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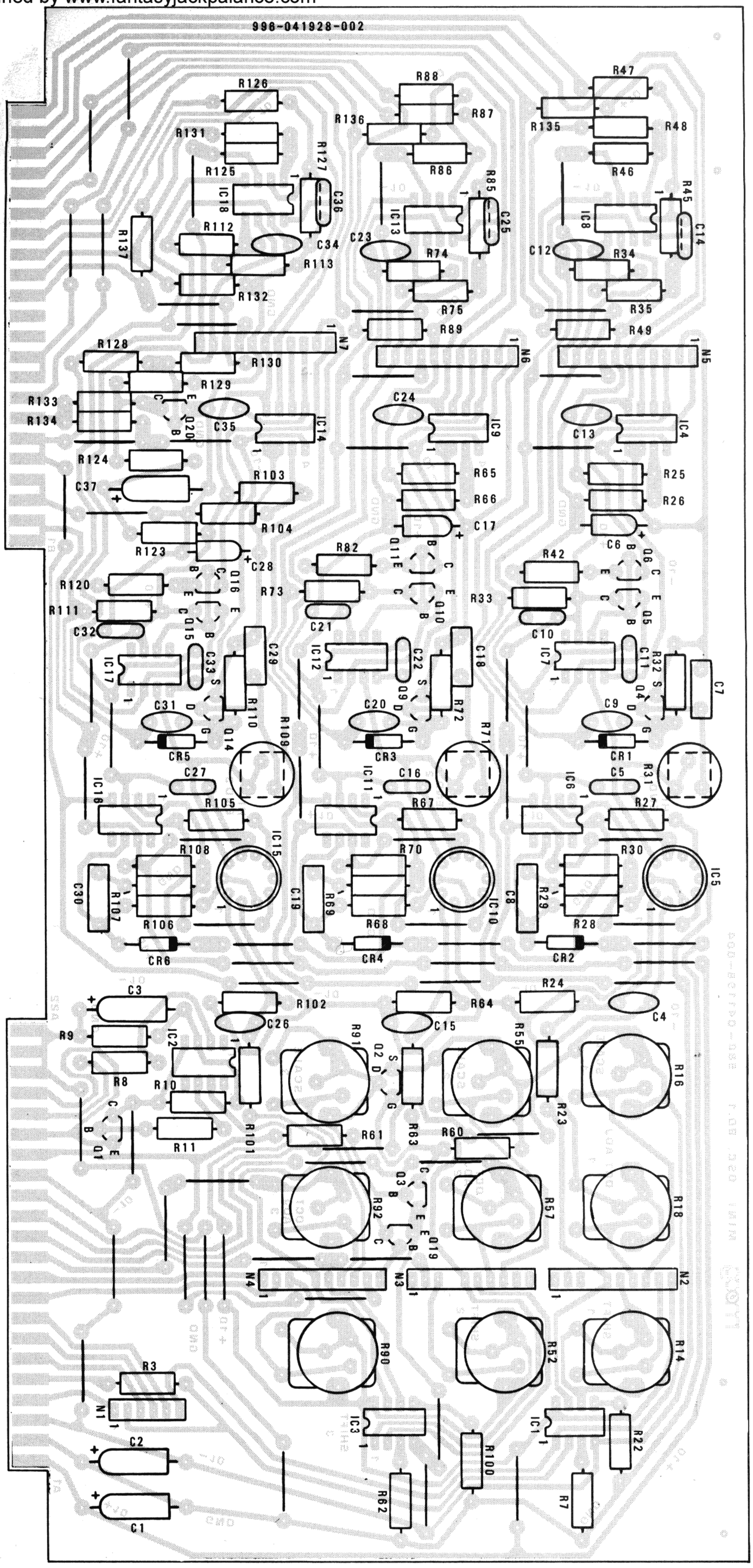


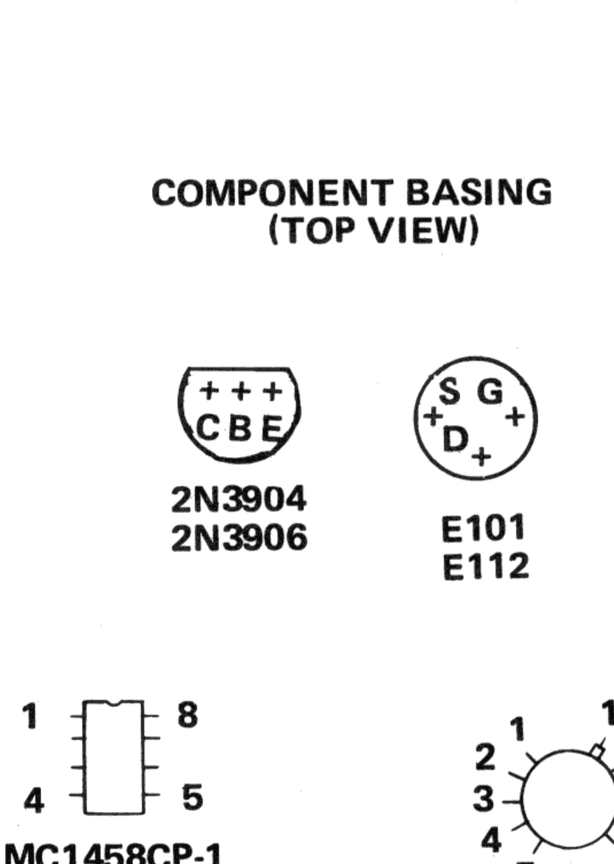
NOTES:

1. **UNLESS OTHERWISE SPECIFIED ALL RESISTOR VALUES ARE IN OHMS 1/4W ± 5%.**
2. **MINIMOOG BETWEEN SERIAL NUMBER 11362 AND 11794 MAY HAVE 726 INTEGRATED CIRCUITS FROM DATE CODES 7850 AND 7907 WHICH WILL NOT HOLD THE INSTRUMENT IN TUNE. THESE DEVICES SHOULD BE REPLACED IF FOUND WITH PARTS OF DATED CODES PRIOR TO OR SUBSEQUENT TO THESE DATE CODES.**

3. **R27, R67 AND R105 ARE SELECTED TO CAUSE OSCILLATOR TO CHANGE EXACTLY ONE OCTAVE WITH DVM ACROSS PINS 1 AND 10 OF IC5. SELECT R27 FOR 20.5MV ± .4MV USING A 49.9K, 75K OR 100K. SIMILARLY, REPEAT FOR IC10 AND IC15.**

4. **FACTORY SELECTED (IF NECESSARY) TO ACHIEVE 50% ± 1% RECT. DUTY CYCLE.**

5. **R59 RESISTOR DELETED ON SERIAL NUMBERS ABOVE 10175.**



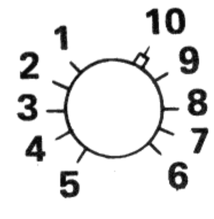
OSCILLATOR 1 RANGE SWITCH

COMPONENT BASING (TOP VIEW)

2N3904
2N3906

E101
E112

MC1458CP-1
TL081
LM393
741



726

FIGURE 9-1 OSCILLATOR PRINTED CIRCUIT BOARD NO. 1 ASSEMBLY (SERIAL NUMBERS 10175 AND ABOVE)

OSCILLATOR P.C. BOARD
980-041198-001

PRIMARY OSC SUMMER
N1 PRIMARY SUMMER
NETWORK 949-042330-001
R1, R2, R4 THRU R6
−1.00V/OCT
+2.10V @ LO F (OTHER INPUTS=NOM. VALUE)

PITCH WHEEL
TUNE
KEYBOARD
MOD WHEEL
OSC MOD
OSCILLATOR INPUT
OSC 1 SCALE
OSC 1 OCT ADJ
OSC 1 SHIFT
OSC 1 HI END COMP
OSC 1 SUMMER
OSC 1 CURRENT SOURCE
OSC 1 VOL

N2 SECONDARY SUMMER
NETWORK 949-042331-001
R12, R13, R15, R17, R19, R20, R21

N5 OSCILLATOR
NETWORK 949-042332-001
R36 THRU R41, R43, R44

OV=RECT 22B
−2.5V=15% D/CY
PW 1 IN

OSC 2 FREQ
OSC 2 SCALE
OSC 2 OCT ADJ
OSC 2 SHIFT
OSC 2 HI END COMP
OSC 2 SUMMER
OSC 2 CURRENT SOURCE
OSC 2 VOL

N3 SECONDARY SUMMER
NETWORK 949-042331-001
R50, R51, R53, R54, R56, R58, R59

N6 OSCILLATOR
NETWORK 949-042332-001
R76 THRU R81, R83, R84

OV=RECT 18B
−2.5V=15% D/CY
PW 2 IN

OSC 3 FREQ
OSC 3 SCALE
OSC 3 OCT ADJ
OSC 3 SHIFT
OSC 3 HI END COMP
OSC 3 SUMMER
OSC 3 CURRENT SOURCE
OSC 3 VOL

N4 SECONDARY SUMMER
NETWORK 949-042331-001
R93 THRU R99

N7 OSCILLATOR
NETWORK 949-042332-001
R114 THRU R119, R121, R122

OV=RECT 14B
−2.5V=15% D/CY
PW 3 IN

OSC RANGE SWITCHES
OSC 3 CONTROL

POWER SUPPLY SENSE LINES
+10S
+10S
GND S
GND S
GND S
−10S
−10S

AUDIO NODE +2VDC

REV SAW 3 OUT

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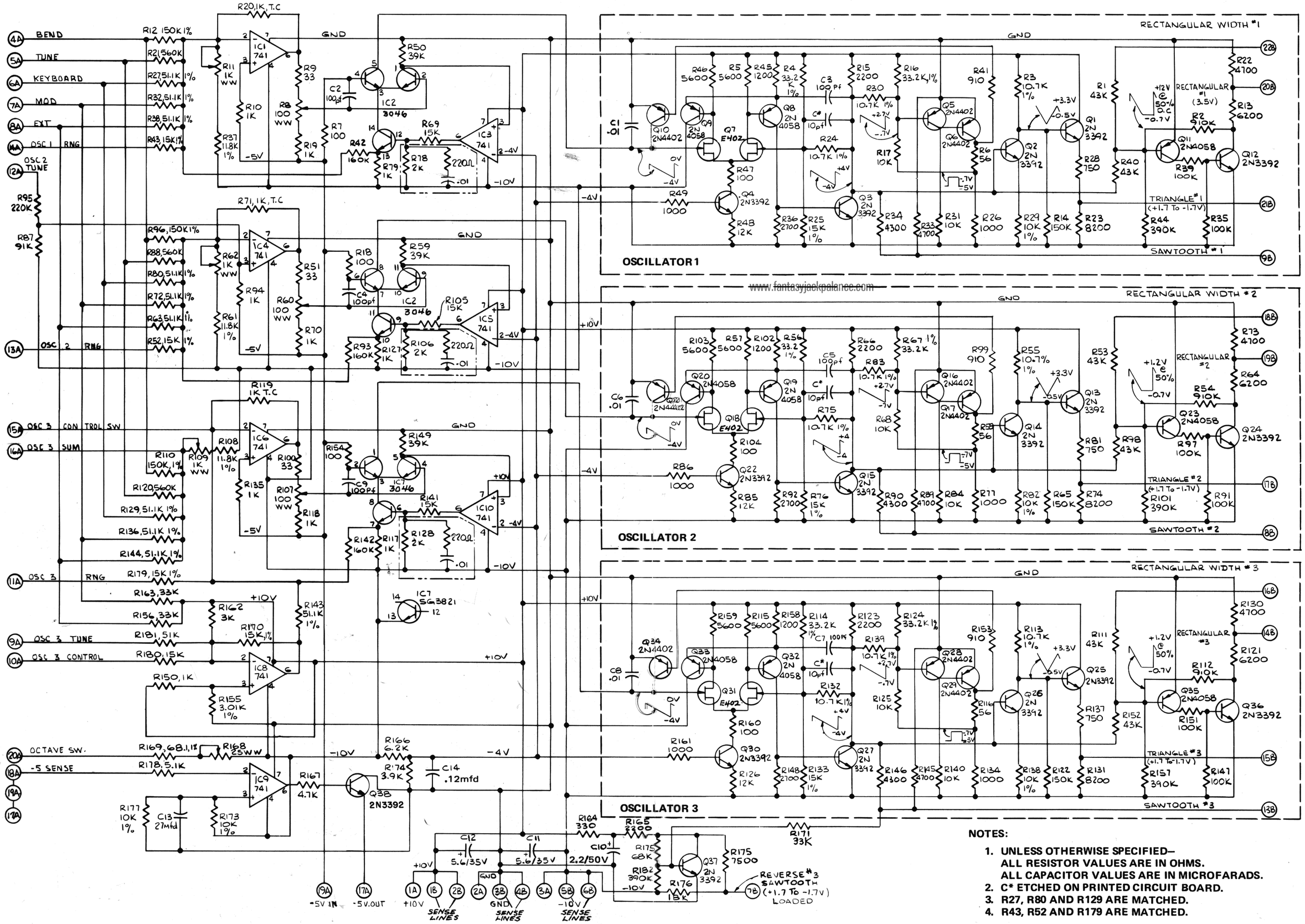
FIGURE 9-2 OSCILLATOR PRINTED CIRCUIT BOARD NO. 1 SCHEMATIC DIAGRAM (SERIAL NUMBERS 10175 AND ABOVE)



