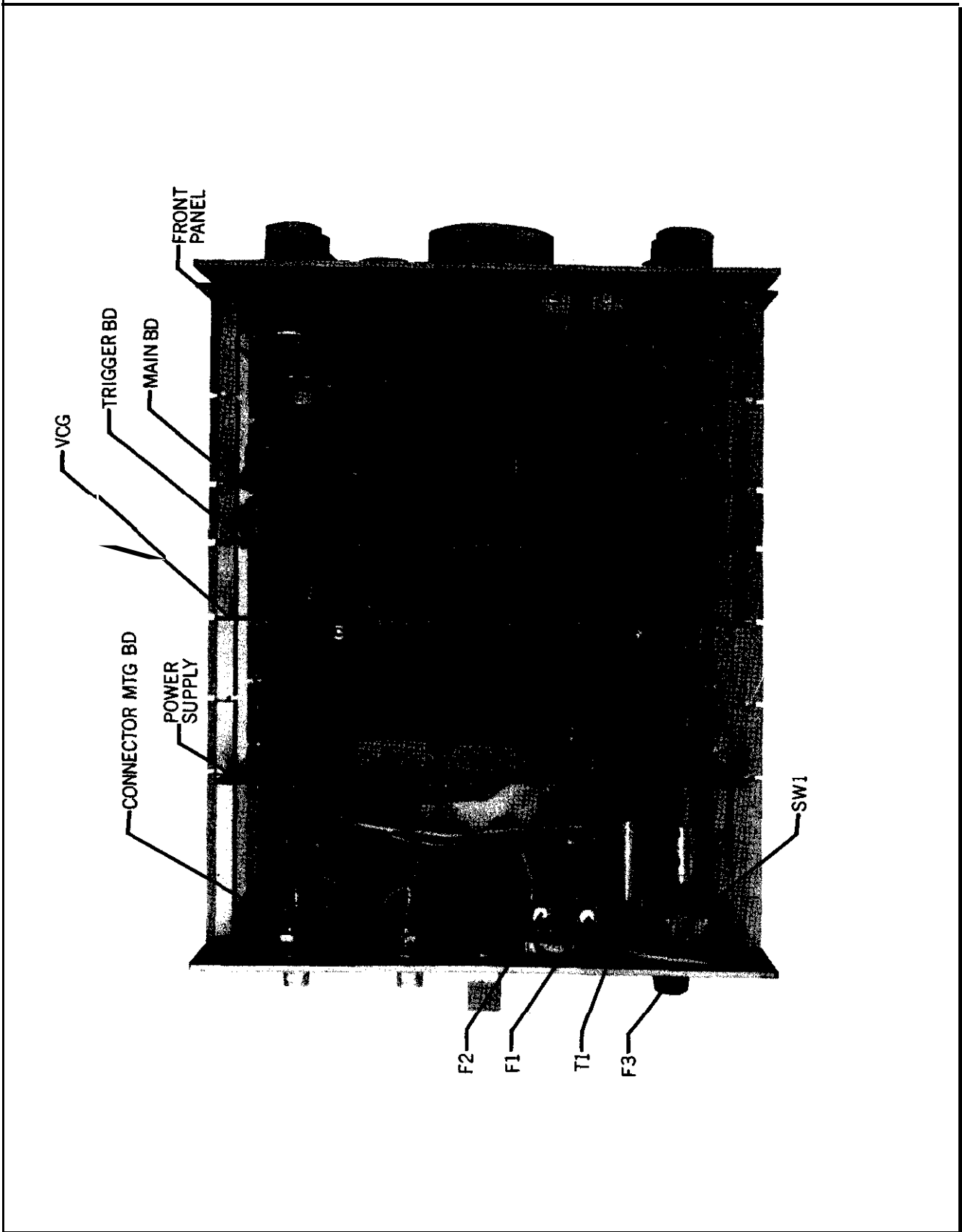


Figure 5 - 1. Model 112 Chassis Assembly

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
T1***	100-500	TRANSFORMER	1	Wavetek
F1*, F1*,	313.250	FUSE, 1/4amp, Slo-Blo	2	Littelfuse
F3	312.750	FUSE, 3/4amp	1	Littelfuse
SW1	110-SW2	SWITCH	1	Wavetek
	112-032	MOTHER BOARD	1	Wavetek
	112-020	FRONT PANEL ASSY.	1	Wavetek
	110-012	MAIN BOARD ASSY.	1	Wavetek
	112-021	TRIGGER BOARD ASSY.	1	Wavetek
	111-018	VCG BOARD ASSY	1	Wavetek
	110-013	POWER SUPPLY and OUTPUT AMPLIFIER ASSY.	1	Wavetek
	**112-022	REGULATOR BOARD ASSY.	1	Wavetek
	**112-023	BATTERY BOARD ASSY.	1	Wavetek
	112-025	CONNECTOR BOARD ASSY.	1	Wavetek
<p>*F1 &amp; F2 are 1 amp in "B" models.  **Not included in the illustration.  ***Use 112-500 in "B" models.</p>				

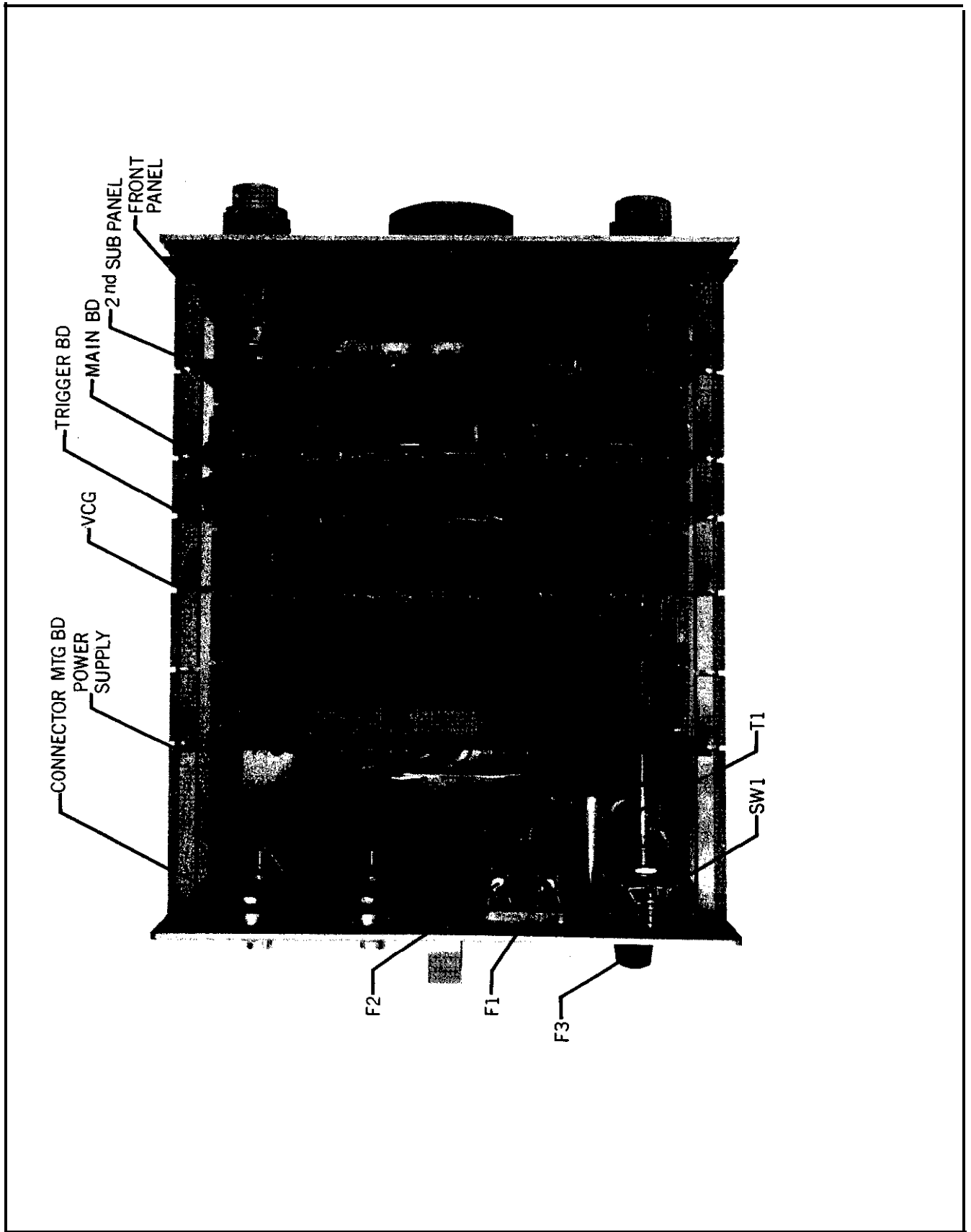


Figure 5-2. Model 115 Chassis Assembly

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
T1***	110-500	TRANSFORMER	1	Wavetek
F1*, F2*,	313.250	FUSE, 1/4amp, Slo-Bl	2	Littelfuse
'3	312.750	FUSE, 3/4amp	1	Littelfuse
SW1	110-SW2	SWITCH	1	Wavetek
	115-029	MOTHER BOARD	1	Wavetek
	115-030	FRONT PANEL ASSY.	1	Wavetek
	115-031	SECOND SUBPANEL ASSY.	1	Wavetek
	110-012	MAIN BOARD ASSY.	1	Wavetek
	112-021	TRIGGER BOARD ASSY.	1	Wavetek
	111-018	VCG BOARD ASSY.	1	Wavetek
	110-013	POWER SUPPLY and OUTPUT AMPLIFIER ASSY.	1	Wavetek
	**112-022	REGULATOR BOARD ASSY.	1	Wavetek
	**112-023	BATTERY BOARD ASSY.	1	Wavetek
	112-025	CONNECTOR BOARD ASSY.	1	Wavetek
<p>*F1 &amp; F2 are 1 amp in "B" models.  **Not included in the illustration.  ***Use 112-500 in "B" models.</p>				

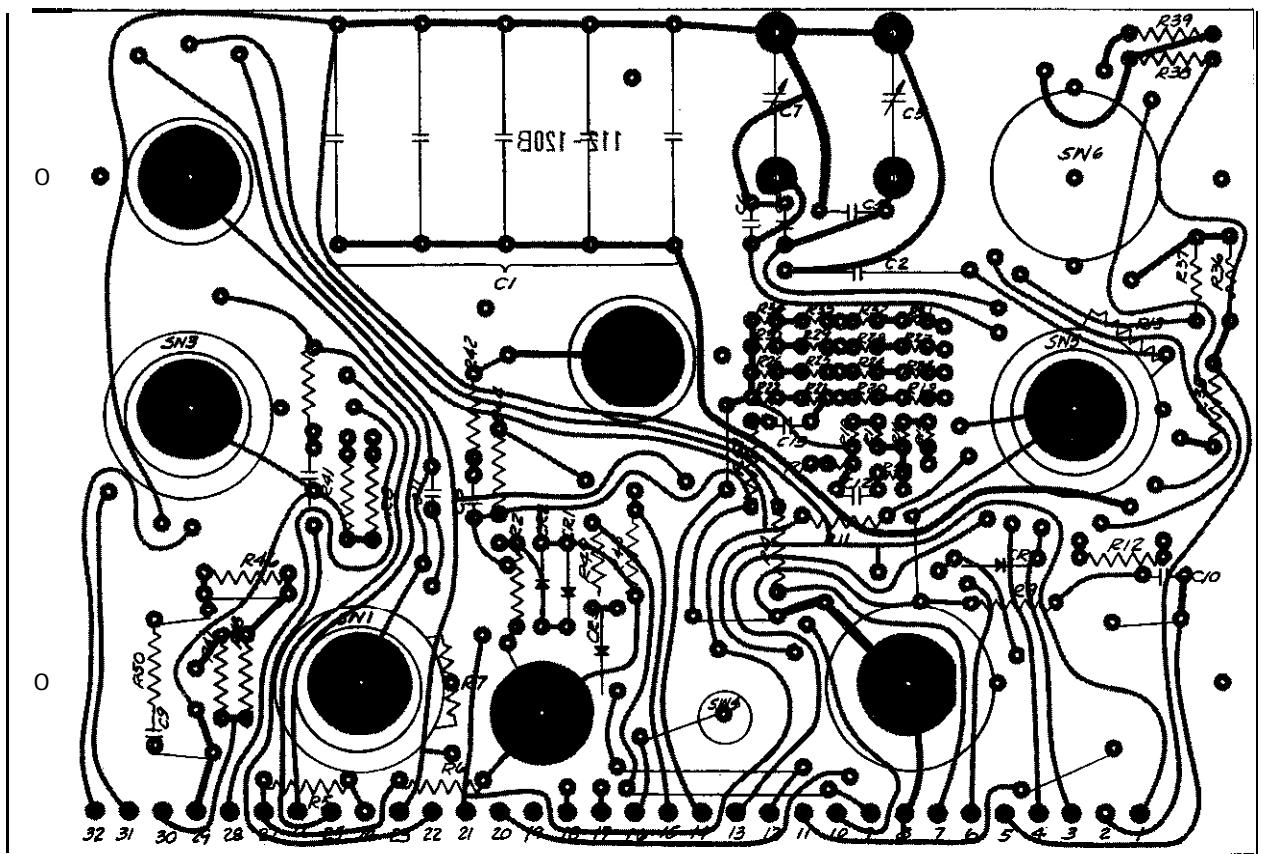


Figure 5-3. Front Panel Assembly (112-020)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION	QTY	MFR
R41	RC20GF4R7J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 4.7 $\Omega$	1	Stackpole
R50	RC20GF100J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 10 $\Omega$	1	Stackpole
R42	RC20GF270K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 27 $\Omega$	1	Stackpole
R4, R49	RC20GF101K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 100 $\Omega$	2	Stackpole
R51	RC20GF201J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 200 $\Omega$	1	Stackpole
R12	RC20GF221K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 220n	1	Stackpole
R9	RC20GF471K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 470 $\Omega$	1	Stackpole
R6	RC20GF511J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 510 $\Omega$	1	Stackpole
R46	RC20GF561K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 560 $\Omega$	1	Stackpole
R5, R8	RC20GF102K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 1,000 $\Omega$	2	Stackpole
R35	RC20GF302J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 3,000n	1	Stackpole
R7	RC20GF822K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 8,200 $\Omega$	1	Stackpole
R2	RC20GF103K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 10,000 $\Omega$	1	Stackpole
R44	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 21.5 $\Omega$	1	Corning