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NOTES:

1. **UNLESS OTHERWISE SPECIFIED— ALL RESISTOR VALUES ARE IN OHMS. ALL CAPACITOR VALUES ARE IN MICROFARADS.**
2. **C* ETCHED ON PRINTED CIRCUIT BOARD.**
3. **R27, R80 AND R129 ARE MATCHED.**
4. **R43, R52 AND R179 ARE MATCHED.**

FIGURE 9-3 OSCILLATOR PRINTED CIRCUIT BOARD NO. 1 SCHEMATIC DIAGRAM (SERIAL NUMBERS BELOW 10175)

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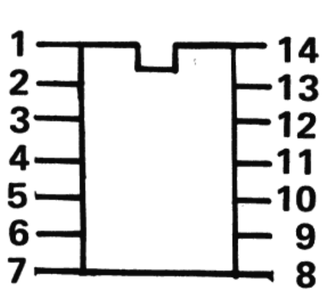
COMPONENT BASING

2N3392
BOTTOM VIEW

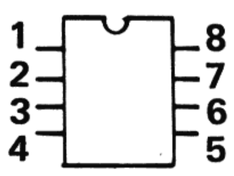
2N4058
BOTTOM VIEW

2N4402
BOTTOM VIEW

E402
BOTTOM VIEW



3046
TOP VIEW



741
TOP VIEW

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FIGURE 9-4 OSCILLATOR PRINTED CIRCUIT BOARD NO. 1 ASSEMBLY (SERIAL NUMBERS BELOW 10175)

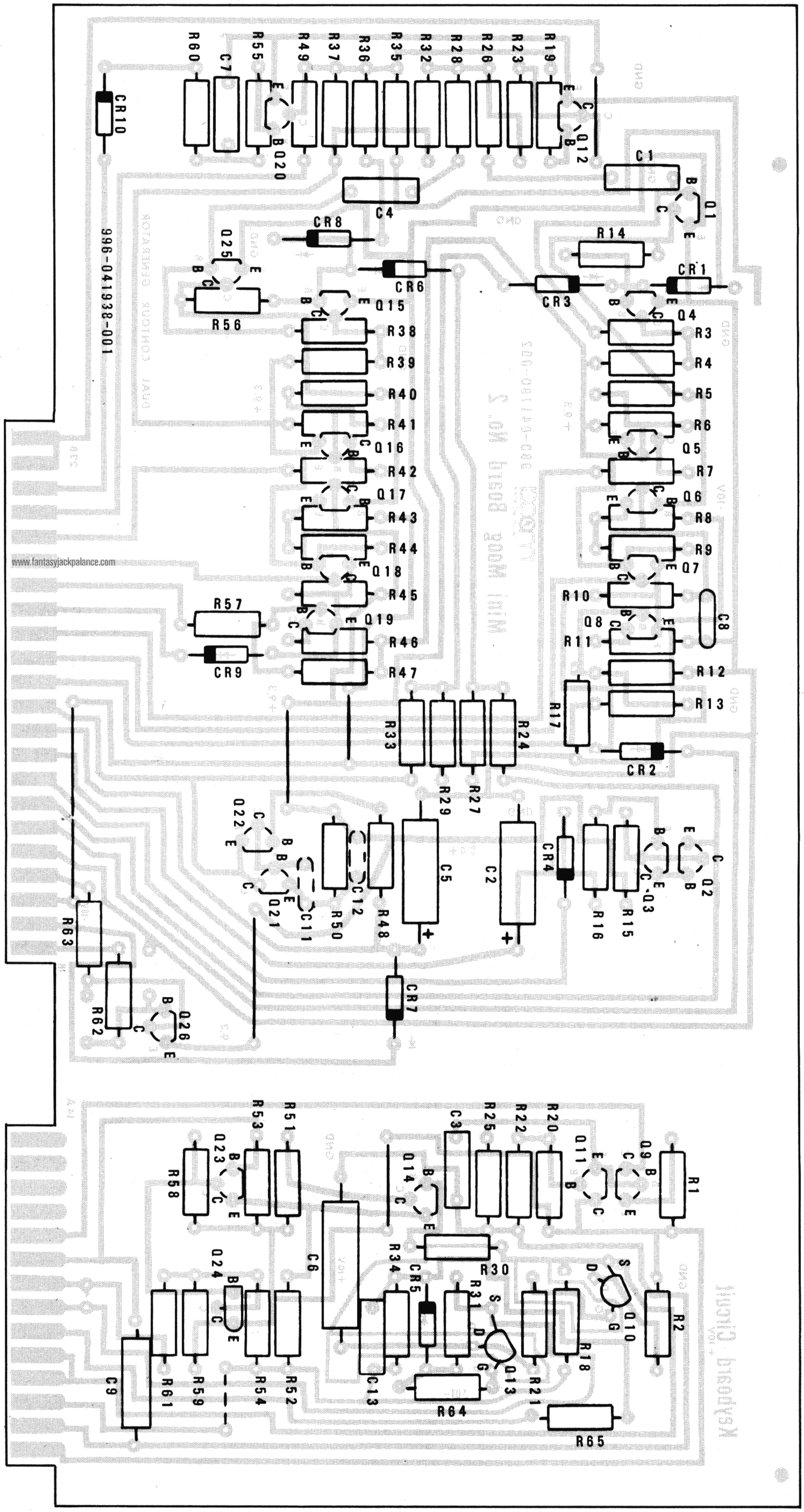

FIGURE 9-6 CONTOUR GENERATOR AND KEYBOARD PRINTED CIRCUIT BOARD NO. 2 ASSEMBLY

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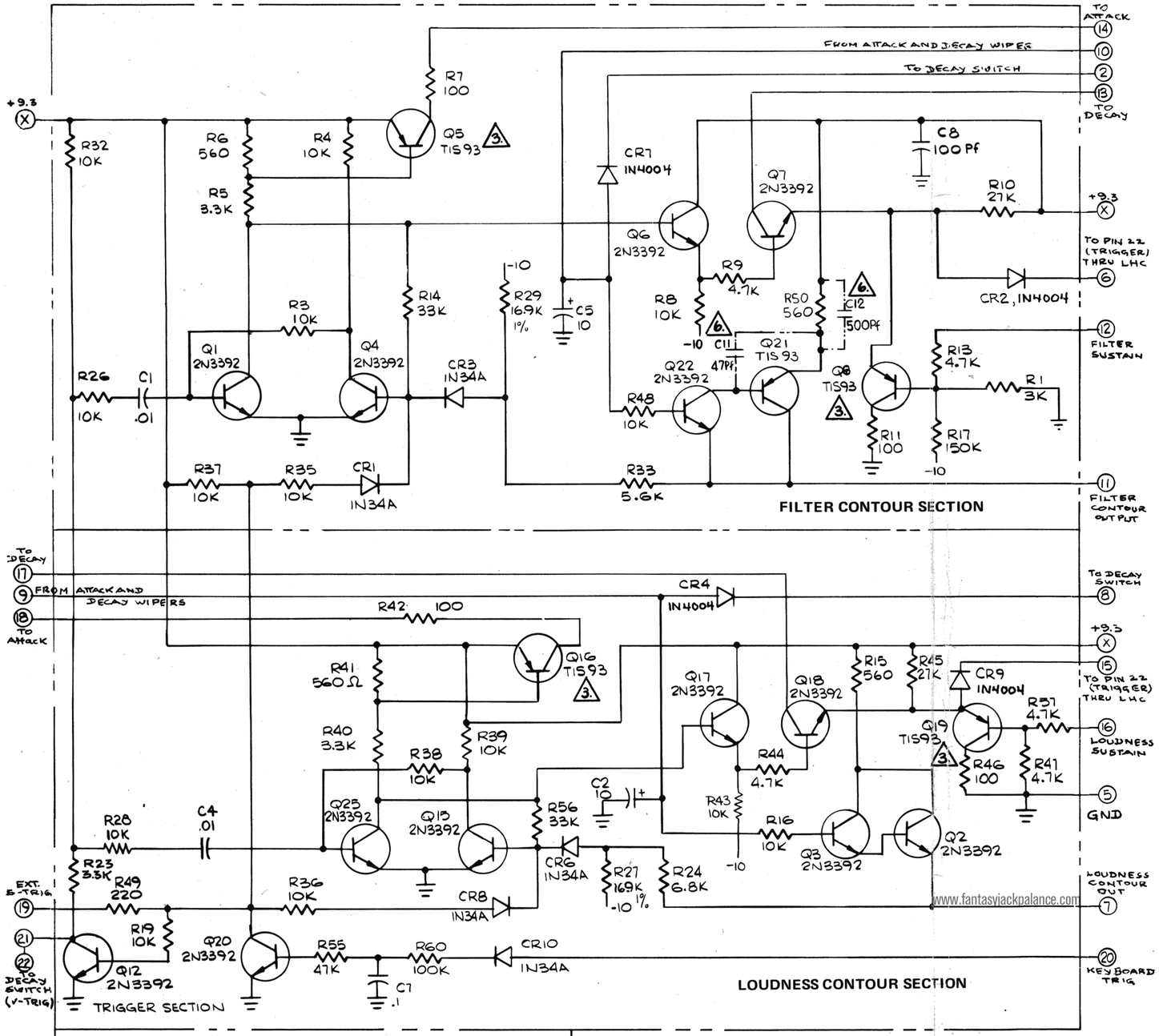
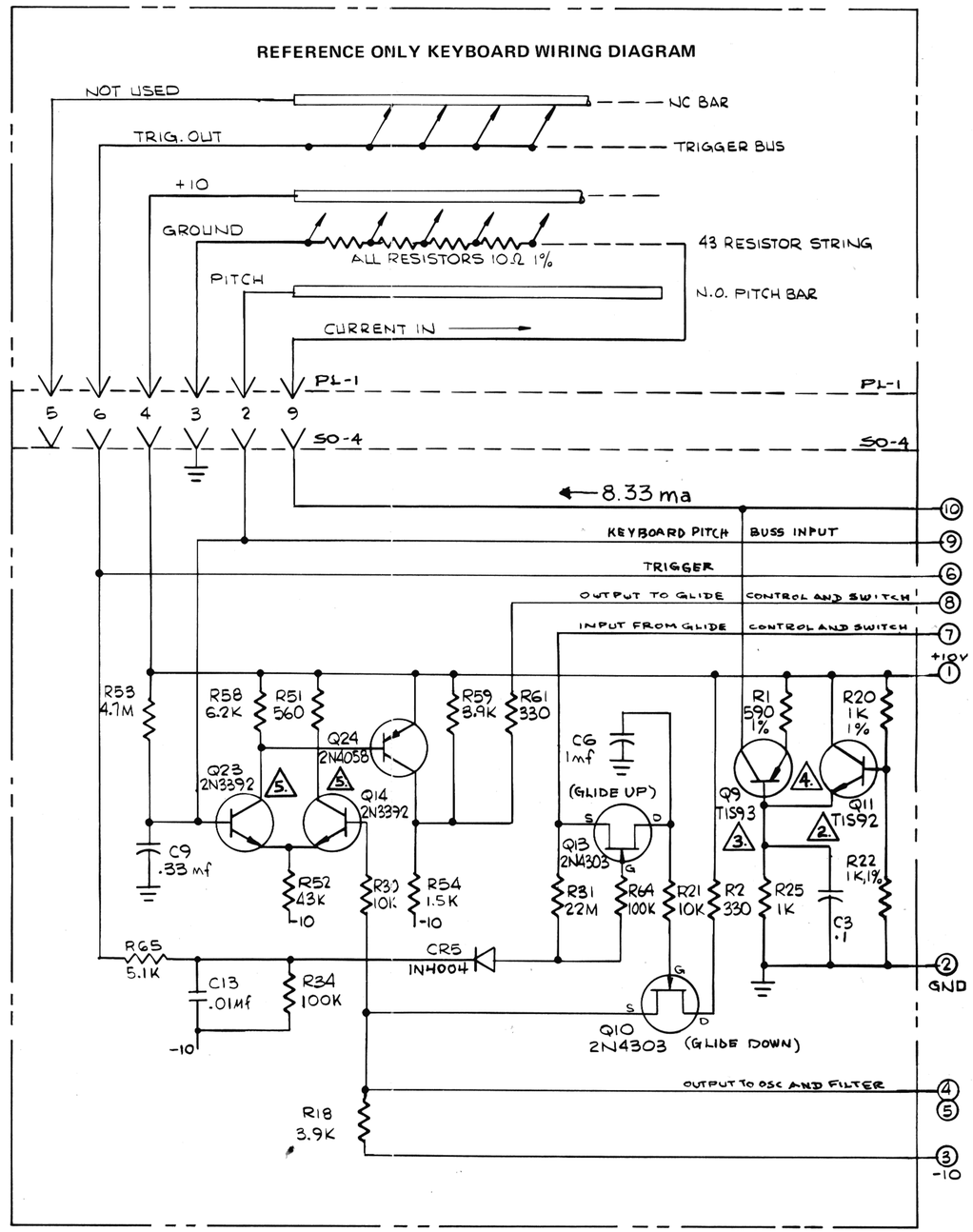