<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>R47, R48</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 49.9 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R18, R26</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 3,010 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R14</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 4,320 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R16, R24</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 6,980 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R43</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 8,250 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R22, R30, R36</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 30,100 $\Omega$	<b>3</b>	<b>Corning</b>
<b>R20, R28, R37</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 69,800 $\Omega$	<b>3</b>	<b>Corning</b>
<b>R34, R38</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 301,000 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R32, R39</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 698,000 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R45</b>	<b>JAIN104P102UA</b>	<b>POTENTIOMETER</b> Single Turn, 1,000 $\Omega$	<b>1</b>	<b>Allen Bradley</b>
<b>R3</b>	<b>Series 45NS</b>	<b>POTENTIOMETER</b> Single Turn, 10,000 $\Omega$	<b>1</b>	<b>CTS</b>
<b>C13</b>	<b>DD220</b>	<b>CAPACITOR, Ceramic</b> 1000v, 22pf	<b>1</b>	<b>CRL</b>
<b>c4</b>	<b>DM15-680J</b>	<b>CAPACITOR, Silver Mica</b> , 500v, 5%, 68pf	<b>1</b>	<b>Arco</b>
<b>C6</b>	<b>DM15-820J</b>	<b>CAPACITOR, Silver Mica</b> , 500v, 5%, 82pf	<b>1</b>	<b>Arco</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
C9	DD22 1	CAPACITOR, Ceramic 1000v, 220pf	1	CRL
C8	DD33 1	CAPACITOR, Ceramic 1000v, 330pf	1	CRL
C10	DD47 1	CAPACITOR, Ceramic 1000v, 470pf	1	CRL
C5	DM15-911F	CAPACITOR, Silver Mica, 500v, 1%. 910pf	1	Arco
C11	CK103	CAPACITOR, Ceramic 50v 1%, . 01μf	1	CRL
C2	PO104G1	CAPACITOR, Polysty rene, 100v, 1%, . 1μf	1	SEC
C1	ZX3022	CAPACITOR, Matched to 1%, 5 x 2μf	1	Elpac
c3, C7	503-001-37A	CAPACITOR, Variable 4.5 - 25pf	2	Erie
CR1, CR2, CR3, CR4	FD6666	DIODE	4	Fairchild
SW3, R40	112-SW4	SWITCH, Function 2 pole, 8 position, 1000Ω pot	1	Wavetek
SW1, R1	112-SW5	SWITCH, Trig/Slope 6 pole, 2 position, 10,000Ω pot	1	Wavetek
SW5, R10	112-SW1	SWITCH, Frequency 5 pole, 8 position, 10,000Ω pot	1	Wavetek
SW2	112-SW2	SWITCH, Mode 8 pole, 4 position	1	Wavetek

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
SW6	110-SW1-2	SWITCH, X. 3-X1 Wafer	2	Wavetek
SW4	30-17B	SWITCH, Man. Trig. Push Button	1	Graybill
	112-120	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

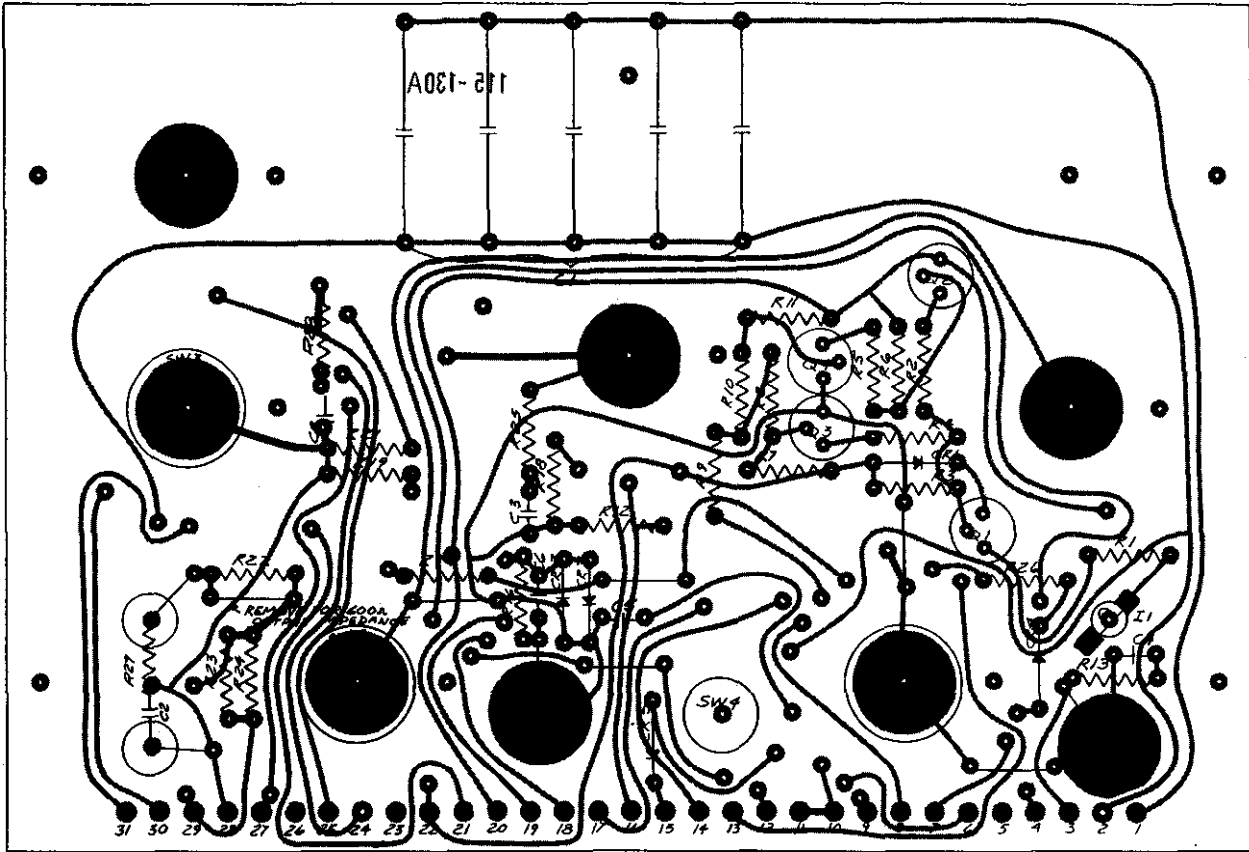


Figure 5-4. Front Panel Assembly (115-030)

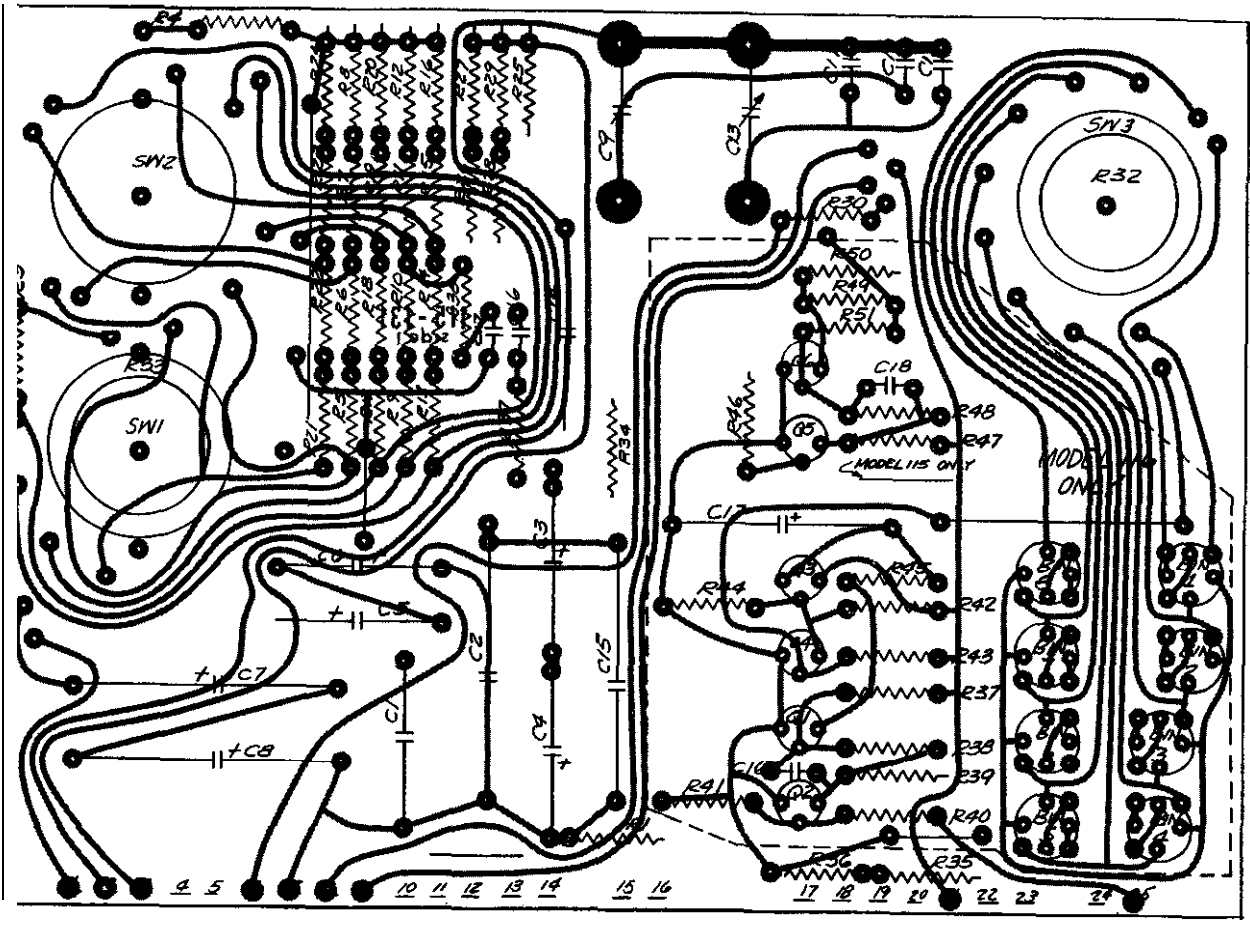
<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>MFR.</b>
<b>R21</b>	RC20GF4R7J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 4.7 $\Omega$	1	Stackpole
R27	RC20GF100J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 10 $\Omega$	1	Stackpole
R125	RC20GF270K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 27 $\Omega$	1	Stackpole
R1, R26	RC20GF101K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 100 $\Omega$	2	Stackpole
R28	RC20GF201J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 200 $\Omega$	1	Stackpole
R13	RC20GF471K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 470 n	1	Stackpole
R8, R10	RC20GF511K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 510 $\Omega$	2	Stackpole
R22	RC20GF561K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 560 n	1	Stackpole
R6	RC20GF821K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 820 $\Omega$	1	Stackpole
R9, R19	RC20GF102K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,000 $\Omega$	2	Stackpole
R3	RC20GF392K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 3,900 $\Omega$	1	Stackpole
R2, R4, R5	RC20GF562K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 5,600 $\Omega$	3	Stackpole
R14	RC20GF822K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 8,200 $\Omega$	1	Stackpole
R16	RC20GF103K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10,000 $\Omega$	1	Stackpole