CIRCUIT NO. 8 - BOARD NO. 2 DUAL CONTOUR GENERATOR



CIRCUIT NO. 1 - BOARD NO. 2 KEYBOARD CIRCUIT

COMPONENT BASING

NOTES:
UNLESS OTHERWISE SPECIFIED –

1. ALL RESISTORS IN OHMS ± 5%, 1/4W CARBON.

2. ALTERNATE FOR TIS92 AND 2N3415: 2N3904.

3. ALTERNATE FOR TIS93: 2N3906.

4. Q9 AND Q11 MATCHED PAIR. PNP 10mV TO 20mV LOWER THAN NPN AT 200mA.

5. Q14 AND Q23 MATCHED PAIR.

6. USE C11 OR C12 AS REQUIRED TO PREVENT PARASITIC OSCILLATION.

FIGURE 9-7 CONTOUR GENERATOR AND KEYBOARD NO. 2 SCHEMATIC DIAGRAM

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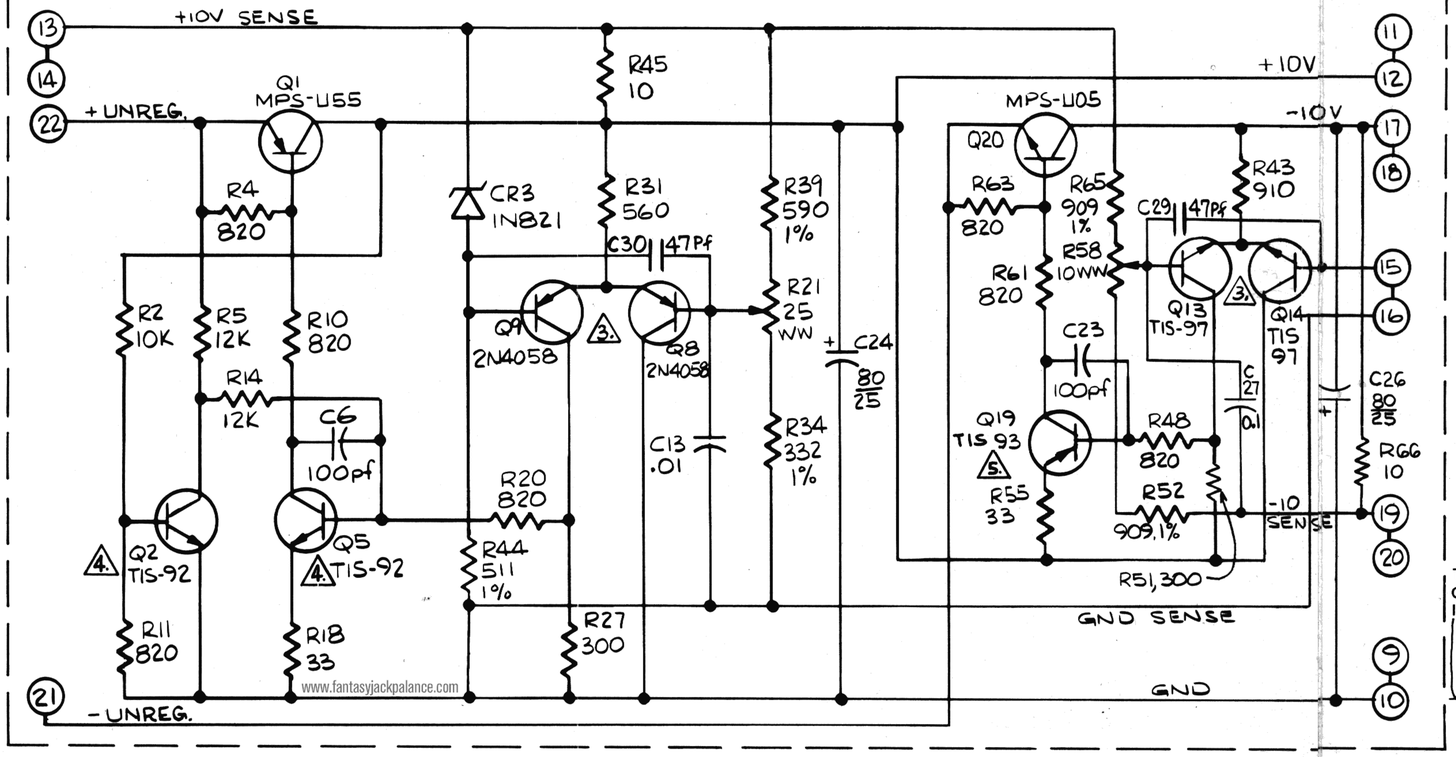
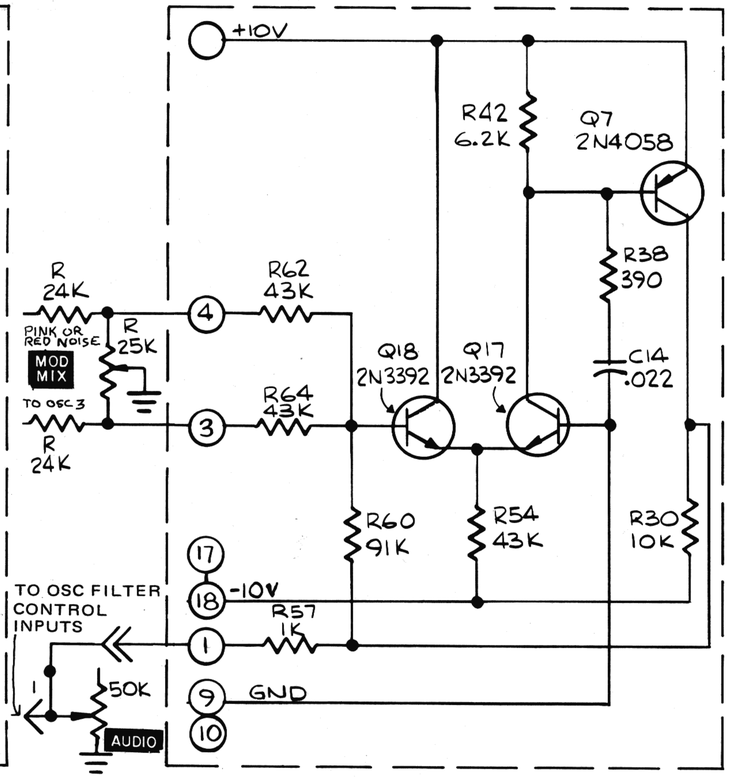


CIRCUIT NO. 10 - BOARD NO. 3
DUAL VOLTAGE REGULATOR



AMOUNT OF MODULATION OF LEFT HAND CONTROLLER

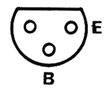
CIRCUIT NO. 15 - BOARD NO. 3
MODULATION MIX AMPLIFIER

NOTES:
UNLESS OTHERWISE INDICATED:

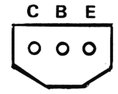
1. **ALL RESISTORS ARE 1/2 WATT.**
2. **ALL CAPACITORS ARE IN MICROFARADS.**
3. **Q14 AND Q13 ARE HEAT SUNK TOGETHER. Q8 AND Q9 ARE HEAT SUNK TOGETHER.**
4. **ALTERNATE FOR TIS92, 2N3904.**
5. **ALTERNATE FOR TIS93, 2N3906.**