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>R18</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}w$ , 1%, 21.5 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R23, R24</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}w$ , 1% . 49.9 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R7, R11, R12</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}w$ , 1%, 8,250 $\Omega$	<b>3</b>	<b>Corning</b>
<b>R17</b>	<b>JAIN104P102UA</b>	<b>POTENTIOMETER</b> Dial, 1000 $\Omega$	<b>1</b>	<b>Allen Bradley</b>
<b>C8</b>	<b>DD220</b>	<b>CAPACITOR, Ceramic</b> 1000v, 22pf	<b>1</b>	<b>CRL</b>
<b>C6</b>	<b>DD300</b>	<b>CAPACITOR, Ceramic</b> 1000v, 30pf	<b>1</b>	<b>CRL</b>
<b>c2</b>	<b>DD22 I</b>	<b>CAPACITOR, Ceramic</b> 1000v, 220pf	<b>1</b>	<b>CRL</b>
<b>c3</b>	<b>DD33 1</b>	<b>CAPACITOR, Ceramic</b> 1000v, 330pf	<b>1</b>	<b>CRL</b>
<b>c4</b>	<b>DD471</b>	<b>CAPACITOR, Ceramic</b> 1000v, 470pf	<b>1</b>	<b>CRL</b>
<b>c5</b>	<b>UK10-104</b>	<b>CAPACITOR, Ceramic</b> 10v, . 1 $\mu$ f	<b>1</b>	<b>CRL</b>
<b>C1</b>	<b>ZX3022</b>	<b>CAPACITOR, Matched</b> to 1%, 5 x 2 $\mu$ f	<b>1</b>	<b>Elpac</b>
<b>CR1 thru CR5</b>	<b>FD6666</b>	<b>DIODE</b>	<b>5</b>	<b>Fairchil</b>
<b>Q2, Q3</b>	<b>2N3642</b>	<b>TRANSISTOR</b>	<b>2</b>	<b>Fair chil</b>
<b>Q1, Q4</b>	<b>2N3638</b>	<b>TRANSISTOR</b>	<b>2</b>	<b>Fairchil</b>
<b>SW3, R20</b>	<b>112-SW4</b>	<b>SWITCH, Output Selector</b> 1000 $\Omega$ pot	<b>1</b>	<b>Wavetek</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
SW2, R15	112-SW5	SWITCH, Trigger Polarity, 10, 000 $\Omega$ pot	1	Wavetek
SW1	112-SW2	SWITCH, Mode	1	Wavetek
SW4	30-17B	SWITCH, Man. Trig. Push Button	1	Grayhill
11	GE334	INDICATOR, Lamp 10v, 15ma	1	G. E.
	115-130	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
SW2, R15	112-SW5	SWITCH, Trigger Polarity, 10, 000 $\Omega$ pot	1	Wavetek
SW1	112-SW2	SWITCH, Mode	1	Wavetek
SW4	30-17B	SWITCH, Man. Trig. Push Button	1	Grayhill
I1	GE334	INDICATOR, Lamp 10v, 15ma	1	G. E.
	115-130	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek





Rev. 1-68 Figure 5-5. Second Subpanel Assembly (115-031/116-031)  
5-16

CIRCUIT REFERENCE	PART NO.	DESCRIPTION	QTY	MFR
R30	RC20GF101K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 100 $\Omega$	1	Stackpole
R2	RC20GF221K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 220 $\Omega$	1	Stackpole
R36	RC20GF511J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 510 $\Omega$	1	Stackpole
R35	RC20GF102K	RESISTOR; Carbon $\frac{1}{2}$ w, 10%, 1,000 $\Omega$	1	Stackpole
R25	RC20GF302K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 3,000 $\Omega$	1	Stackpole
R1	RC20GF224K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 220,000 $\Omega$	1	Stackpole
R8, R16	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 3,010 $\Omega$	2	Corning
R4	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 4,320 $\Omega$	1	Corning
Rb, R14	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 6,980 $\Omega$	2	Corning
R12, R20, R27	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 30,100 $\Omega$	3	Corning
R10, R18, R26	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 69,800 $\Omega$	3	Corning
R24, R29	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 301,000 $\Omega$	2	Corning
R22, R28	RNbOD	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 698,000 $\Omega$	2	Corning
C12	DM15-680J	CAPACITOR, Silver Mica, 500v, 5%, 68pf	1	Arco

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>C10</b>	<b>DM15-820J</b>	<b>CAPACITOR, Silver Mica, 500v, 5%, 82pf</b>	<b>1</b>	<b>Arco</b>
<b>C11</b>	<b>DM15-911F</b>	<b>CAPACITOR, Silver Mica, 500v, 1%, 910pf</b>	<b>1</b>	<b>Arco</b>
<b>C1</b>	<b>WMF1S33</b>	<b>CAPACITOR, Mylar 100v, 10%, .033μf</b>	<b>1</b>	<b>CDE</b>
<b>C14</b>	<b>PO104G1</b>	<b>CAPACITOR, Polysty- rene, 100v, 1%, .1μf</b>	<b>1</b>	<b>SEC</b>
<b>cz, C15</b>	<b>WMF1P33</b>	<b>CAPACITOR, Mylar 100v, 10%, .33μf</b>	<b>2</b>	<b>CDE</b>
<b>c3, c4</b>	<b>11-215-5-15T</b>	<b>CAPACITOR, Electro- lytic, 15v, 5μf</b>	<b>2</b>	<b>Richey</b>
<b>C5, C6</b>	<b>12-250-25-6T</b>	<b>CAPACITOR, Electro- lytic, 6v, 25μf</b>	<b>2</b>	<b>Richey</b>
<b>C7, C8</b>	<b>18-375-250-6T</b>	<b>CAPACITOR, Electro- lytic, 6v, 250μf</b>	<b>2</b>	<b>Richey</b>
<b>C9, C13</b>	<b>503-001-37A</b>	<b>CAPACITOR, Variable 4.5 - 25pf</b>	<b>2</b>	<b>Erie</b>
<b>SW1, R33</b>	<b>112-SW1</b>	<b>SWITCH, Frequency Selector, 10,000Ω pot</b>	<b>1</b>	<b>Wavetek</b>
<b>sw2, SW4</b>	<b>110-SW1-2</b>	<b>SWITCH, X. 3, X1</b>	<b>2</b>	<b>Wavetek</b>
	<b>115-131</b>	<b>CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper</b>	<b>1</b>	<b>Wavetek</b>
<b><u>Model 115 Only</u></b>				
<b>SW3, R30</b>	<b>112-SW6</b>	<b>SWITCH, Start-Stop Point, 10,000Ω pot</b>	<b>1</b>	<b>Wavetek</b>

CIRCUIT REFERENCE	PART NO.	DESCRIPTION	QTY	MFR
<u>NOTE</u>				
The following parts are applicable to the Model 116 <u>only</u> .				
R42, R45, R46, R50, R35	RC20GF102K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 1,000 $\Omega$	5	Stackpole
R49	RC20GF152K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 1,500 $\Omega$	1	Stackpole
R41	RC20GF242J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 2,400 $\Omega$	1	Stackpole
R38, R39, R47, R48	RC20GF302J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 3,000 $\Omega$	4	Stackpole
R40, R44	RC20GF472K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 4,700 $\Omega$	2	Stackpole
R37, R51	RC20GF622K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 6,200 $\Omega$	2	Stackpole
R43	RC20GF123K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 12,000 $\Omega$	1	Stackpole
C16, C18	CK103	CAPACITOR, Ceramic 50v, .01 $\mu$ f	1	Sprague
C17	16-375-100-15T	CAPACITOR, Electro- lytic, 15v, 100 $\mu$ f	1	Richey
Bin 1 thru 8	SL3667	BINARY ELEMENTS J-K Flip-Flops	8	Fairchild
Q2, Q6	2N5141	TRANSISTOR	2	Fairchild
Q1, Q5	2N5134	TRANSISTOR	2	Fairchild
Q3, Q4	2N3642	TRANSISTOR	2	Fairchild
SW4	112-SW3A	SWITCH, Triggered Cycles, 10,000 $\Omega$ pot	1	Wavetek

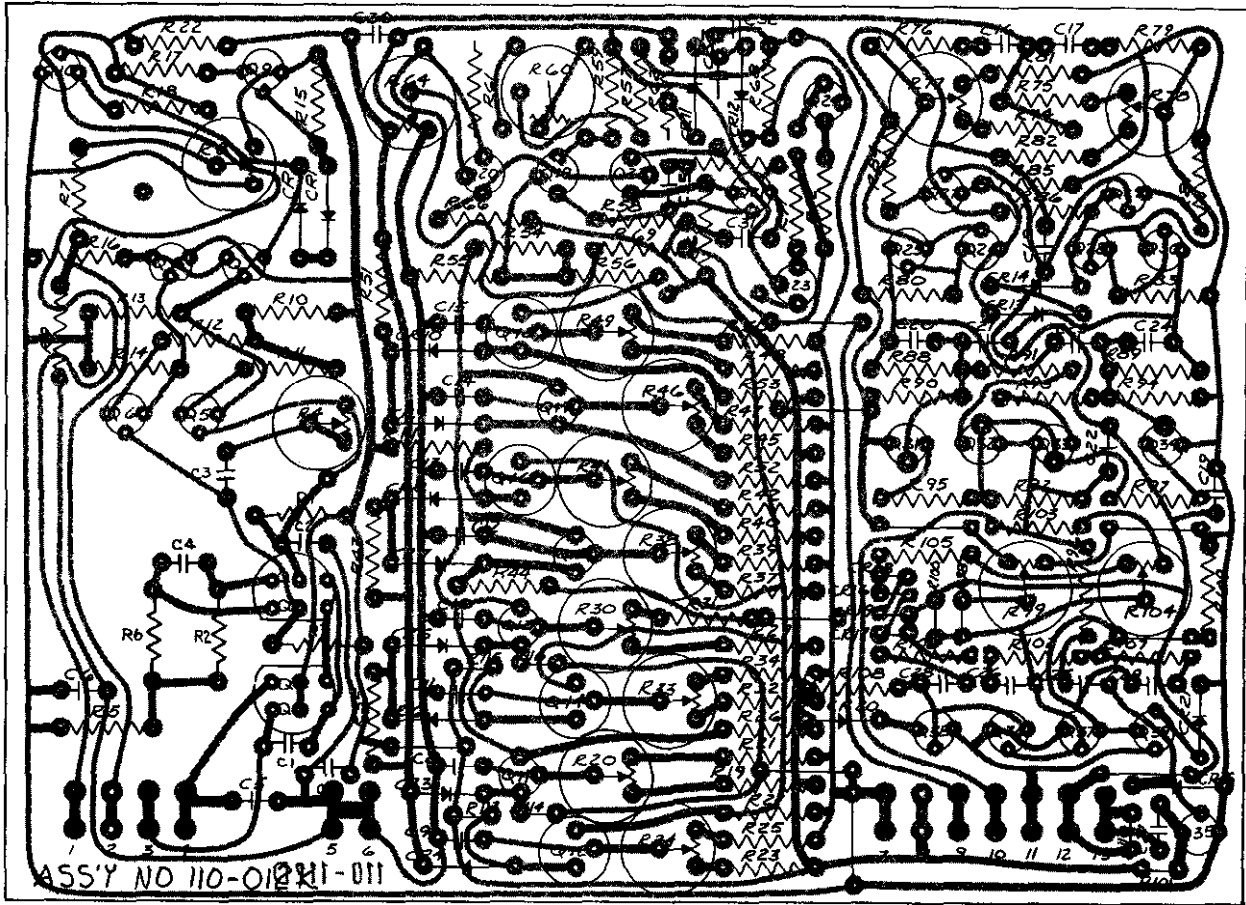


Figure 5-6. Main Board Assembly (110-012)

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>R17, R18, R71, R72</b>	<b>RC20GF4R7J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 4.7 $\Omega$	<b>4</b>	<b>Stackpole</b>
<b>R119</b>	<b>RC20GF300J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 30 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R70, R73, R91, R93</b>	<b>RC20GF470K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 47 $\Omega$	<b>4</b>	<b>Stackpole</b>
<b>R92</b>	<b>RC20GF620.J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 62 n	<b>1</b>	<b>Stackpole</b>
<b>R102, R106, R107</b>	<b>RC20GF101K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 100 $\Omega$	<b>3</b>	<b>Stackpole</b>
<b>R16</b>	<b>RC20GF131J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 130 n	<b>1</b>	<b>Stackpole</b>
<b>R55, R67</b>	<b>RC20GF151J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 150 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R112</b>	<b>RC20GF271K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 270 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R84, R87</b>	<b>RC20GF471K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 470 n	<b>2</b>	<b>Stackpole</b>
<b>R90, R94</b>	<b>RC20GF561K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 560 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R68, R88, R89, R101</b>	<b>RC20GF102K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,000 $\Omega$	<b>4</b>	<b>Stackpole</b>
<b>R108, R109</b>	<b>RC20GF122K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,200 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R96</b>	<b>RC20GF222K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 2,200 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R85, R86</b>	<b>RC20GF472K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 4,700 $\Omega$	<b>2</b>	<b>Stackpole</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>M F R</b>
R110	RC20GF103K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10,000 $\Omega$	1	Stackpole
R11, R12	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 100 $\Omega$	2	Corning
R103	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 316 $\Omega$	1	Corning
R26, R27, R105	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 511 $\Omega$	3	Corning
R35, R59, R61, R74, R75	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 825 $\Omega$	5	Corning
R2, R6, R15, R22, R54, R56	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1% . 1,000 $\Omega$	6	Corning
R113, R114	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 1,620 $\Omega$	2	Corning
R81, R82, R100	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,000 $\Omega$	3	Corning
R51	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,370 $\Omega$	1	Corning
R43	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,490 $\Omega$	1	Corning
R19, R25	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,870 $\Omega$	2	Corning
R9, R80, R83	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 3,010 $\Omega$	3	Corning
R29, R34	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 3,160 $\Omega$	2	Corning
R13, R14, R37, R42	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 3,830 $\Omega$	4	Corning