COMPONENT BASING

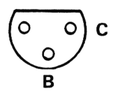
BOTTOM VIEW
2N3392
2N4058



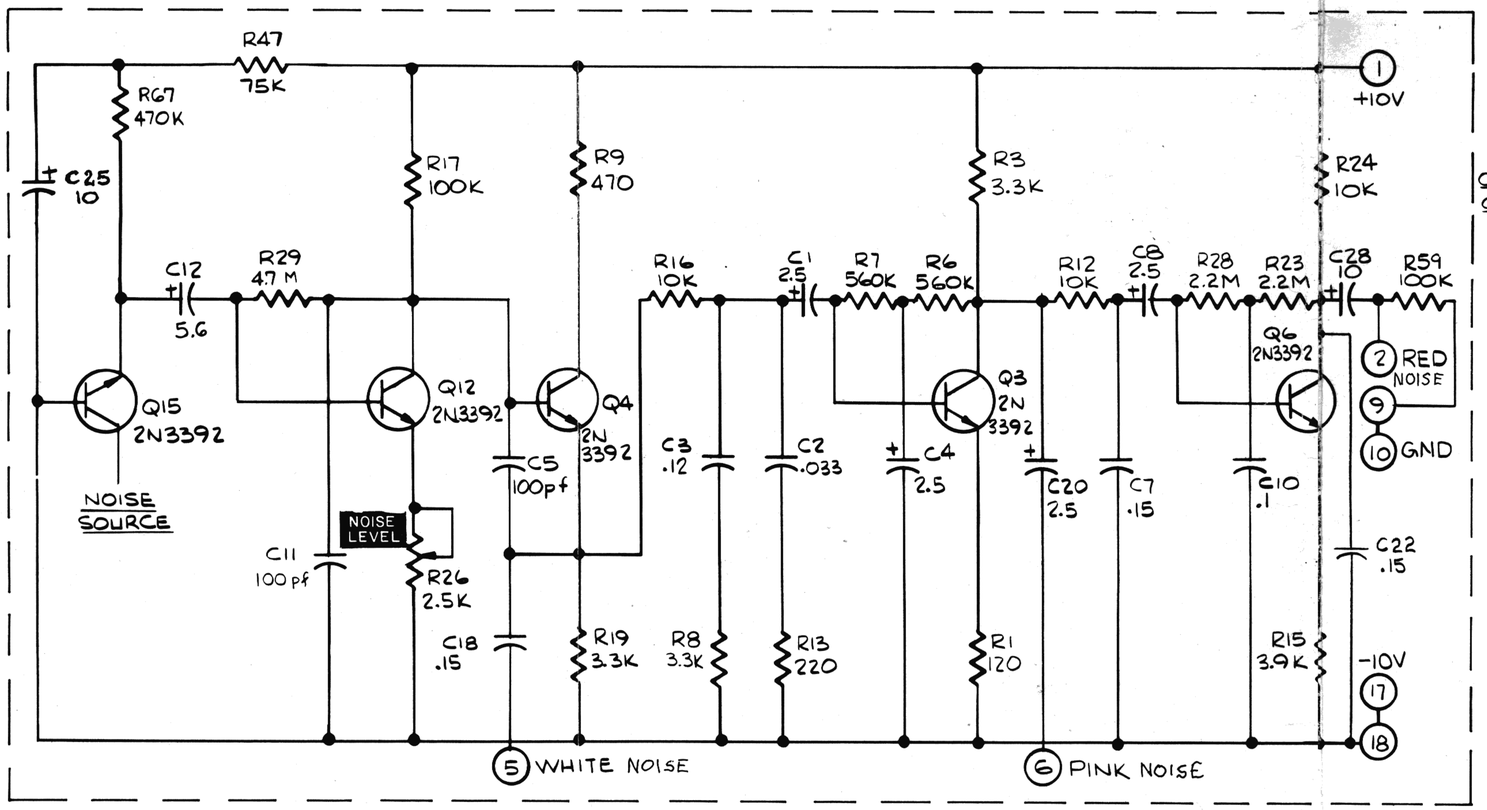
TIS-92
TIS-93
TIS-97



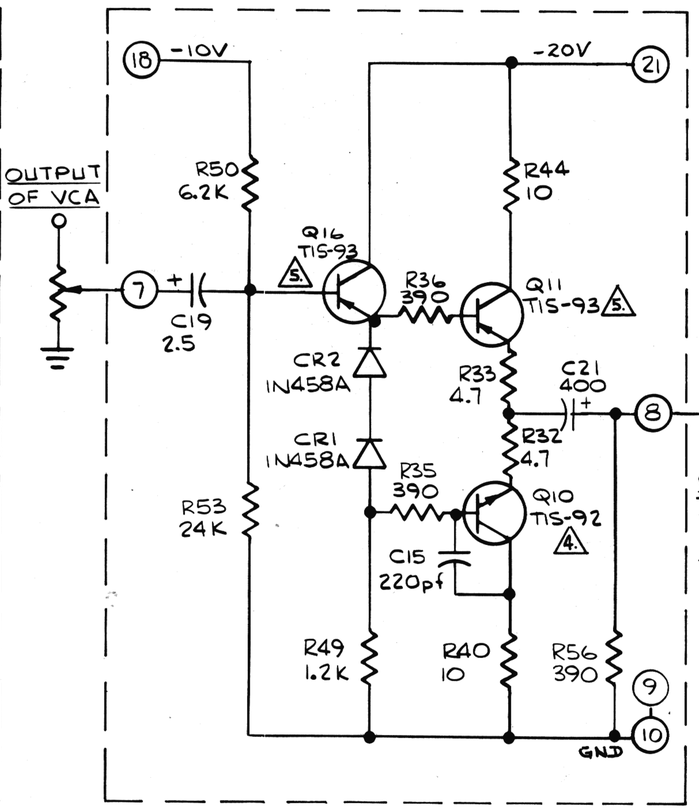
MPS-U05
MPS-U55



2N3906
2N3904



CIRCUIT NO. 3 - BOARD NO. 3
NOISE GENERATOR



CIRCUIT NO. 11 - BOARD NO. 3
HEADPHONE AMPLIFIER

FIGURE 9-8 POWER SUPPLY PRINTED CIRCUIT BOARD NO. 3 SCHEMATIC DIAGRAM

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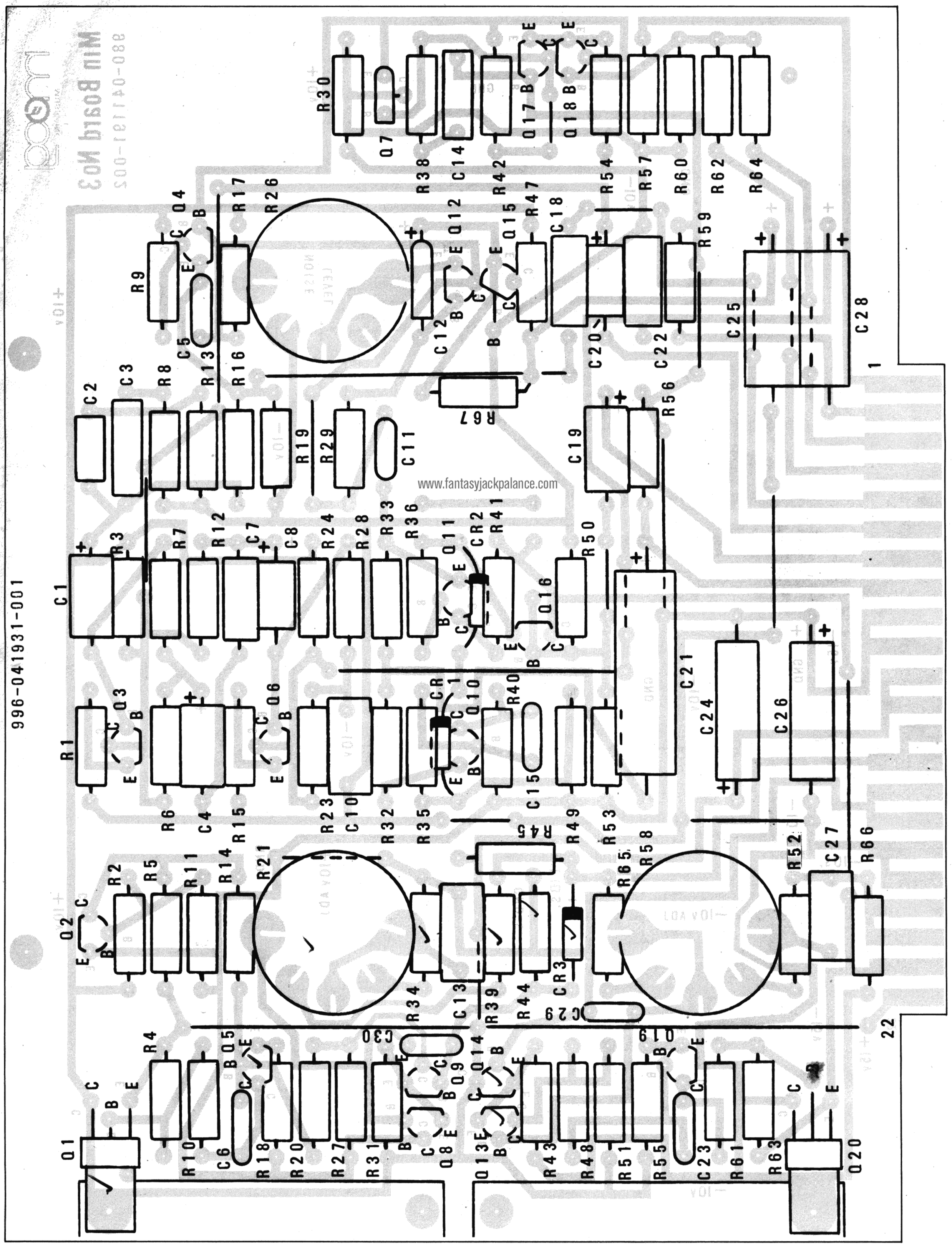

FIGURE 9-9 POWER SUPPLY PRINTED CIRCUIT BOARD NO. 3 ASSEMBLY

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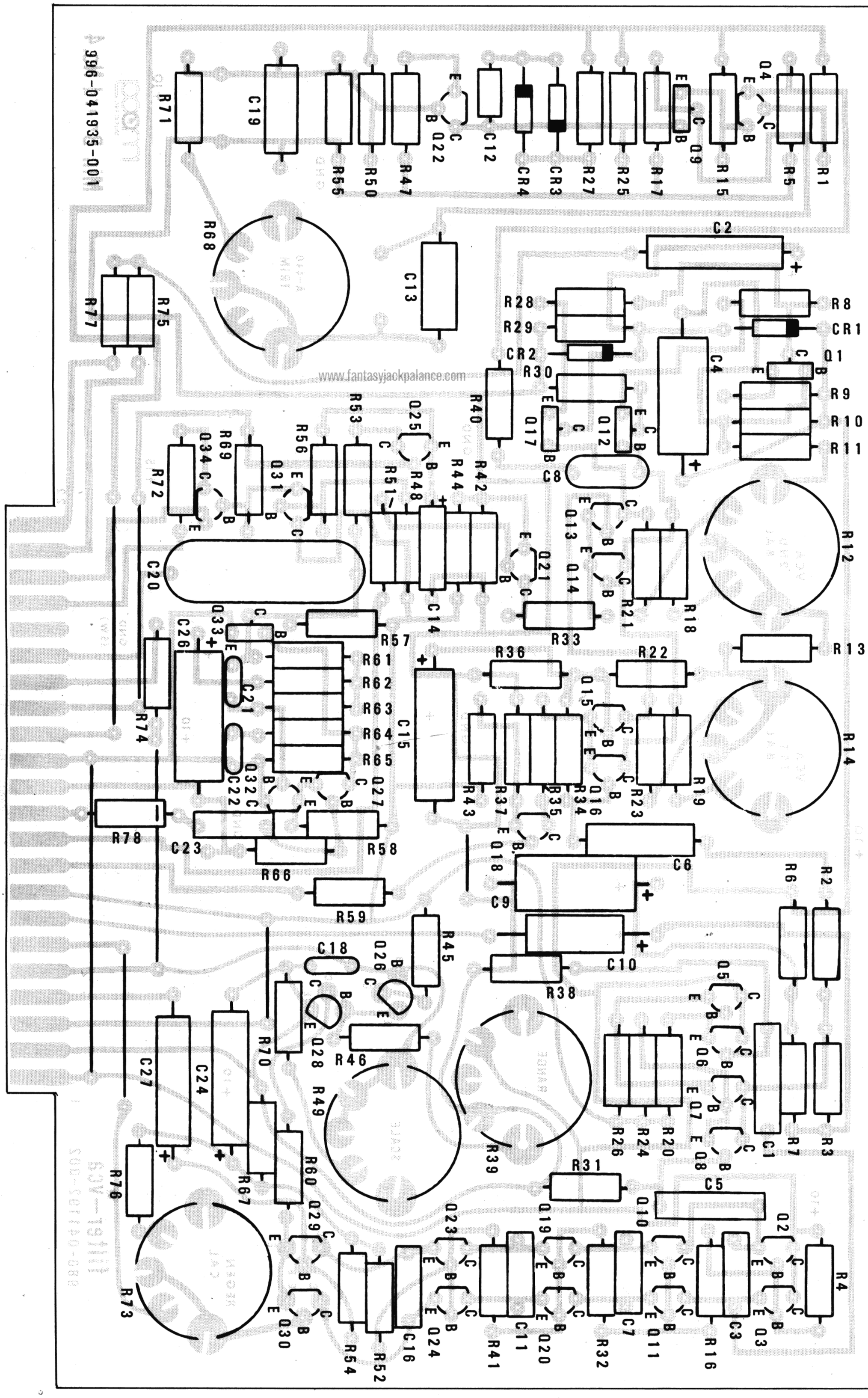

FIGURE 9-10 FILTER PRINTED CIRCUIT BOARD NO. 4 ASSEMBLY

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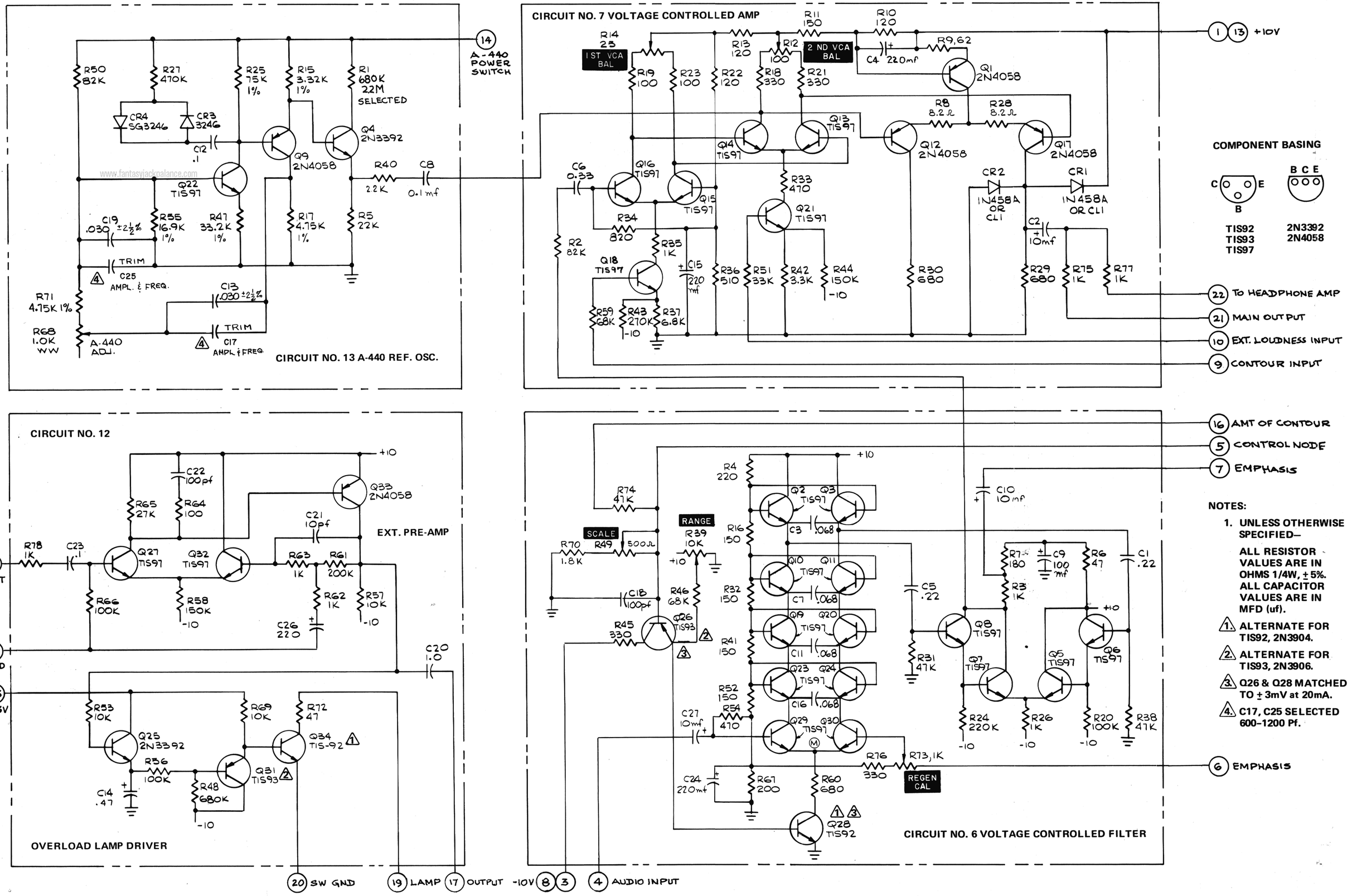

FIGURE 9-11 FILTER PRINTED CIRCUIT BOARD NO. 4 SCHEMATIC DIAGRAM

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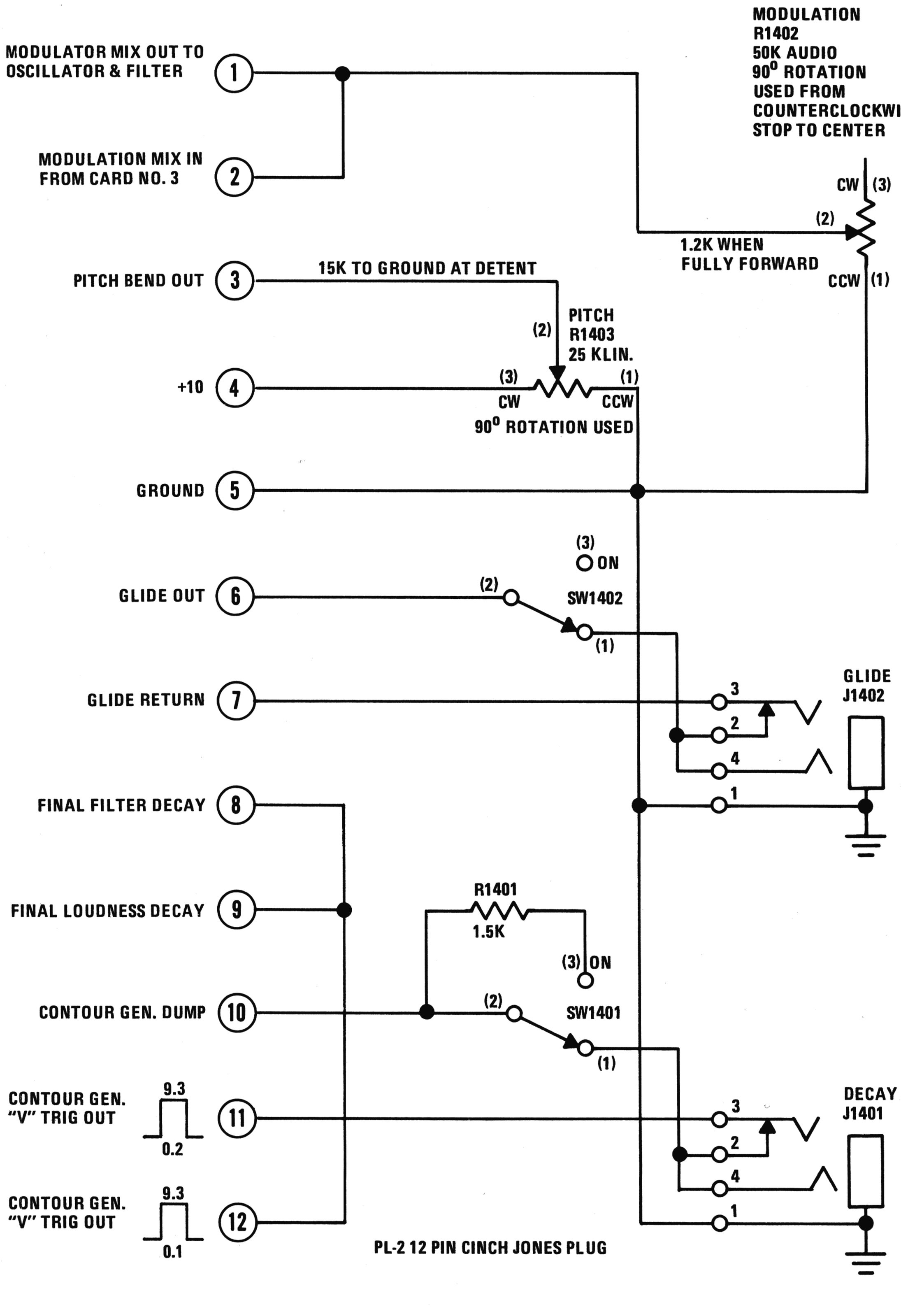

FIGURE 9-12 LEFT HAND CONTROLLER SCHEMATIC DIAGRAM

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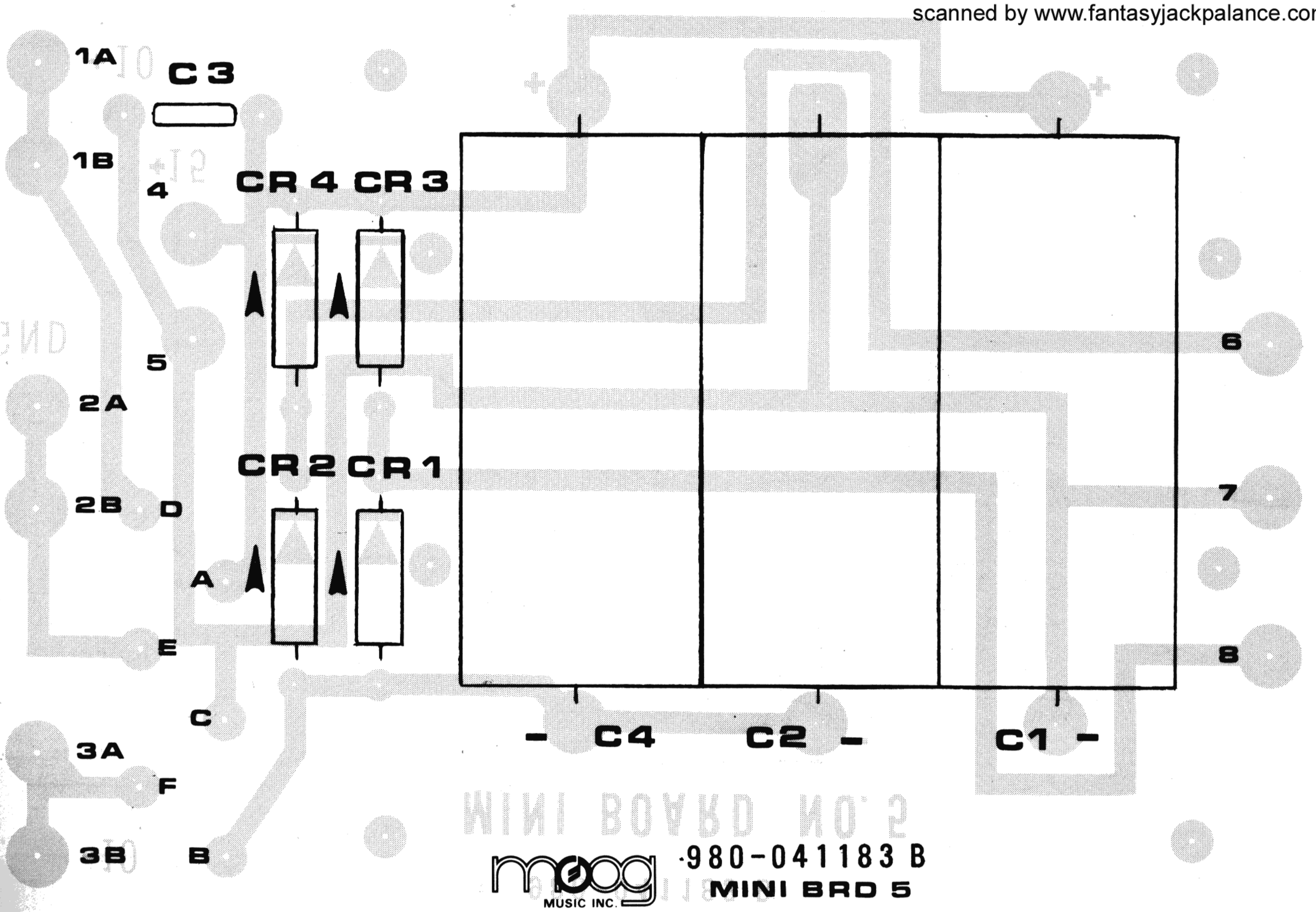