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>R21, R23, R31, R32, R45, R47, R48, R50, R52, R53</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 4,640 $\Omega$	<b>10</b>	<b>Corning</b>
<b>R39, R40</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 4,750 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R57, R69, R115, R116</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 6,980 $\Omega$	<b>4</b>	<b>Corning</b>
<b>R44, R58, R66, R111</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1% . 10,000 $\Omega$	<b>4</b>	<b>Corning</b>
<b>R98</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 21,500 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R5</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 46,400 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R1, R3, R7</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1% . 110,000 $\Omega$	<b>3</b>	<b>Corning</b>
<b>R20, R24, R30 R33, R38, R41, R46, R49, R60, R77, R78, R104</b>	<b>FR251M</b>	<b>POTENTIOMETER</b> Single Turn, 250n	<b>12</b>	<b>Allen Bradley</b>
<b>R4</b>	<b>FR501M</b>	<b>POTENTIOMETER</b> Single Turn, 500n	<b>1</b>	<b>Allen Bradley</b>
<b>R8, R64, R99</b>	<b>FR103M</b>	<b>POTENTIOMETER</b> Single Turn, 10,000 $\Omega$	<b>3</b>	<b>Allen Bradley</b>
<b>C26</b>	<b>DD050</b>	<b>CAPACITOR, Ceramic</b> 1000v, 5pf	<b>1</b>	<b>CRL</b>
<b>c22</b>	<b>DD100</b>	<b>CAPACITOR, Ceramic</b> 1000v, 10pf	<b>1</b>	<b>CRL</b>
<b>C20, C24, C25</b>	<b>DD220</b>	<b>CAPACITOR, Ceramic</b> 1000v, 22pf	<b>3</b>	<b>CRL</b>



<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
C30	DD330	CAPACITOR, Ceramic 1000v, 33pf	1	CRL
C21, c23, c35	DD470	CAPACITOR, Ceramic 1000v, 47pf	3	CRL
C1, C2, C16, C17	DD101	CAPACITOR, Ceramic 1000v, 100pf	4	CRL
c33	DD151	CAPACITOR, Ceramic 1000v, 150pf	1	CRL
c3	DD391	CAPACITOR, Ceramic 1000v, 390pf	1	CRL
C 2 7, C28, C29	DD471	CAPACITOR, Ceramic 1000v, 470pf	3	CRL
C 4 , C5, C8, C9, C10, C11, c 1 2 , C13, C14, C15	DD102	CAPACITOR, Ceramic 1000v, . 001μf	10	CRL
C6, C7, C18, C19, C31, C 3 2	UK10-104	CAPACITOR, Ceramic 10v, . 1μf	6	CRL
CR1 thru CR21	FD6666	DIODE	21	Fairchild
Q1, Q2, Q 3 , Q 4	TD101	TRANSISTOR, Dual	2	Sprague
Q12, Q14, Q 1 6 , Q18	2N3638	TRANSISTOR	4	Fairchild
Q11, Q13, Q15, Q17, Q19, Q20	2N3642	TRANSISTOR	6	Fairchild
Q 7 , Q8, Q 9 , Q23, 2N5134 Q26, Q27, Q 3 0 , Q32, Q34, 435, Q36, Q39		TRANSISTOR	12	Fairchild

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
Q5, Q6, Q10, Q21, Q22, Q24, Q25, Q28, Q29, Q31, Q33, Q37, Q38	2N5141	TRANSISTOR	13	Fairchild
	110-112	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

The following transistors are matched pairs:

Q5 & Q6, Q7 & Q8, Q19 & Q20,  
Q21 & Q22.

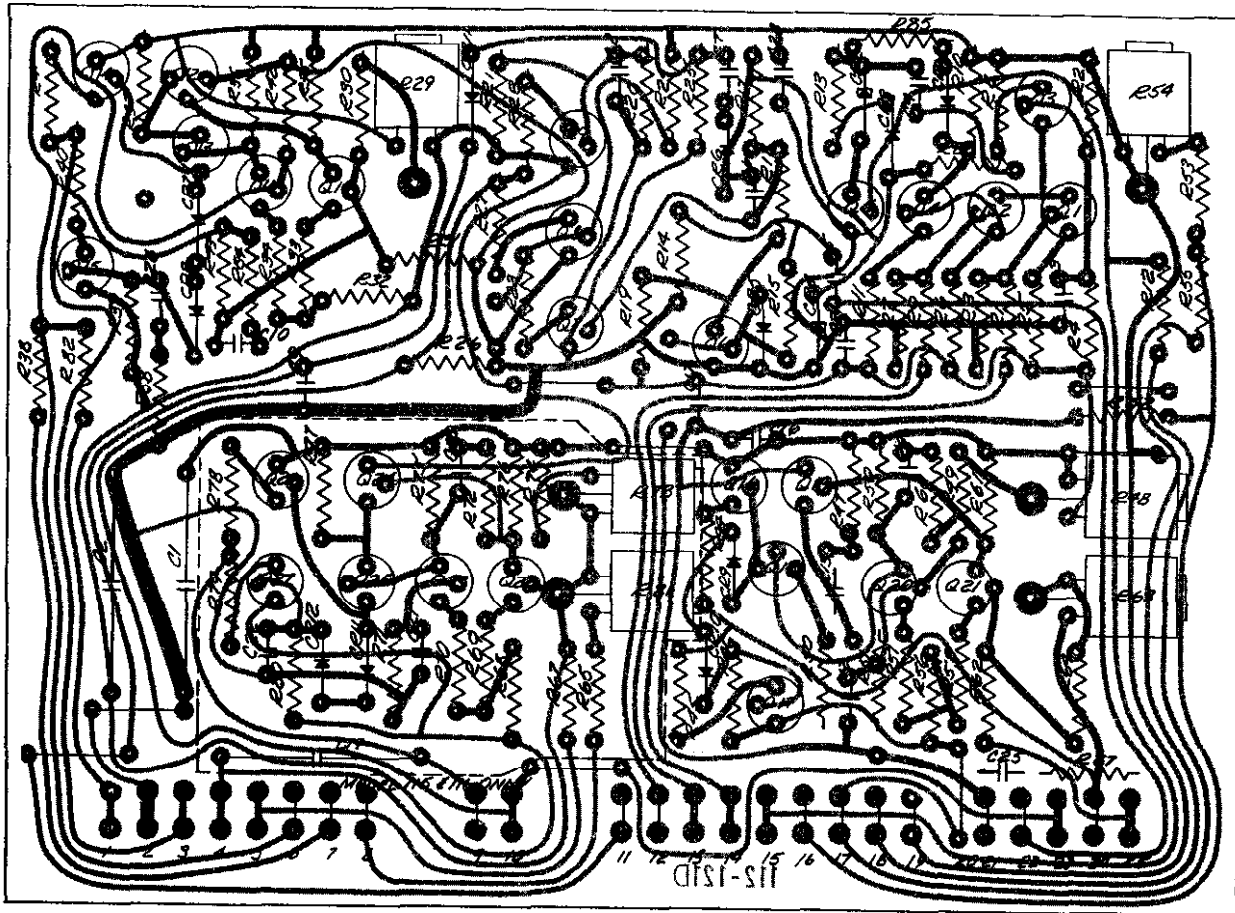


Figure 5-7. Trigger Board Assembly (112-021)

<b>CIRCUIT, REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>M F R</b>
<b>R1, R9, R15</b>	<b>RC20GF100K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10 $\Omega$	<b>3</b>	<b>Stackpole</b>
<b>R40, R41, R44, R45</b>	<b>RC20GF 150K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 15 $\Omega$	<b>4</b>	<b>Stackpole</b>
<b>R27, R28</b>	<b>RC20GF470K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 47 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R89, R90</b>	<b>RC20GF510J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 51 n	<b>2</b>	<b>Stackpole</b>
<b>R47, R84</b>	<b>RC20GF750K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 75 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R22, R85</b>	<b>RC20GF820K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 82 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R37</b>	<b>RC20GF221K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 220 n	<b>1</b>	<b>Stackpole</b>
<b>R38</b>	<b>RC20GF391K</b>	<b>RESIS TOR, Carbon</b> $\frac{1}{2}$ w, 10%, 390 n	<b>1</b>	<b>Stackpole</b>
<b>R11, R42</b>	<b>RC20GF471K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 470 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R21</b>	<b>RC20GF561K</b>	<b>RESISTOR , Carbon</b> $\frac{1}{2}$ w, 10%, 560 n	<b>1</b>	<b>Stackpole</b>
<b>R82</b>	<b>RC20GF621J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 620 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R88</b>	<b>RC20GF681K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 680 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R3, R7</b>	<b>RC20GF102K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,000 n	<b>2</b>	<b>Stackpole</b>
<b>R39, R46</b>	<b>RC20GF122K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,200 $\Omega$	<b>2</b>	<b>Stackpole</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>M F R</b>
R20	RC20GF152K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,500 $\Omega$	1	<b>Stackpole</b>
R13	RC20GF222K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 2,200 $\Omega$	1	<b>Stackpole</b>
R23	RC20GF472K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 4,700 $\Omega$	1	<b>Stackpole</b>
R12, R26	RC20GF622K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 6,200 $\Omega$	2	<b>Stackpole</b>
R14	RC20GF103K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10,000 $\Omega$	1	<b>Stackpole</b>
R30, R49	RC20GF153K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 15,000 $\Omega$	2	<b>Stackpole</b>
R10	RC20GF303K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 30,000 $\Omega$	1	<b>Stackpole</b>
R24	RC20GF154K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 150,000 $\Omega$	1	<b>Stackpole</b>
R25	RC20GF106K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10,000,000 $\Omega$	1	<b>Stackpole</b>
R17	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 100 $\Omega$	1	<b>Corning</b>
R18	RN60D	<b>RESISTOR,, Metal Film</b> $\frac{1}{4}$ w, 1%, 316 $\Omega$	1	<b>Corning</b>
R8, R51, R57, R58	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 511 $\Omega$	4	<b>Corning</b>
R55, R64	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 909 $\Omega$	2	<b>Corning</b>
R33, R34, R62	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 1,000 $\Omega$	3	<b>Corning</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>MFR</b>
R19	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 1 , 100 $\Omega$	1	<b>Corning</b>
R43	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 1,210 $\Omega$	1	<b>Corning</b>
R52	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 1,500 $\Omega$	1	<b>Corning</b>
R53	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,000 $\Omega$	1	<b>Corning</b>
R 5, R6	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,370 $\Omega$	2	<b>Corning</b>
R2	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,870 $\Omega$	1	<b>Corning</b>
R31	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 3,010 $\Omega$	1	<b>Corning</b>
R32	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 4,990 $\Omega$	1	<b>Corning</b>
R56	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 7500 $\Omega$	1	<b>Corning</b>
R4, R59, R61	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 10,000 $\Omega$	3	<b>Corning</b>
R35, R36	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 23,700 $\Omega$	2	<b>Corning</b>
R54, R63	FR251M	<b>POTENTIOMETER</b> Single Turn, 250 $\Omega$	2	<b>Allen Bradley</b>
R29, R48	FR103M	<b>POTENTIOMETER</b> Single Turn, 10,000 $\Omega$	2	<b>Allen Bradley</b>
C10	DD050	<b>CAPACITOR, Ceramic</b> 1000v, 5pf	1	<b>CRL</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
C4, C5, C27*	DD220	CAPACITOR, Ceramic 1000v, 22pf	3	CRL
C6, C7, C8	DD470	CAPACITOR, Ceramic 1000v, 47pf	3	CRL
C26	DD22 1	CAPACITOR, Ceramic 1000v, 220pf	1	CRL
c9	DD102	CAPACITOR, Ceramic 1000v, .001μf	1	CRL
C12	CK103	CAPACITOR, Ceramic 50v, .01μf	1	CRL
C3, C16, C17, C23, C24	UK10-104	CAPACITOR, Ceramic 10v, .1μf	5	CRL
C1, c2	16-375-100-15T	CAPACITOR, Electro- lytic, 15v, 100μf	2	Richey
CR1, CR3, CR5, CR6, CR7, CR8, CR9, CR10, CR13	FD6666	DIODE	9	Fairchil
CR2, CR4	1N3716	DIODE, TD-3 Tunnel	2	G. E.
Q9, Q10, Q11, Q14, Q16, Q20, Q21	2N5134	TRANSISTOR	7	Fairchil
Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q12, Q13, Q15, Q17, Q18, Q19	2N5141	TRANSISTOR	13	Fairchil
	112-121	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

\*Model 116 only.

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b><u>PHASE LOCK AMPLIFIER</u></b>				
<b>NOTE: The following parts are applicable to the Model 115 only.</b>				
<b>R78, R79</b>	<b>RC20GF150K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 15 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R72, R77</b>	<b>RC20GF151K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 150n	<b>2</b>	<b>Stackpolt</b>
<b>R80</b>	<b>RC20GF122K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,200x-1	<b>1</b>	<b>Stackpolt</b>
<b>R71</b>	<b>RC20GF393K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 39,000 $\Omega$	<b>1</b>	<b>Stackpolc</b>
<b>R67</b>	<b>RC20GF563K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 56,000 $\Omega$	<b>1</b>	<b>Stackpolc</b>
<b>R69, R70</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 100 $\Omega$	<b>2</b>	<b>Corning</b>
<b>R68, R75, R76</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 10,000 $\Omega$	<b>3</b>	<b>Corning</b>
<b>R74</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 63,400 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R65</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 178,000 $\Omega$	<b>1</b>	<b>Corning</b>
<b>R73, R81</b>	<b>FR104M</b>	<b>POTENTIOMETER</b> Single Turn, 100,000 $\Omega$	<b>2</b>	<b>Allen Bradley</b>
<b>c21</b>	<b>CK103</b>	<b>CAPACITOR, Ceramic</b> 50v, .01 $\mu$ f	<b>1</b>	<b>CRL</b>
<b>C20, c22</b>	<b>UK10-104</b>	<b>CAPACITOR, Ceramic</b> 10v, .1 $\mu$ f	<b>2</b>	<b>CRL</b>
<b>C19</b>	<b>WMF1P1E</b>	<b>CAPACITOR, Mylar</b> 100v, .1 $\mu$ f	<b>1</b>	<b>CDE</b>



<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>CR11, CR12</b>	<b>FD6666</b>	<b>DIODE</b>	<b>2</b>	<b>Fairchild</b>
<b>Q22, Q23, Q26</b>	<b>2N5134</b>	<b>TRANSISTOR</b>	<b>3</b>	<b>Fairchild</b>
<b>Q24, Q25, Q27</b>	<b>2N5141</b>	<b>TRANSISTOR</b>	<b>3</b>	<b>Fairchild</b>

The following transistors are matched pairs;

Q1 & Q2, Q12 & Q13, Q18 & Q19,  
Q10 & Q11, Q20 & Q21, Q24 & Q25,  
Q22 & Q23.

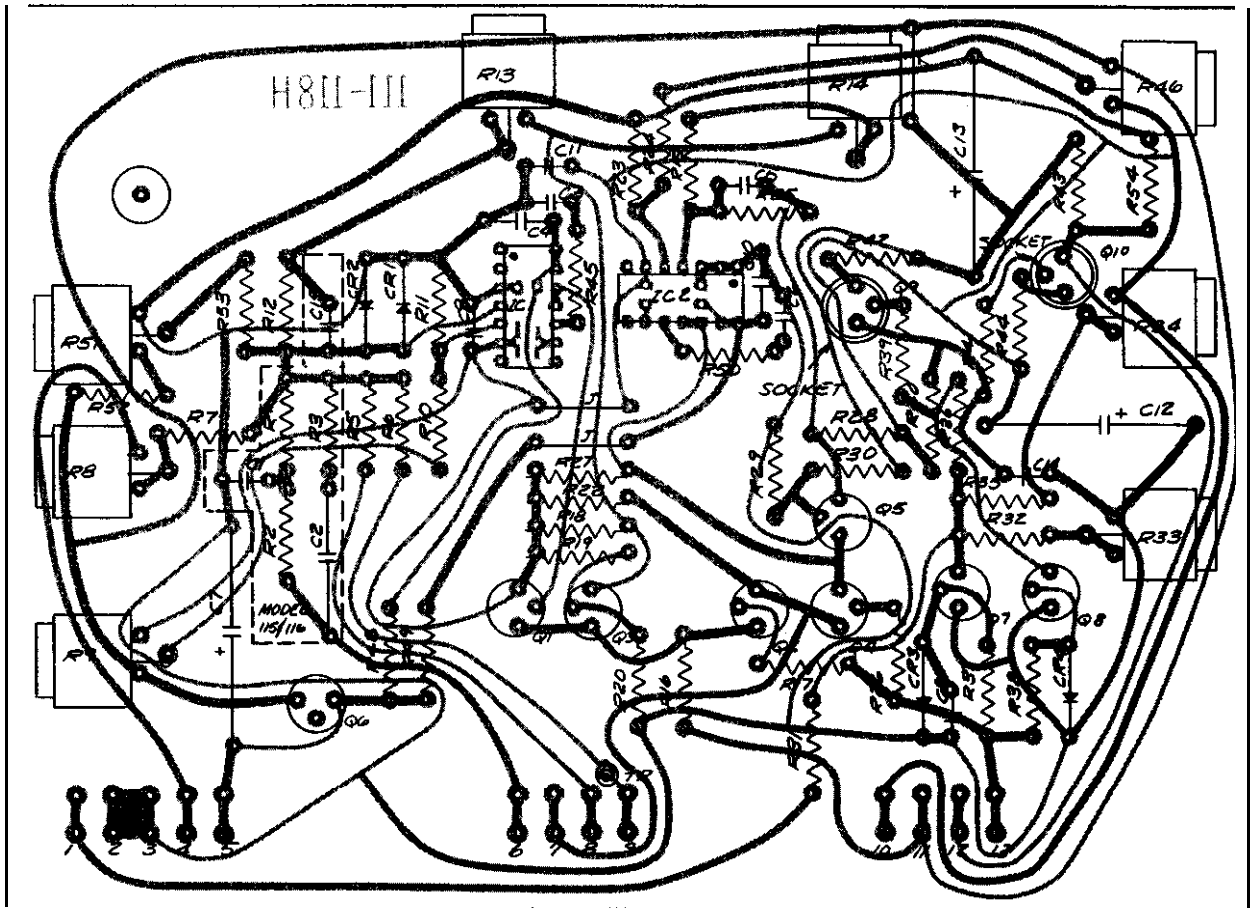


Figure 5- 8. VCG Board Assembly (111-018)

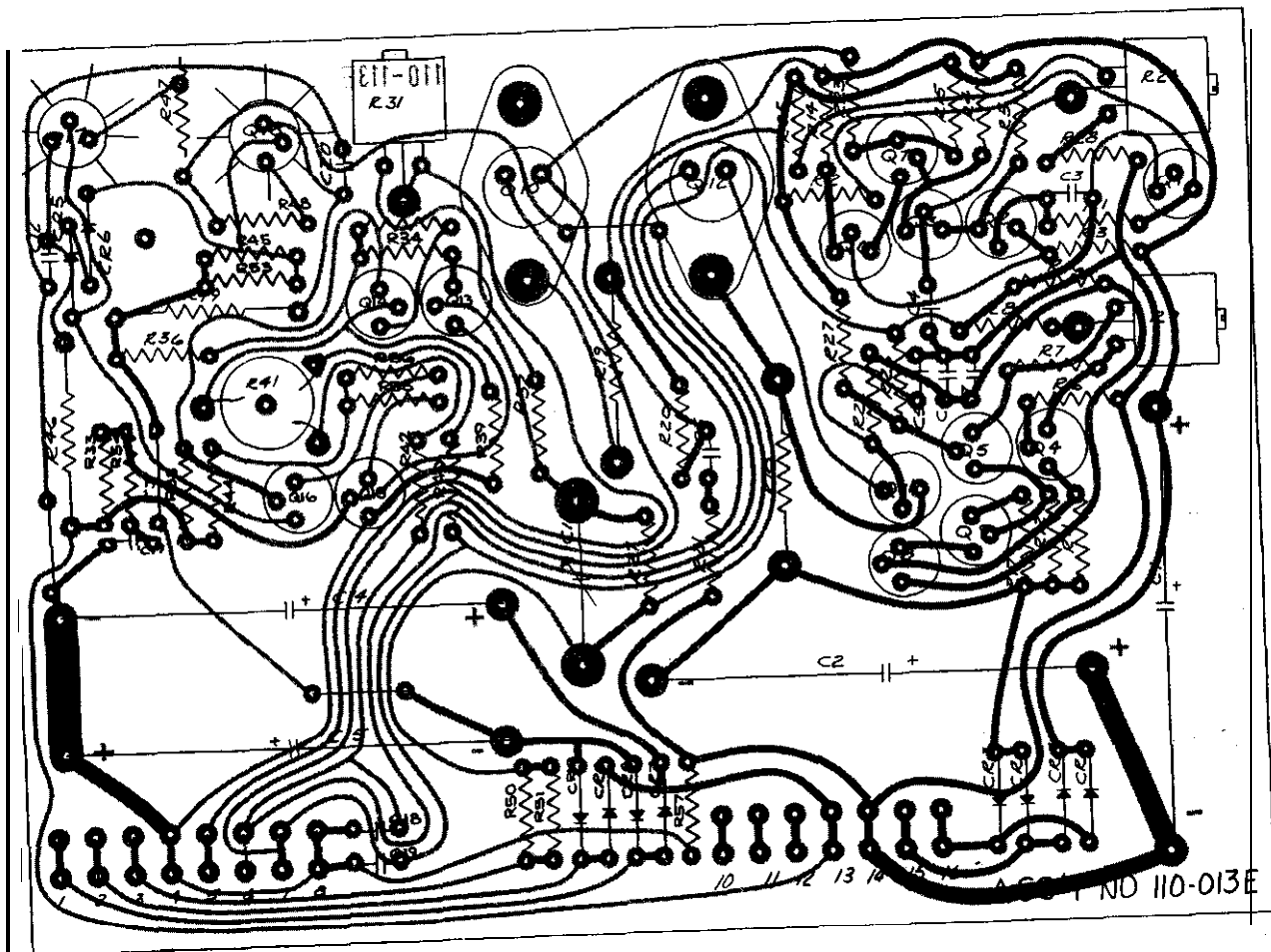
<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>M F R</b>
<b>R48, R49</b>	RC20GF100K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R42, R44</b>	RC20GF470K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 470 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R50</b>	RC20GF910J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 91 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R45</b>	RC20GF161J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 160 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R39, R41</b>	RC20GF101K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 100 $\Omega$	<b>2</b>	<b>Stackpole</b>
<b>R54</b>	RC20GF471K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 470 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R3*</b>	RC20GF561K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 560 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R40</b>	RC20GF681K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 680 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R43</b>	RC20GF102K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,000 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R16</b>	RC20GF122K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,200 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R36</b>	RC20GF182K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 1,800 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>R17, R26, R27</b>	RC20GF202J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 2,000 $\Omega$	<b>3</b>	<b>Stackpole</b>
<b>R1*, R2*, R19, R30, R37, R38</b>	RC20GF242J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 2,400 $\Omega$	<b>6</b>	<b>Stackpole</b>
<b>R20, R29</b>	RC20GF123K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 12,000 $\Omega$	<b>2</b>	<b>Stackpole</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
R18, R22, R28	RC20GF224K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 220,000 $\Omega$	3	Stackpole
R31	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 909 $\Omega$	1	Corning
R24	RN60D	RESISTOR, Metal Film $\frac{1}{2}$ w, 1%, 1,500 $\Omega$	1	Corning
R32	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%. 1,780 $\Omega$	1	Corning
R35	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 2,370 $\Omega$	1	Corning
R15	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 2,870 $\Omega$	1	Corning
R25	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 3,010 $\Omega$	1	Corning
R11	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 3,830 $\Omega$	1	Corning
R12	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 6,190 $\Omega$	1	Corning
R7	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 10,000 $\Omega$	1	Corning
R 6	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 12,100 $\Omega$	1	Corning
R52	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 46,400 $\Omega$	1	Corning
R5	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 95,300 $\Omega$	1	Corning
R53	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 110,000 $\Omega$	1	Corning

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
R10, R23	RN60D	RESISTOR, Metal Film $\frac{1}{4}w$ , 1%, 464,000 $\Omega$	2	Corning
R13, R14, R33, R34	FR501M	POTENTIOMETER Single Turn, 500 $\Omega$	4	Allen Bradley
R8	FR102M	POTENTIOMETER Single Turn, 1,000 $\Omega$	1	Allen Bradley
R9, R46, R51	FR103M	POTENTIOMETER Single Turn, 10,000 $\Omega$	3	Allen Bradley
c5	DD050	CAPACITOR, Ceramic 1000v, 5pf	1	CRL
C8, C15	DD101	CAPACITOR, Ceramic 1000v, 100pf	2	CRL
C14	DD331	CAPACITOR, Ceramic 1000v, 330pf	1	CRL
C3, C6	DD102	CAPACITOR, Ceramic 1000v, .001 $\mu$ f	2	CRL
C1*	CK103	CAPACITOR, Ceramic 50v, .01 $\mu$ f	1	CRL
C2*	WMF1S33	CAPACITOR, Mylar 100v, .033 $\mu$ f	1	CDE
C9, C11,	UK10-104	CAPACITOR, Ceramic 10v, .1 $\mu$ f	2	CRL
c4, C10	UK20-104	CAPACITOR, Ceramic 20v, .1 $\mu$ f	2	CRL
c7, C12, C13	16-375-100-15T	CAPACITOR, Electro- lytic, 15v, 100 $\mu$ f	3	Richey
CR1 thru CR4	FD6666	DIODE	4	Fairchild
Q6	2N3638	TRANSISTOR	1	Fairchild

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>M F R</b>
Q4, Q5, Q9	2N5134	TRANSISTOR	3	Fairchild
Q1, Q2, Q3, Q7, Q8, Q10	2N5141	TRANSISTOR	6	Fairchild
IC1, IC2	$\mu$ A702C	INTEGRATED CIRCUIT	2	Fairchild
	111-118	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

\*Indicates parts included on the Models 115 and 116 only.