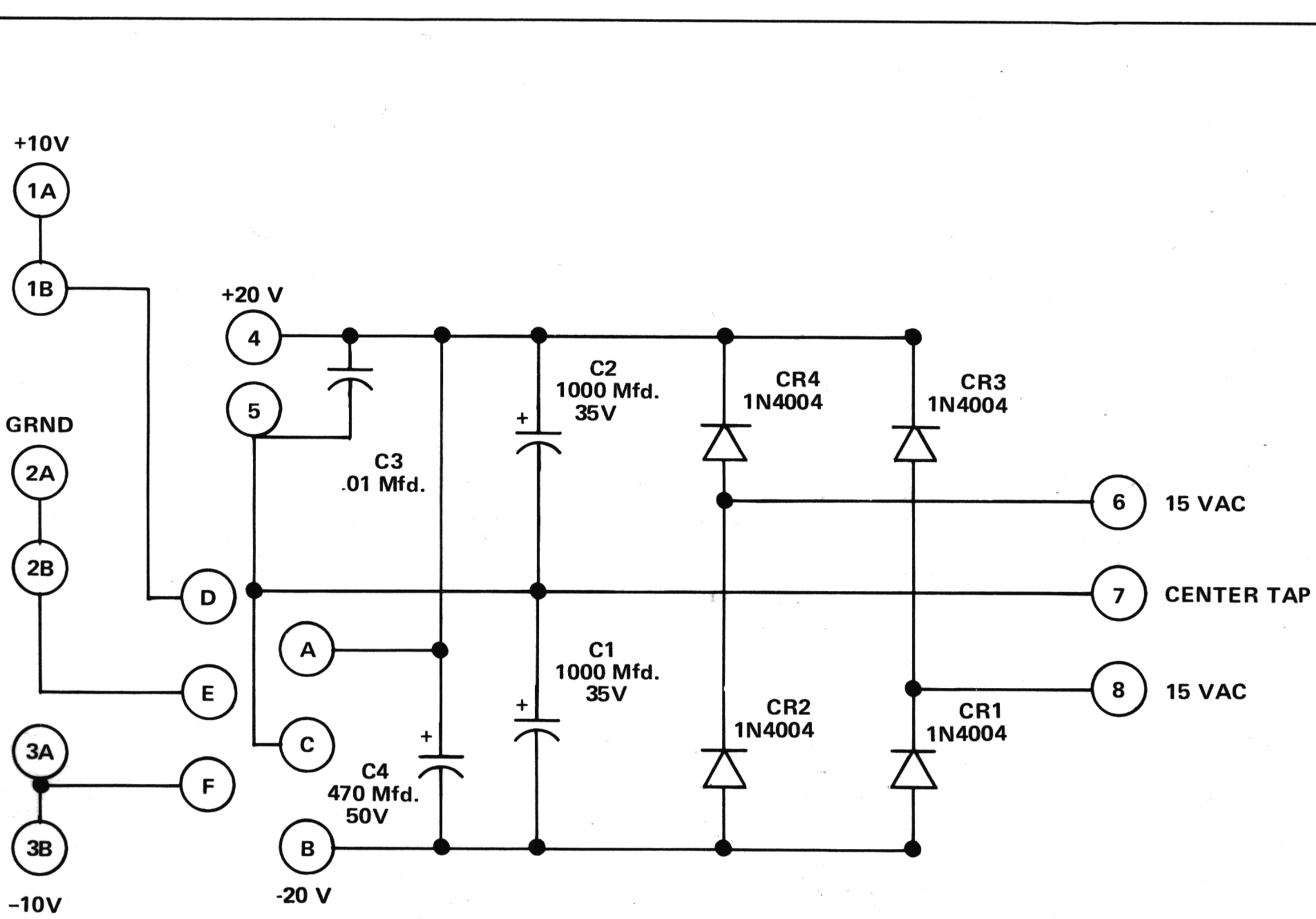

FIGURE 9-13 RECTIFIER PRINTED CIRCUIT BOARD NO. 5 SCHEMATIC DIAGRAM AND BOARD ASSEMBLY

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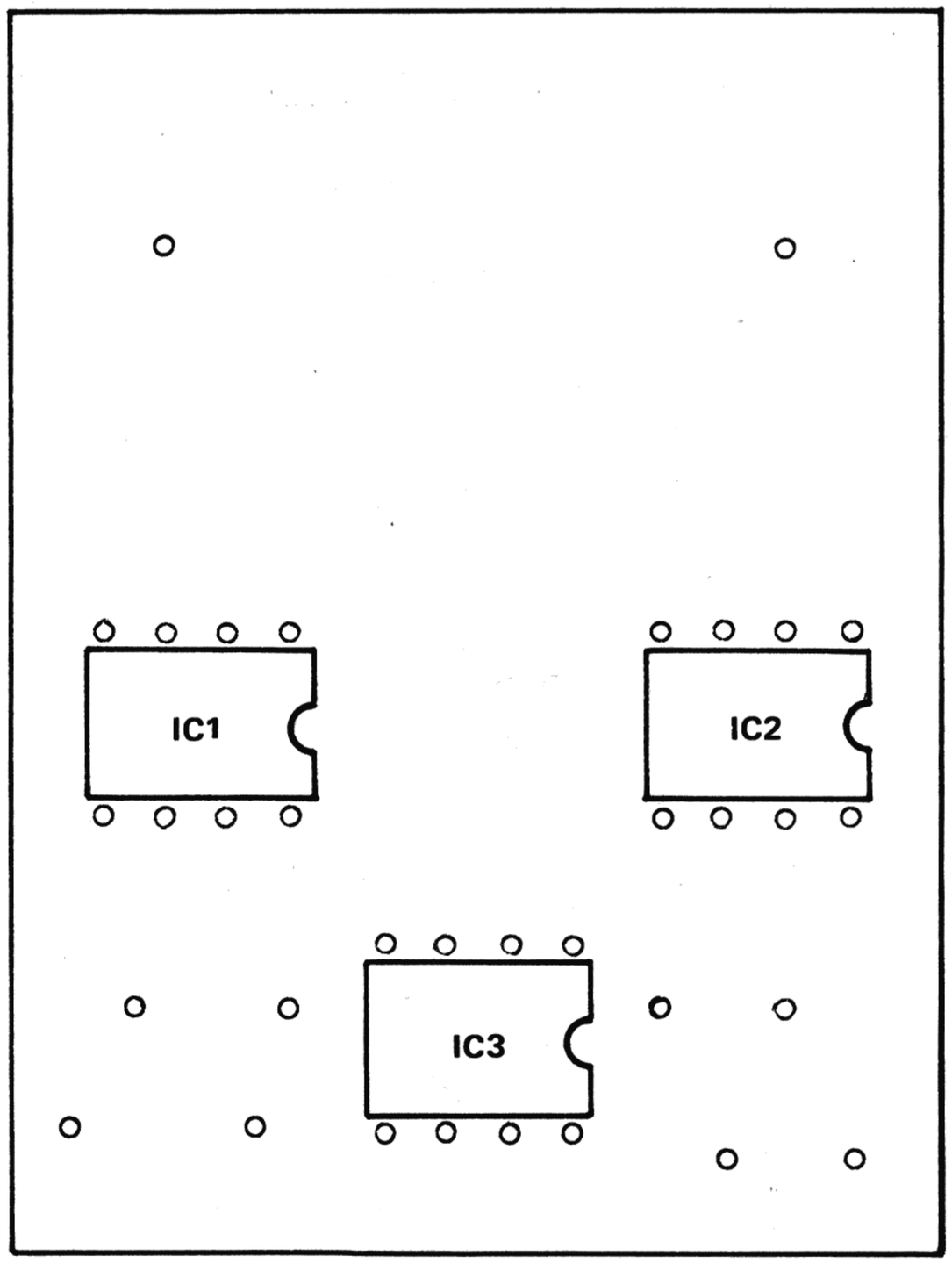