Rev 1-68 Figure 5.9. Power Supply and Output Amplifier Assembly (110-013)  
5-38

CIRCUIT REFERENCE	PART NO.	DESCRIPTION	QTY	MFR
R47, R48	RC20GF6R8K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 6.8 $\Omega$	2	Stackpole
R21, R54, R55, R56	RC20GF100J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 10 $\Omega$	4	Stackpole
R57	RC20GF220J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 22 $\Omega$	1	Stackpole
R7	RC20GF560K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 56 $\Omega$	1	Stackpole
R14, R17, R22, R23	RC20GF101K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 100 $\Omega$	4	Stackpole
R44	RC20GF221K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 220 $\Omega$	1	Stackpole
R5, R15, R16	RC20GF222K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 2,200 $\Omega$	3	Stackpole
R3, R8, R12	RC20GF272K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 2,700 $\Omega$	3	Stackpole
R45	RC20GF362J	RESISTOR, Carbon $\frac{1}{2}$ w, 5%, 3,600 $\Omega$	2	Stackpole
R4, R11	RC20GF392K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 3,900 $\Omega$	2	Stackpole
R20	RC20GF472K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 4,700 $\Omega$	1	Stackpole
R50, R51	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 49.9 $\Omega$	2	Corning
R1, R28, R34, R35	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 100 $\Omega$	4	Corning
R6	RN60D	RESISTOR, Metal Film $\frac{1}{4}$ w, 1%, 511 $\Omega$	1	Corning



<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>M F R</b>
R32	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 909 $\Omega$	1	<b>Corning</b>
<b>R25, R26, R27, R39</b>	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 1,000 $\Omega$	4	<b>Corning</b>
R2	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,870 $\Omega$	1	<b>Corning</b>
R33, R38	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1% . 3,830 $\Omega$	2	<b>Corning</b>
R37	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 6,980 $\Omega$	1	<b>Corning</b>
R40, R42	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 10,000 $\Omega$	2	<b>Corning</b>
R18, R19	PW-10	<b>RESISTOR, Wirewound</b> 5w, 10%, 10 $\Omega$	2	<b>IRC</b>
R9, R24, R31	FR25 1M	<b>POTENTIOMETER</b> Single Turn, 250 $\Omega$	3	<b>Allen Bradley</b>
R41	FR103M	<b>POTENTIOMETER</b> Single Turn, 10,000 $\Omega$	1	<b>Allen Bradley</b>
C17	DD470	<b>CAPACITOR, Ceramic</b> 1000v, 47pf	1	<b>CRL</b>
c 4	DD102	<b>CAPACITOR, Ceramic</b> 1000v, 1,000pf	1	<b>CRL</b>
C12, C18.	CK103	<b>CAPACITOR, Ceramic</b> 50v, .01 $\mu$ f	2	<b>CRL</b>
C3, C5, C6, C7, C8, C19, C20	UK10-104	<b>CAPACITOR, Ceramic</b> 10v, .1 $\mu$ f	7	<b>CRL</b>
c14, C15	34-750-1000-35T	<b>CAPACITOR, Electro- lytic, 35v, 1000<math>\mu</math>f</b>	2	<b>Richey</b>

**Power Supply and Output Amplifier Assembly Parts List (110-013)**

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>C1, c2</b>	<b>34-750-2000-15T</b>	<b>CAPACITOR, Electro- lytic, 15v, 2000μf</b>	<b>2</b>	<b>Richey</b>
<b>C11</b>	<b>503-001-17A</b>	<b>CAPACITOR, Variohm 3.0 to 12pf</b>	<b>1</b>	<b>Erie</b>
<b>CR5, CR6</b>	<b>FD6666</b>	<b>DIODE</b>	<b>2</b>	<b>Fairchil</b>
<b>CR1, CR2, CR3, CR4, CR7, CR8, CR9, CR10</b>	<b>SCE- 1</b>	<b>DIODE</b>	<b>8</b>	<b>Semtech</b>
<b>R17</b>	<b>2N3299</b>	<b>TRANSISTOR</b>	<b>1</b>	<b>Fairchil</b>
<b>Q15 &amp; Q16, Q18</b>	<b>2N3502</b>	<b>TRANSISTOR</b>	<b>3</b>	<b>Fairchil</b>
<b>Q4 &amp; Q5, Q1, Q7, Q9, Q11</b>	<b>2N3638</b>	<b>TRANSISTOR</b>	<b>6</b>	<b>Fairchil</b>
<b>Q13 &amp; Q14</b>	<b>2N3642</b>	<b>TRANSISTOR</b>	<b>2</b>	<b>F airchil</b>
<b>Q12</b>	<b>2N3740</b>	<b>TRANSISTOR</b>	<b>1</b>	<b>Motor ol:</b>
<b>Q2 &amp; Q3, Q6, Q8</b>	<b>2N5134</b>	<b>TRANSISTOR</b>	<b>4</b>	<b>Fairchil</b>
<b>Q10</b>	<b>40250</b>	<b>TRANSISTOR</b>	<b>1</b>	<b>RCA</b>
	<b>110-113</b>	<b>CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper</b>	<b>1</b>	<b>Wavetek</b>

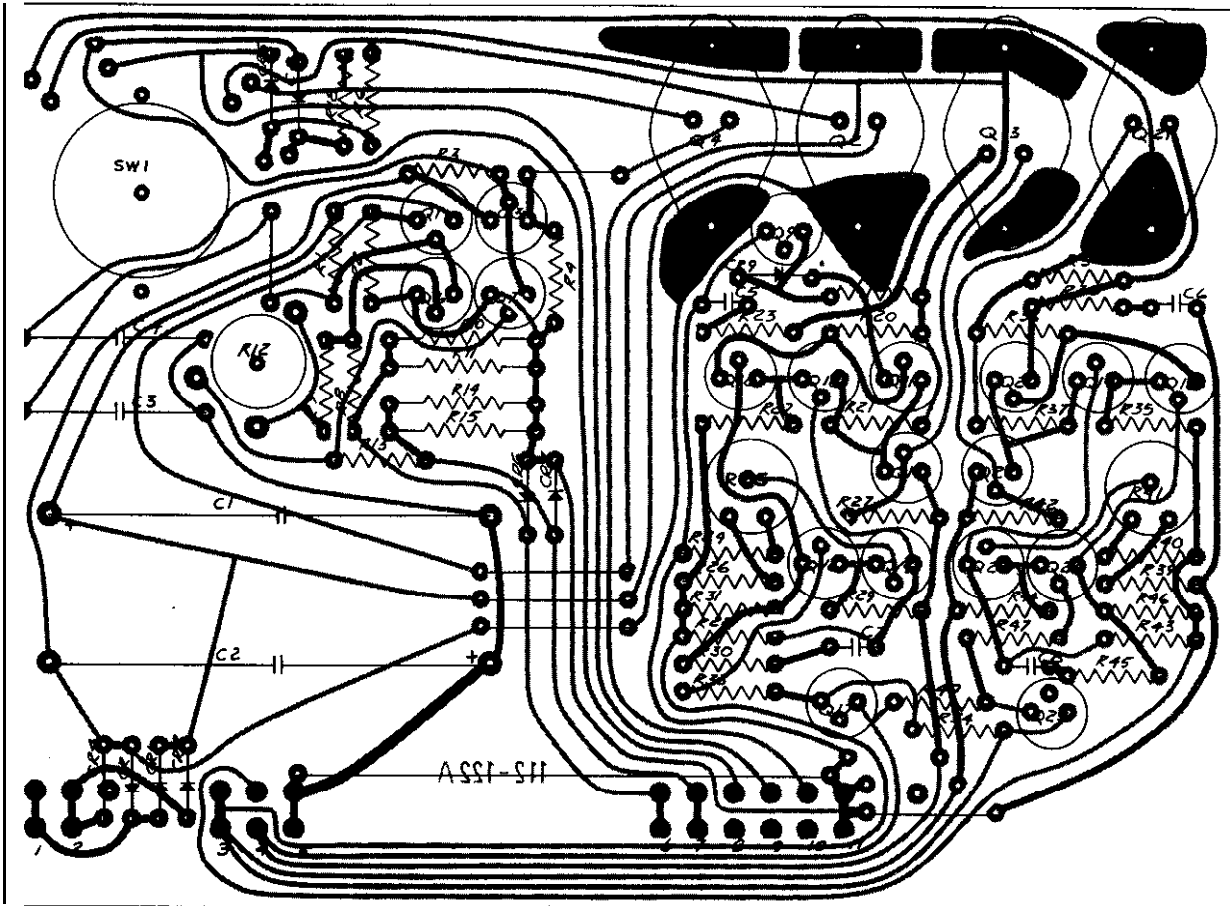


Figure 5- 10. Battery Regulator Assembly (112-022)

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>R27, R42</b>	RC20GF1R8J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5% . 1.8 $\Omega$	2	<b>Stackpole</b>
<b>R23, R30, R38, R45</b>	RC20GF100K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 10 $\Omega$	4	<b>Stackpole</b>
R9	RC20GF430J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 43n	1	<b>Stackpole</b>
<b>R8, R13</b>	RC20GF620J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 62n	2	<b>Stackpole</b>
<b>R21, R37</b>	RC20GF201J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 200n	2	<b>Stackpole</b>
<b>R20, R36</b>	RC20GF911J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 910n	2	<b>Stackpole</b>
<b>R22, R35</b>	RC20GF162J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 1,600 $\Omega$	2	<b>Stackpole</b>
<b>R6, R18</b>	RC20GF202J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 2,000 $\Omega$	2	<b>Stackpole</b>
<b>R29, R49</b>	RC20GF302J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 3,000 $\Omega$	2	<b>Stackpole</b>
R19	RC20GF332K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 3,300 $\Omega$	1	<b>Stackpole</b>
<b>R28, R31, R43, R46</b>	RC20GF392K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 3,900 $\Omega$	4	<b>Stackpole</b>
<b>R1, R3</b>	RC20GF562K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 5,600 $\Omega$	2	<b>Stackpole</b>
<b>R2, R4</b>	RC20GF303J	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 30,000 $\Omega$	2	<b>Stackpole</b>
<b>R5</b>	RC20GF104K	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 100,000 $\Omega$	1	<b>Stackpole</b>

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Q T Y</b>	<b>M F R</b>
R10, R11, R14, R15	RN65D	<b>RESISTOR, Metal Film</b> $\frac{1}{2}$ w, 1%, 49.9 $\Omega$	4	Corning
R24, R33, R39, R47	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 100 $\Omega$	4	Corning
R26, R40	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,000 $\Omega$	2	Corning
R34, R49	RN60D	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 2,870 $\Omega$	2	Corning
R12, R25, R41	FR251M	<b>POTENTIOMETER</b> 250 $\Omega$	3	Allen Bradley
C7, C8	DD102	<b>CAPACITOR, Ceramic</b> 1000v, .001 $\mu$ f	2	CRL
C5, C6	CK103	<b>CAPACITOR, Ceramic</b> 50v, .01 $\mu$ f	2	CRL
c3, c4	WMF1P1	<b>CAPACITOR, Mylar</b> 100v, .1 $\mu$ f	2	CDE
C1, c2	35-750-1000-35T	<b>CAPACITOR, Electro- lytic, 35v, 1000<math>\mu</math>f</b>	2	Richey
CR1 thru CR9	SCE-1	<b>DIODE</b>	9	Semtech
Q3, Q7, Q9, Q11, 2N3638 Q15 & Q16, Q17, Q18 & Q19, Q22, Q25		<b>TRANSISTOR</b>	11	Fairchild
Q1, Q6, Q14, Q20	2N3642	<b>TRANSISTOR</b>	4	Fairchild
Q4, Q21	2N3740	<b>TRANSISTOR</b>	2	Motorola
Q10 & Q12, Q23 & Q24	2N5134	<b>TRANSISTOR</b>	4	Fairchild
Q2, Q13	40250	<b>TRANSISTOR</b>	2	RCA

Battery Pack and Regulator Boards Parts List (112-022/112-023)

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
	110-SW1-2	SWITCH, Wafer	2	Wavetek
	112-122	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek
<b><u>BATTERY PACK PARTS LIST (112-023)</u></b>				
	CH1. 2T	BATTERY, Nickel Cadmium	16	Eveready
	112-123	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek
	112-124	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

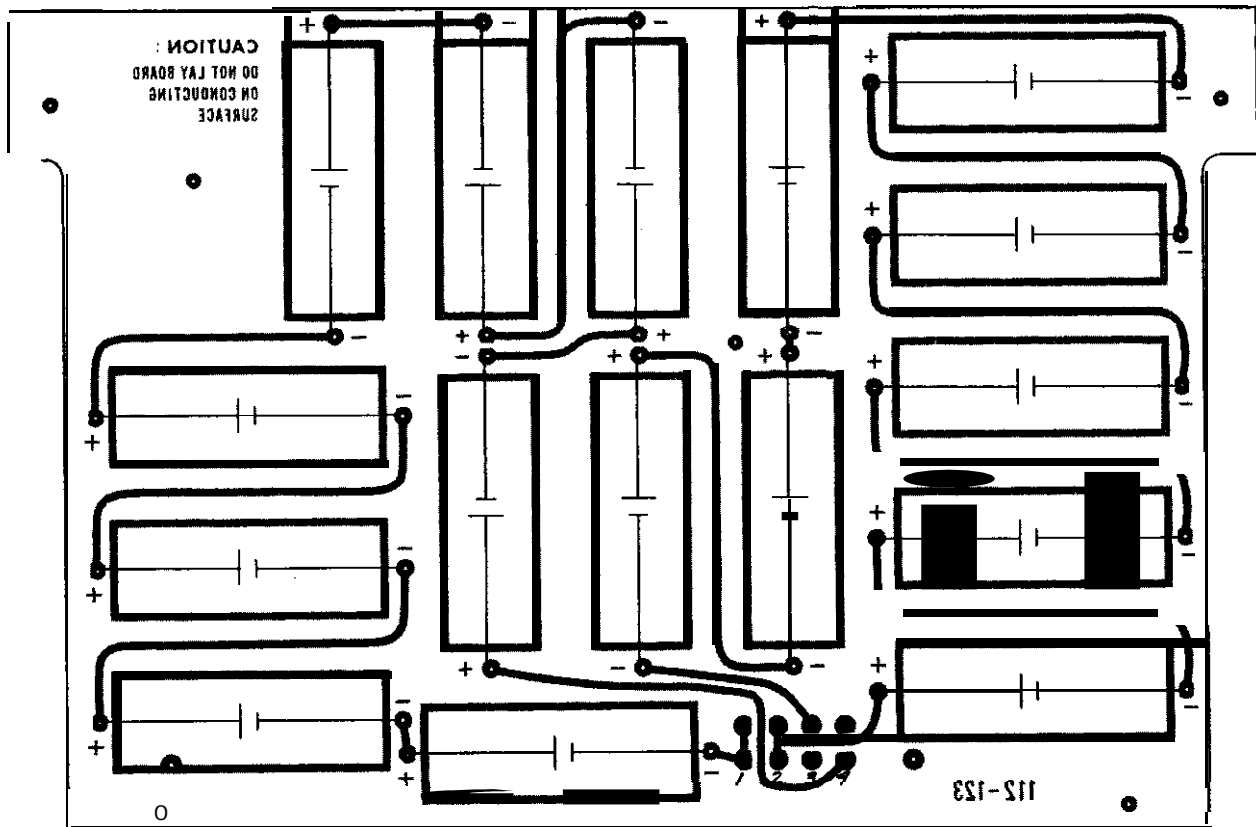


Figure 5- 11. Battery Pack Assembly (112-023)

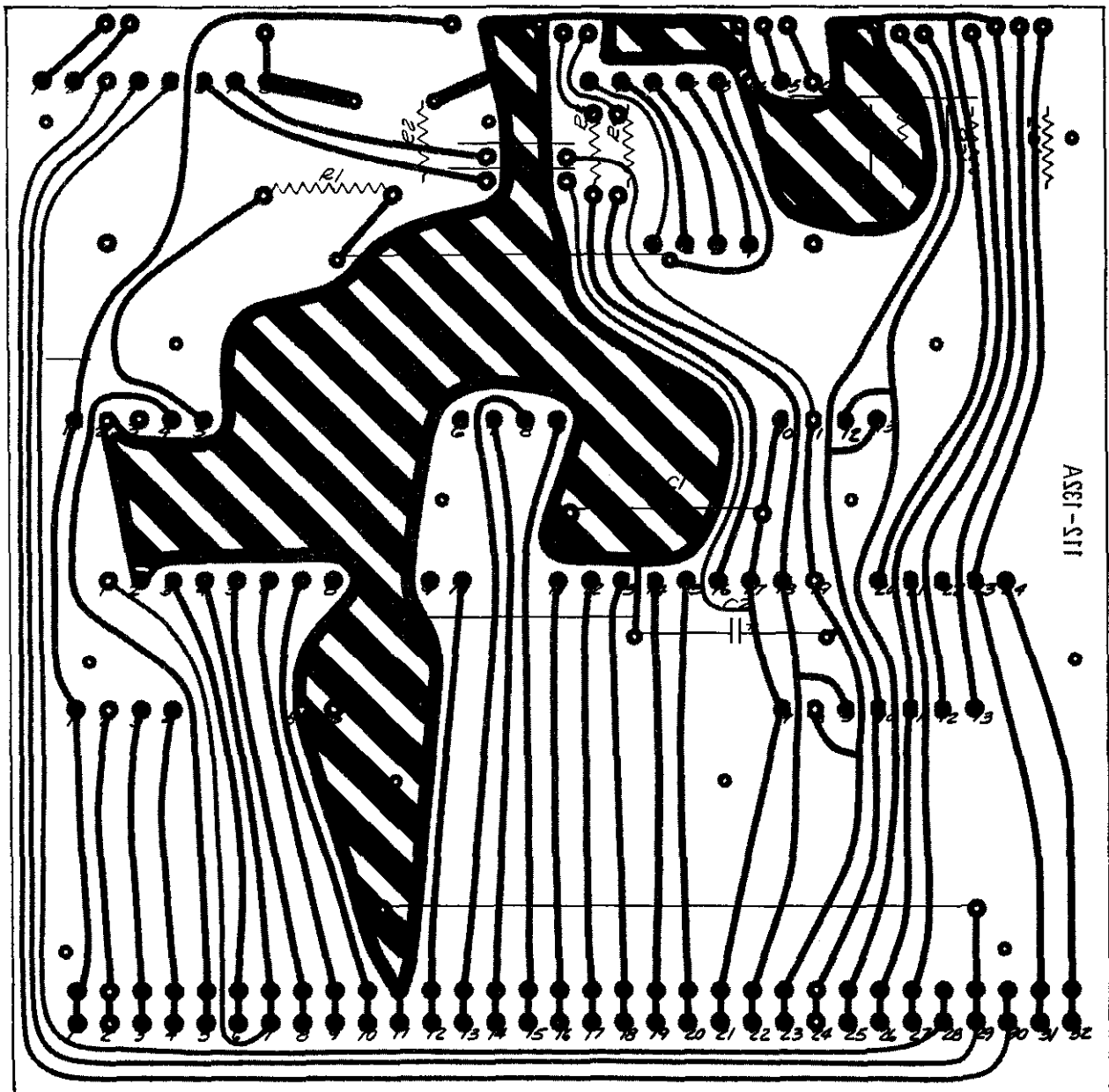


Figure 5- 12. Mother Board Assembly (112-032)



<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
R2	RC20GF1R8K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 1.8 $\Omega$	1	Stackpole
R1*	RC32GF471K	RESISTOR, Carbon 1w, 10%, 470 $\Omega$	1	Stackpole
C1, c2	16-375-100-15T	CAPACITOR, Electro- lytic, 15v, 100 $\mu$ f	2	Richey
	112-132	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

\*Replaced by jumper in battery models.

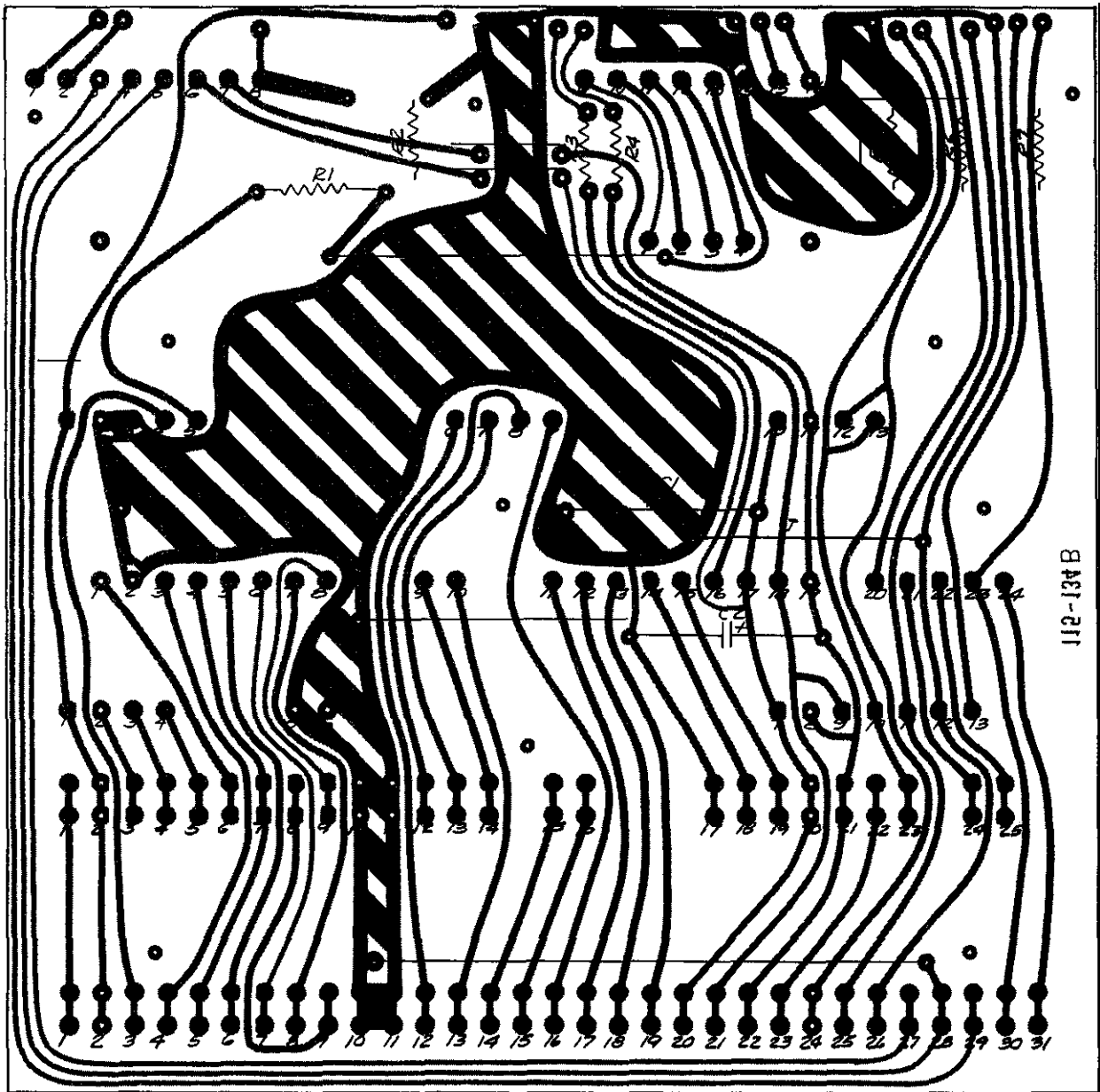


Figure 5- 13. Mother Board Assembly (115-034)

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
R2	RC20GF1R8K	RESISTOR, Carbon $\frac{1}{2}$ w, 10%, 1.8n	1	Stackpole
R1*	RC32GF471K	RESISTOR, Carbon 1w, 10%, 470n	1	Stackpole
C1, C2	16-375-100-15T	CAPACITOR, Electro- lytic, 15v, 100 $\mu$ f	2	Richey
	115-134	CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper	1	Wavetek

\*Replaced by jumper for battery models.

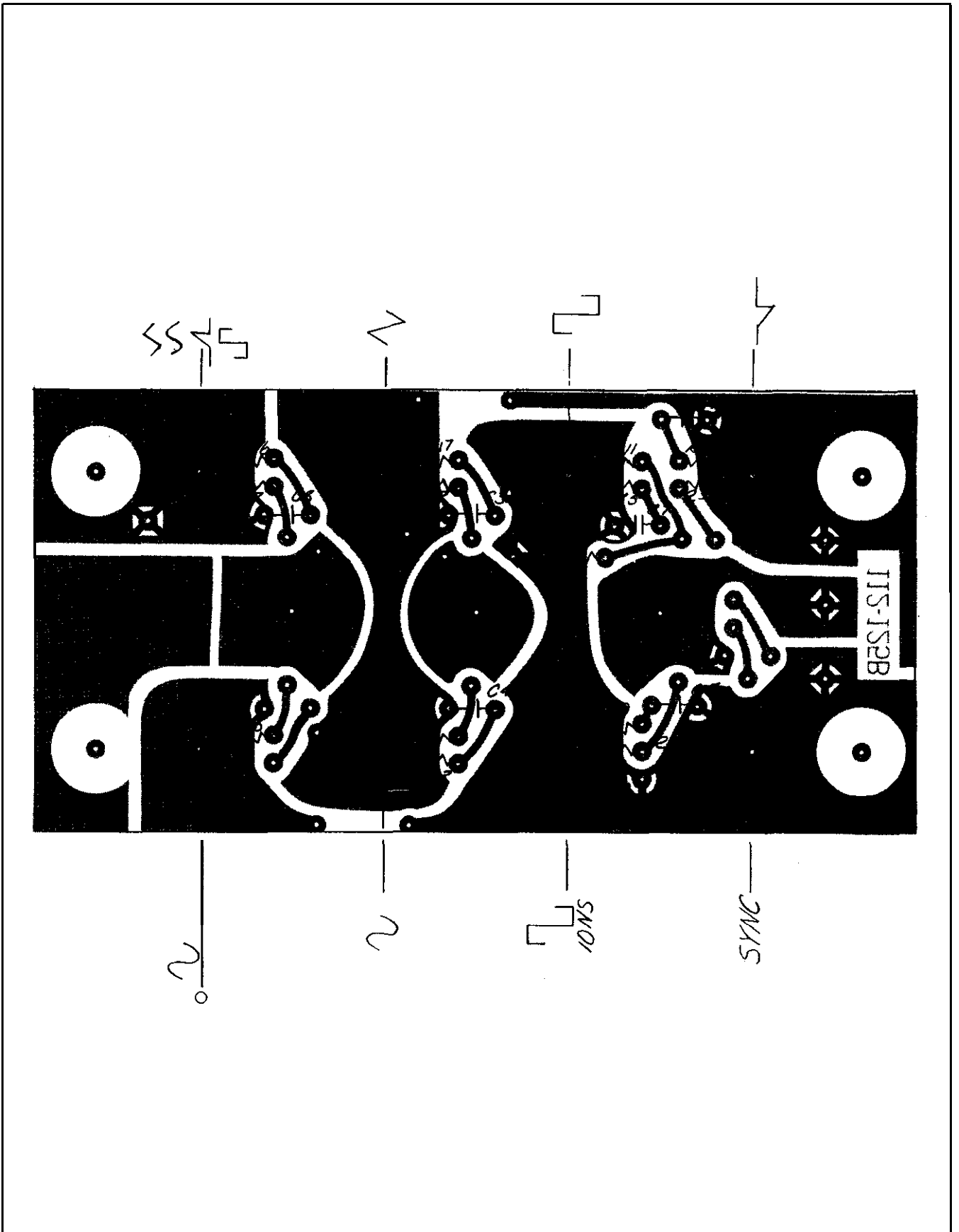


Figure 5-14. Connector Mounting Board Assembly (112-025)