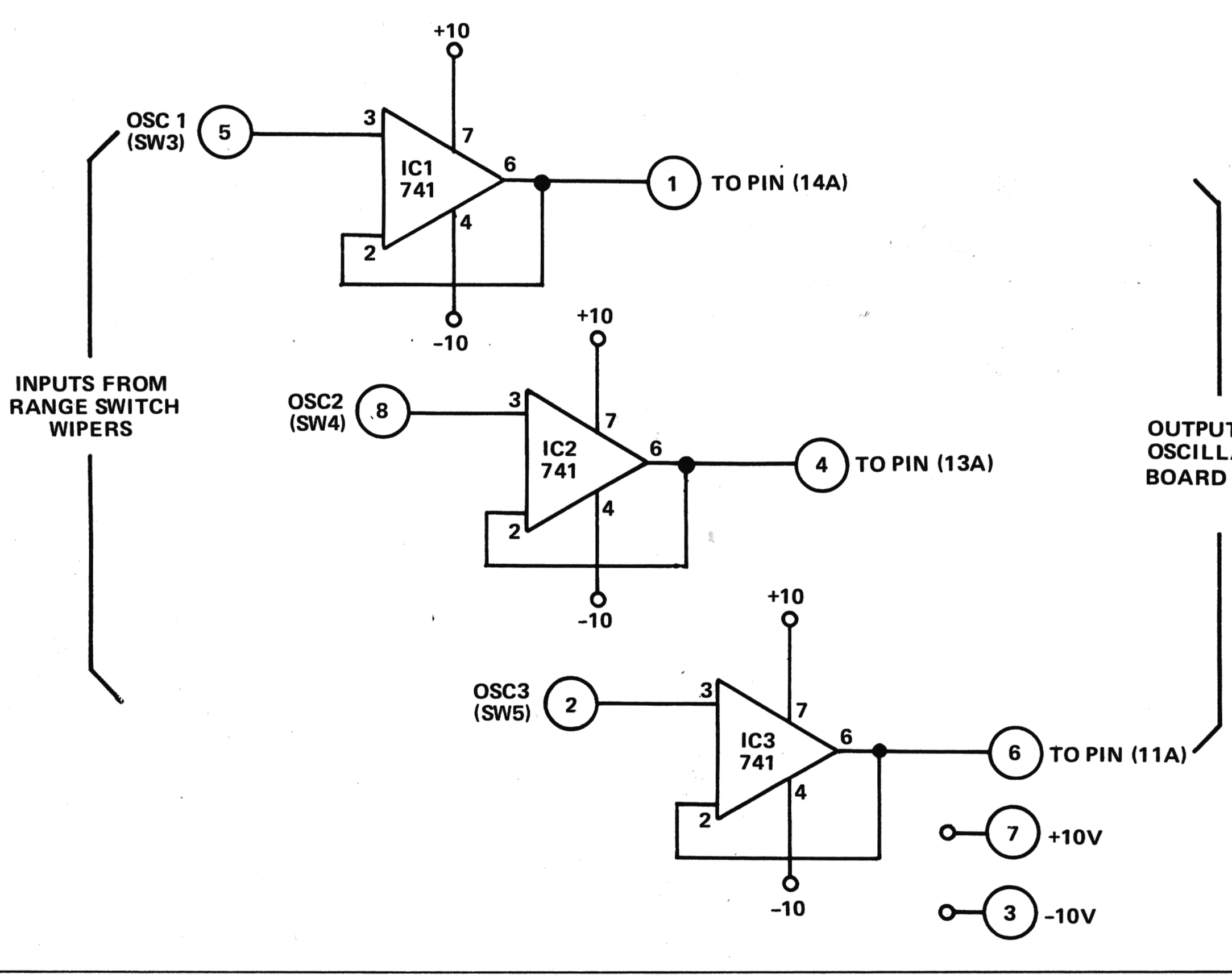

FIGURE 9-14 OCTAVE BUFFER BOARD NO. 6 SCHEMATIC DIAGRAM AND BOARD ASSEMBLY

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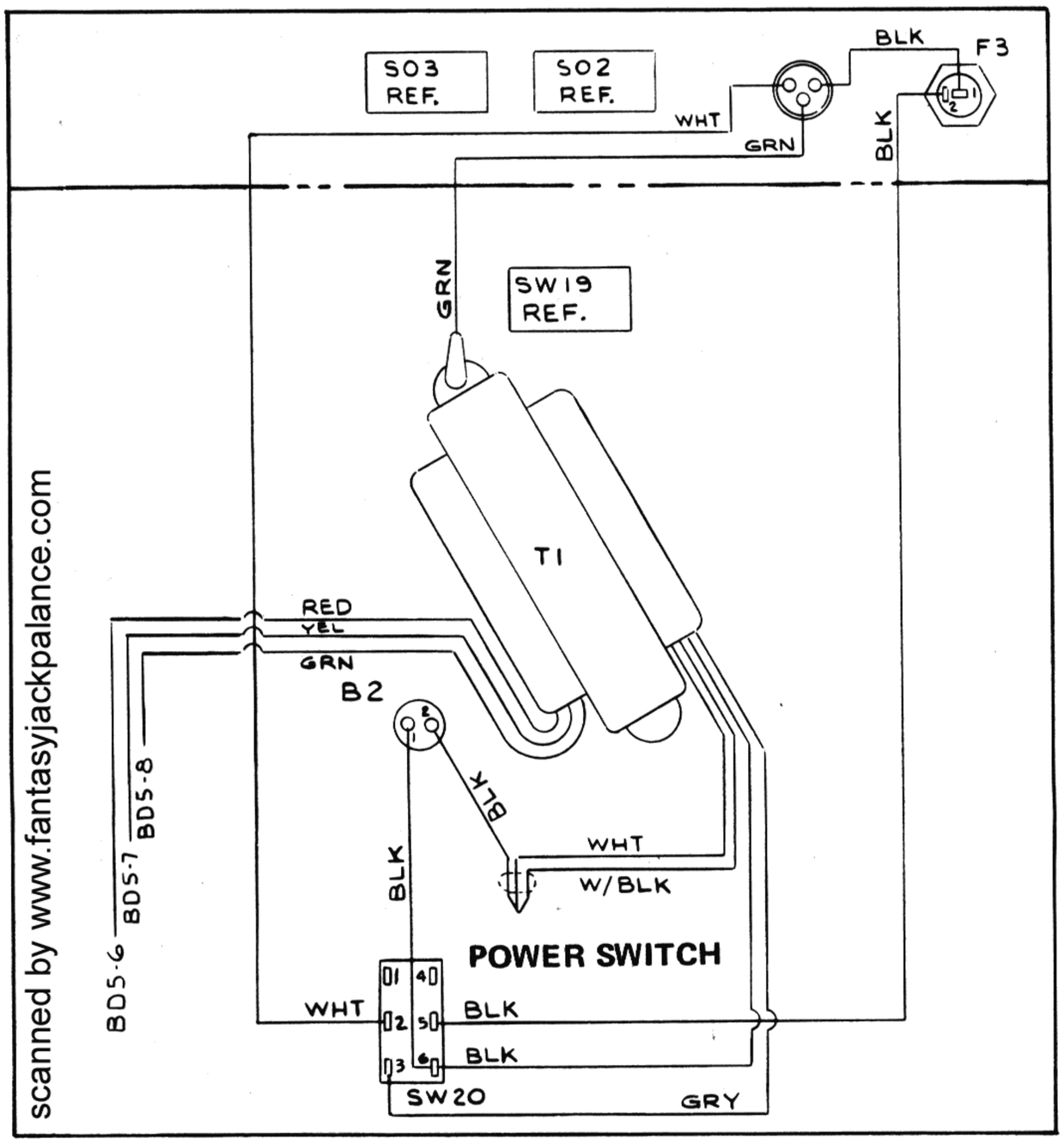
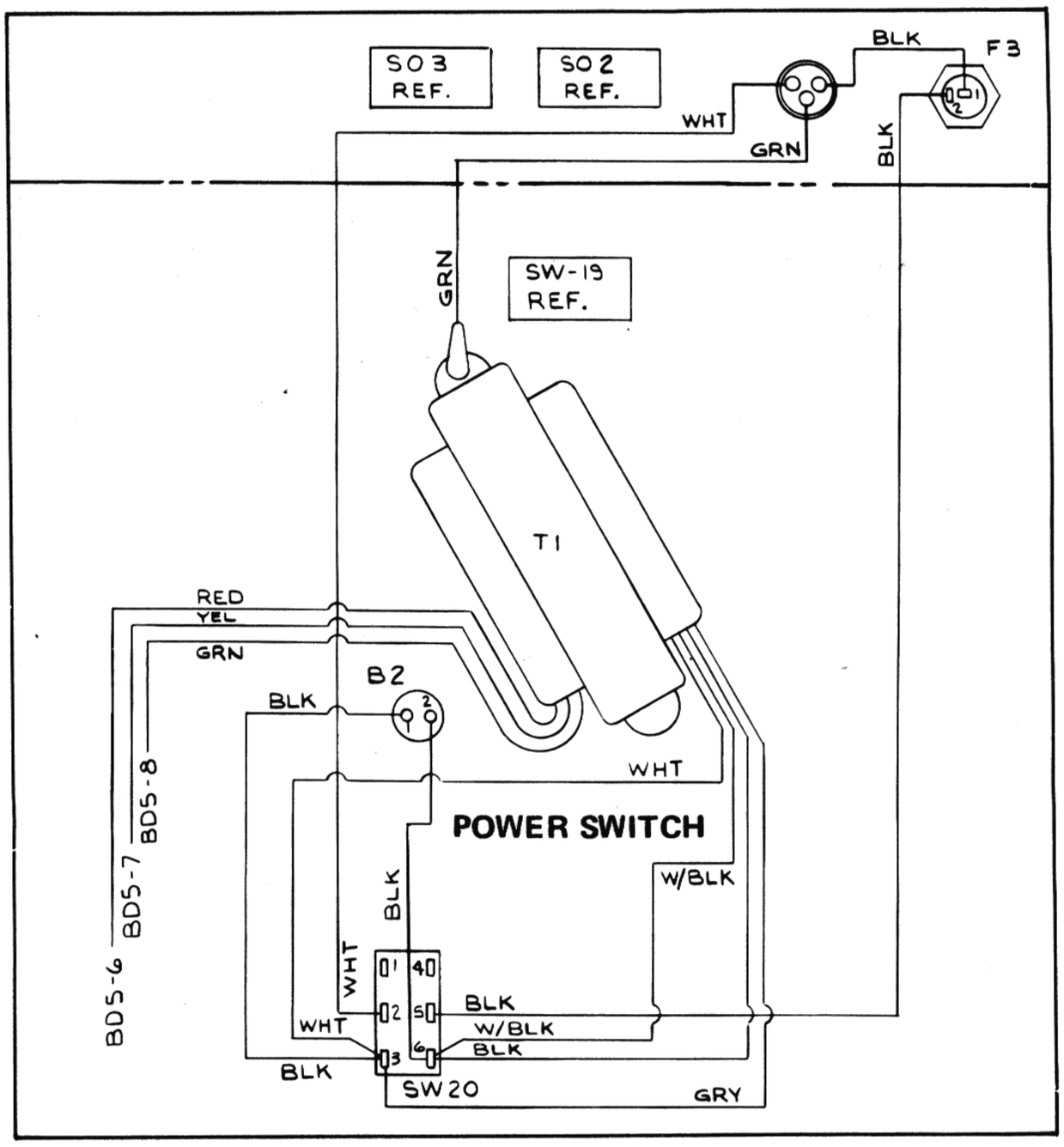
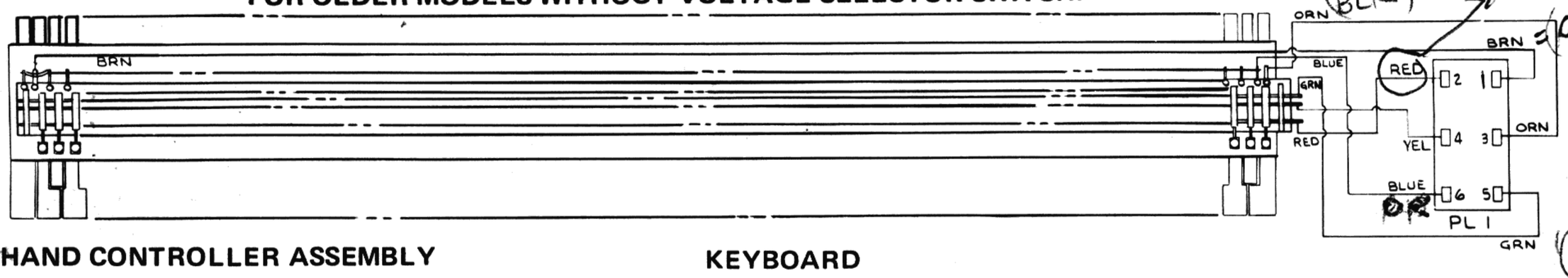