<b>CIRCUIT REFERENCE</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>MFR</b>
<b>R13, R14, R15, F116, R17</b>	<b>RC20GF4R7J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 4.7 $\Omega$	<b>5</b>	<b>Stackpole</b>
<b>R10</b>	<b>RC20GF330K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 33n	<b>1</b>	<b>Stackpole</b>
<b>F19</b>	<b>RC20GF560K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 56n	<b>1</b>	<b>Stackpole</b>
<b>R8</b>	<b>RC20GF471K</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 10%, 470n	<b>1</b>	<b>Stackpole</b>
<b>F16</b>	<b>RC20GF202J</b>	<b>RESISTOR, Carbon</b> $\frac{1}{2}$ w, 5%, 2,000 $\Omega$	<b>1</b>	<b>Stackpole</b>
<b>F12, R3, R4, R5, F17, R11</b>	<b>RN60D</b>	<b>RESISTOR, Metal Film</b> $\frac{1}{4}$ w, 1%, 49.9 $\Omega$	<b>6</b>	<b>Corning</b>
<b>C7</b>	<b>DD470</b>	<b>CAPACITOR, Ceramic</b> 1000v, 47pf	<b>1</b>	<b>CRL</b>
<b>C5</b>	<b>DD151</b>	<b>CAPACITOR, Ceramic</b> 1000v, 150pf	<b>1</b>	<b>CRL</b>
<b>C3, C6, C8</b>	<b>DD681</b>	<b>CAPACITOR, Ceramic</b> 1000v, 680pf	<b>3</b>	<b>CRL</b>
<b>C4</b>	<b>CCD102</b>	<b>CAPACITOR, Ceramic</b> 1000v, .001 $\mu$ f	<b>1</b>	<b>CRL</b>
<b>C10</b>	<b>UK10-104</b>	<b>CAPACITOR, Ceramic</b> 10v, 1 $\mu$ f	<b>1</b>	<b>CRL</b>
	<b>UG657/U</b>	<b>CONNECTOR, BNC</b>	<b>8</b>	<b>Kings</b>
	<b>112-125</b>	<b>CIRCUIT BOARD, 1/16 Epoxy, 2oz. Copper</b>	<b>1</b>	<b>Wavetek</b>

## **MANUAL REVISIONS**

**Since printing and delivery schedules sometimes do not coincide with engineering developments, the most current data may not appear in its proper place in the printed manual. The following pages are therefore provided.**

**MODEL 110 - 116:**

Raytheon 2N2905 may be used as an alternate for TI 2N2905.

**VCG BOARD:**

1. Change R45, 160 $\Omega$  carbon resistor to 47 $\Omega$ , 10% carbon resistor.
2. Change C3, .001 $\mu$ f ceramic disc capacitor to .0015 $\mu$ f ceramic disc capacitor.

**POWER SUPPLY BOARD:**

1. Change R33, 3. 83K metal film resistor to 3. 32K, 1% metal film resistor.
2. Change R36, 6.2K carbon resistor to 7. 5K, 1% metal film resistor.
3. Change R38, 3. 83K metal film resistor to 3. 32K, 1% metal film resistor.
4. Change R44, 220 $\Omega$  carbon resistor to 150 $\Omega$ , 5% carbon resistor.

**MODEL 110 FRONT SUBPANEL:**

1. Change R22, 10K carbon resistor to 2K, 5% carbon resistor.
2. Change R24, 43 $\Omega$  carbon resistor to 33 $\Omega$ , 5% carbon resistor.
3. Change C11, 47pf ceramic disc capacitor to 100pf ceramic disc capacitor.
4. Change C12, 100pf ceramic disc capacitor to 68pf ceramic disc capacitor.
5. Delete C 14.
6. Delete R 3 6 .
7. Add a 49.9 $\Omega$ , 1%, metal film resistor in series with sine, triangle and square wave inputs at function selector switch.

See Figure 1.

**MODEL 111 FRONT SUBPANEL:**

1. Change R35, 43 $\Omega$  carbon resistor to 33 $\Omega$ , 5%, carbon resistor.
2. Change R38, 10K carbon resistor to 2K, 5%, carbon resistor.
3. Change C12, 100pf ceramic disc capacitor to 68pf, ceramic disc capacitor.

4. **Change C13, 47pf, ceramic disc capacitor to 100pf, ceramic disc capacitor.**
5. **Delete R57.**
6. **Delete C 18.**
7. **Add a 49.9 $\Omega$ , 1%, metal film resistor in series with sine, triangle, square and ramp inputs at the function selector switch.**

**See Figure 2.**

**ALL BATTERY MODEL SPECIFICATIONS:**

**Square Wave Rise and Fall Time - delete "5 volt adjustable less than 100nsec."**



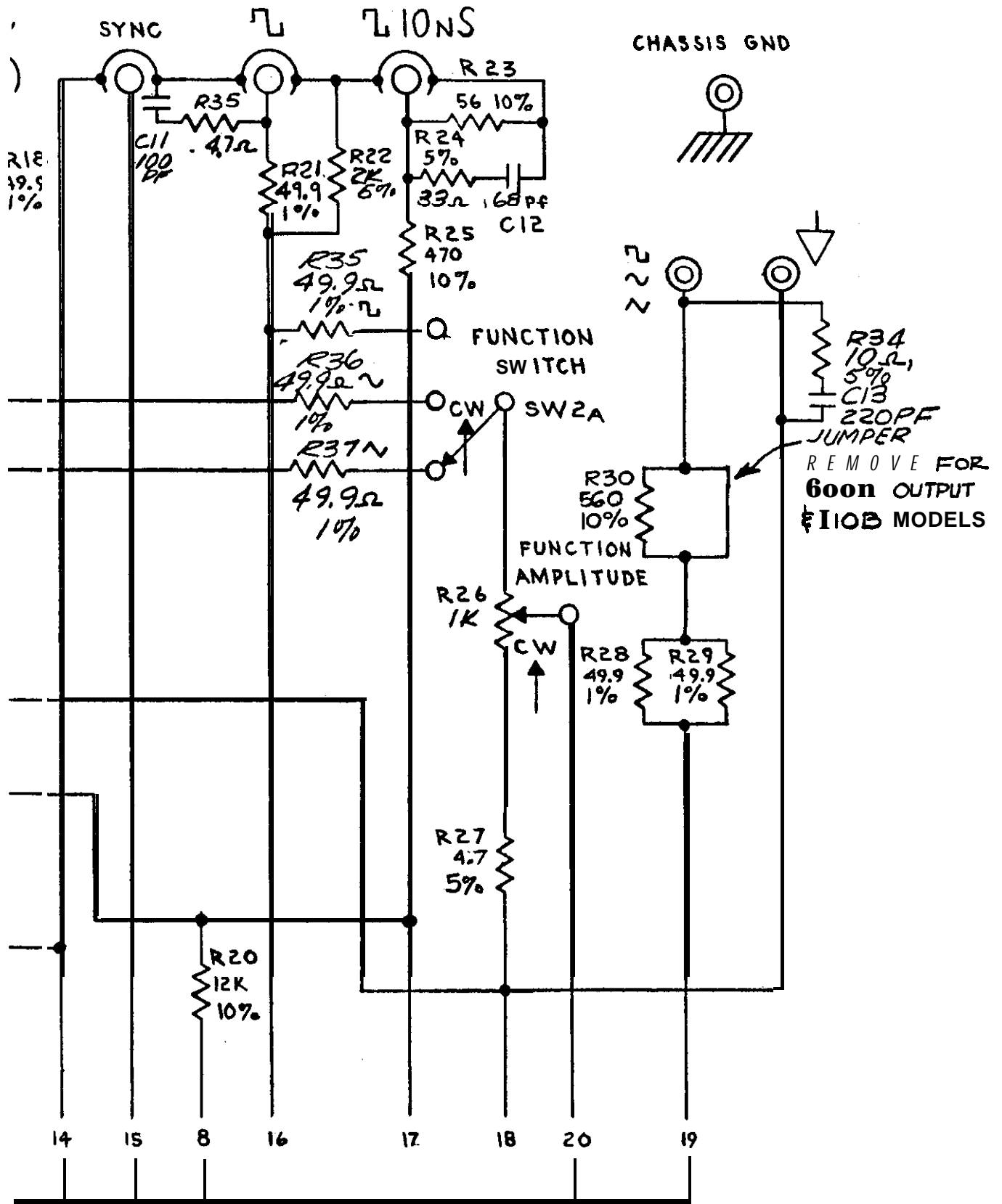


Figure 1

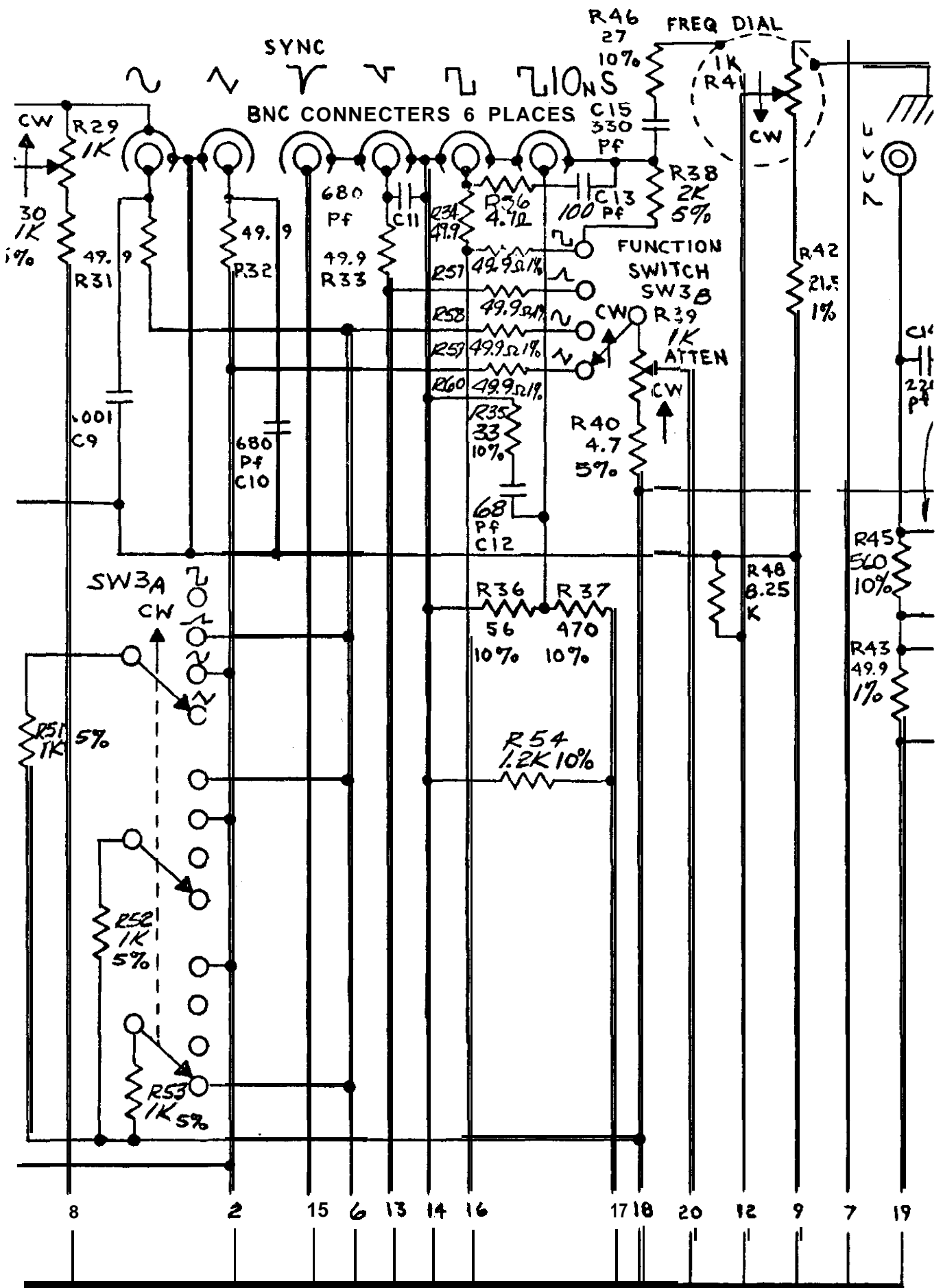


Figure 2