TRANSFORMER WIRING FOR 230V UNIT

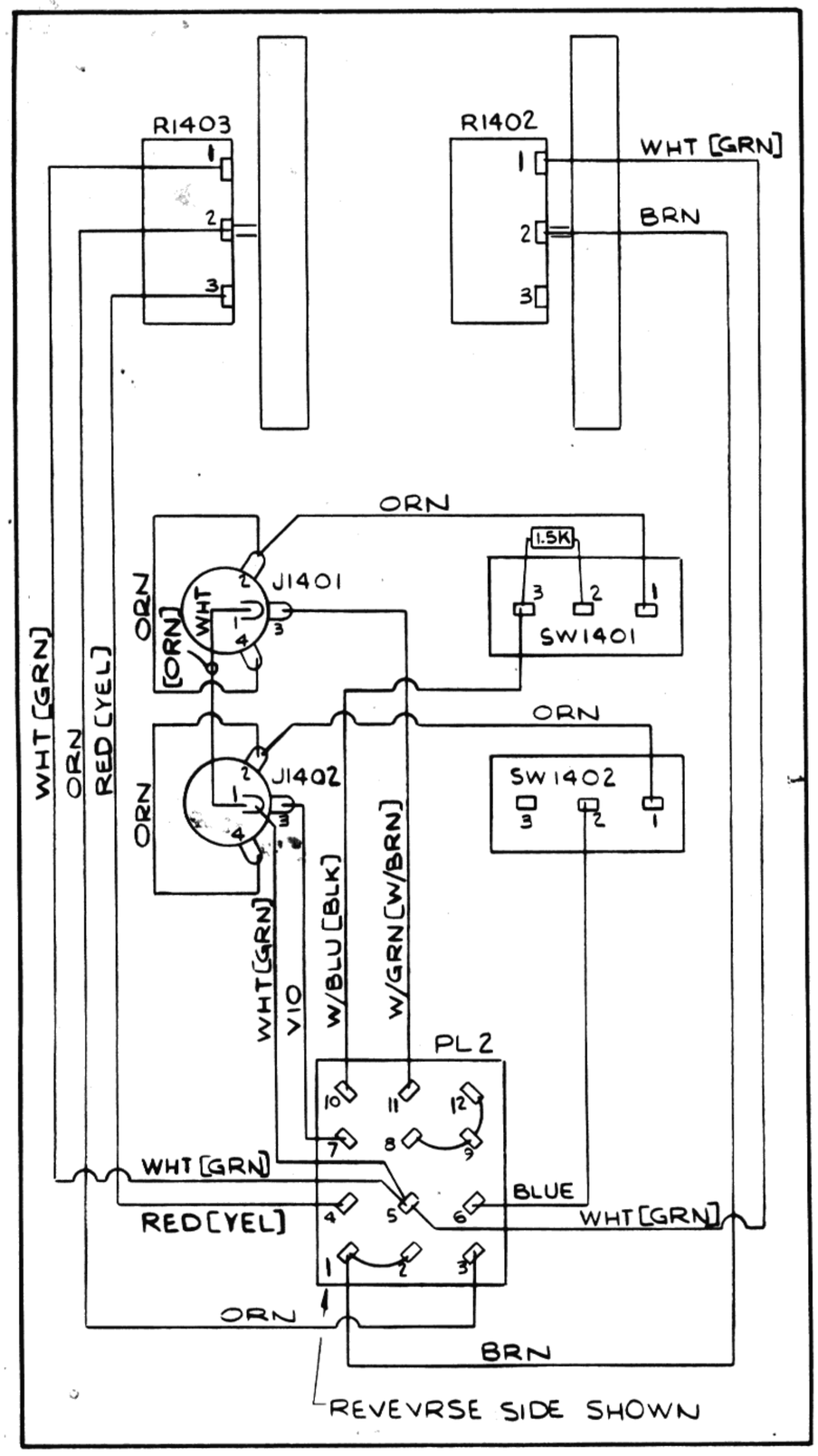


TRANSFORMER WIRING FOR 115V UNIT

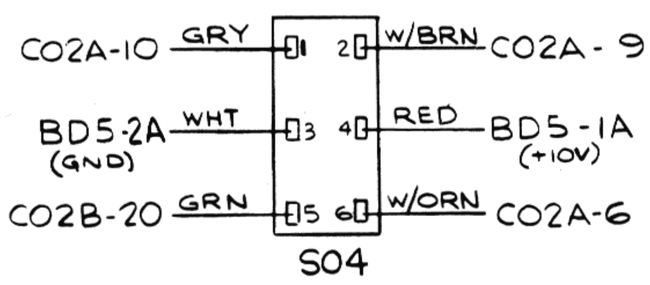
FOR OLDER MODELS WITHOUT VOLTAGE SELECTOR SWITCH.



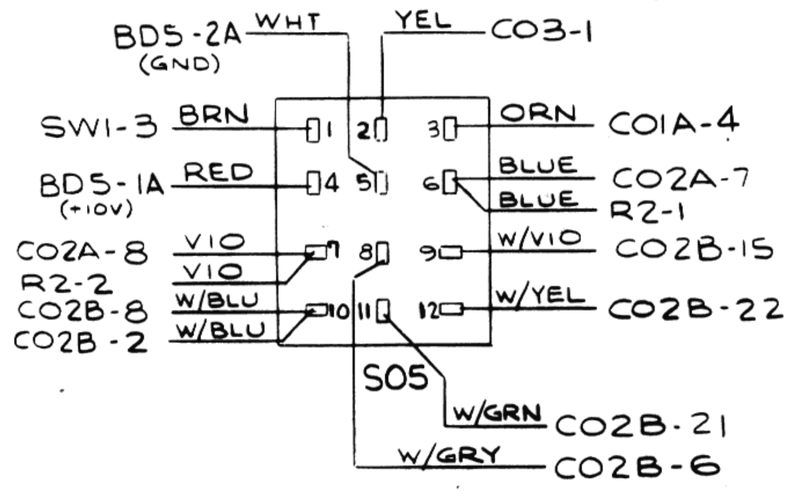
LEFT HAND CONTROLLER ASSEMBLY



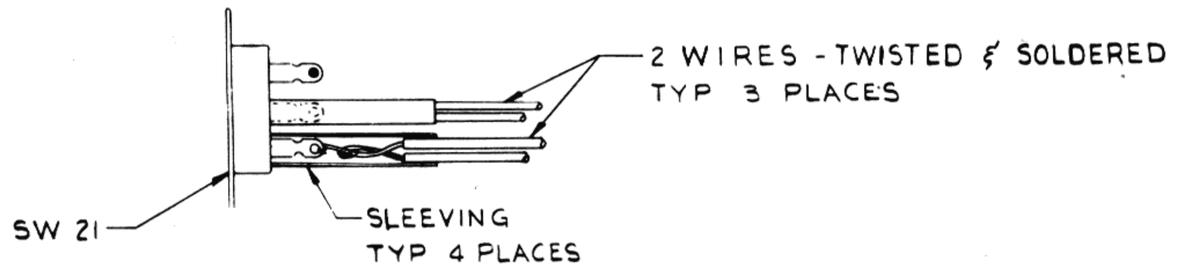
KEYBOARD



TO PL 1 KEYBOARD



TO PL 2 L. H. CONTROLLER



NOTES:

1. **ALL WIRES ARE TO BE 24 AWG UNLESS OTHERWISE SPECIFIED.**
2. **ALL WIRE AND RESISTOR LEADS NOT COLOR CODED ARE TO BE LEFT BARE.**
3. **ALL CODED RESISTOR LEADS TO HAVE 20 GAUGE TEFLON SLEEVING.**
4. **ALL OLD WIRE COLORS ARE IN BRACKETS. WHT (RED).**
5. **WHEN BOARD 6 IS NOT IN THE UNIT –**
   - **A) WIRE FROM CO1A-14 TO SW3-13**
     WIRE FROM CO1A-13 TO SW4-13
     WIRE FROM CO1A-11 TO SW5-13
   - **B) RESISTORS ON SW3 CHANGE FROM 1K TO 10 OHMS, FROM 4.75K TO 47 OHMS**

FIGURE 9-15 LEFT HAND CONTROLLER ASSEMBLY AND TRANSFORMER WIRING

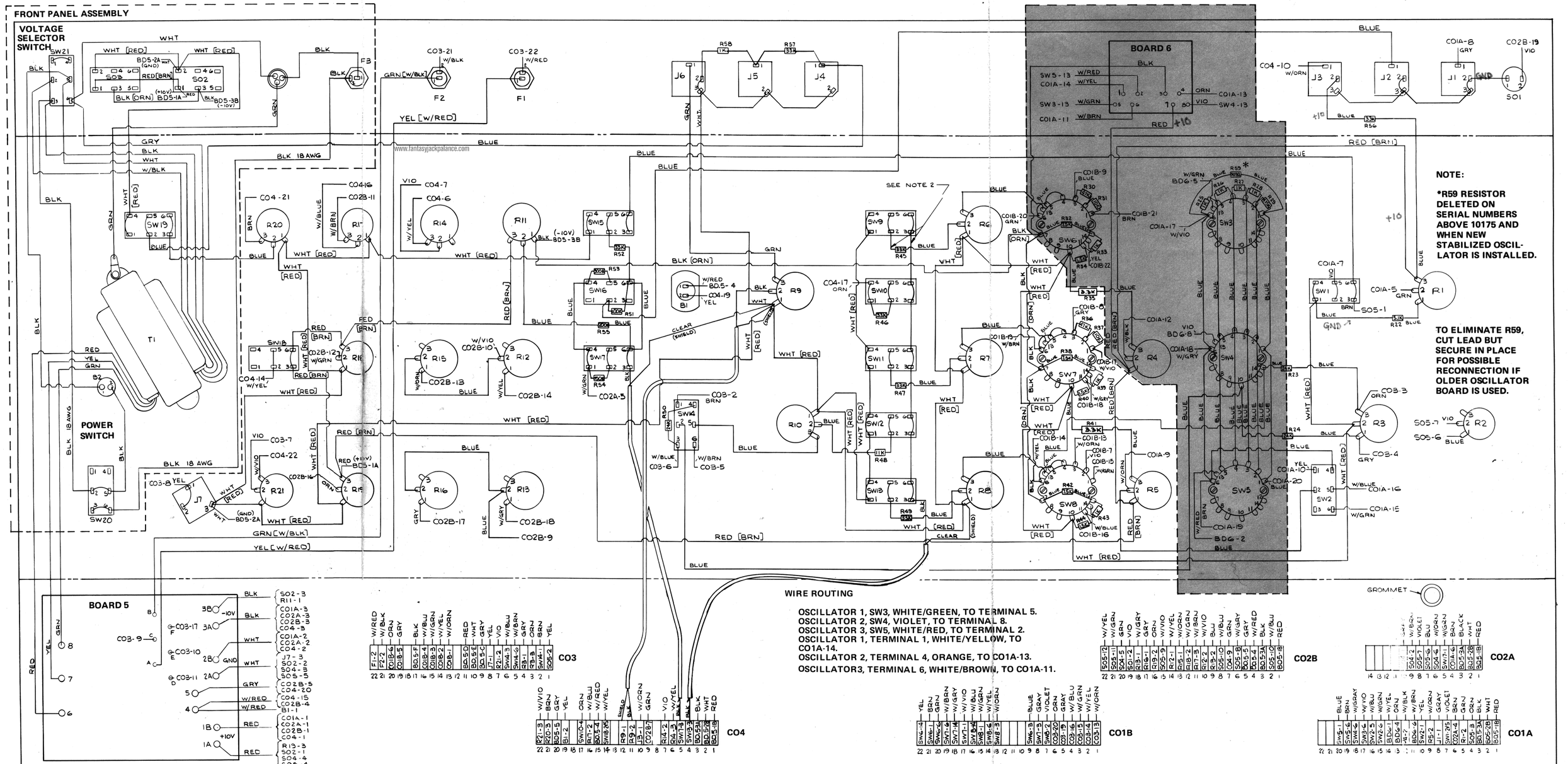


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FIGURE 9-16 FRONT PANEL ASSEMBLY WIRING DIAGRAM

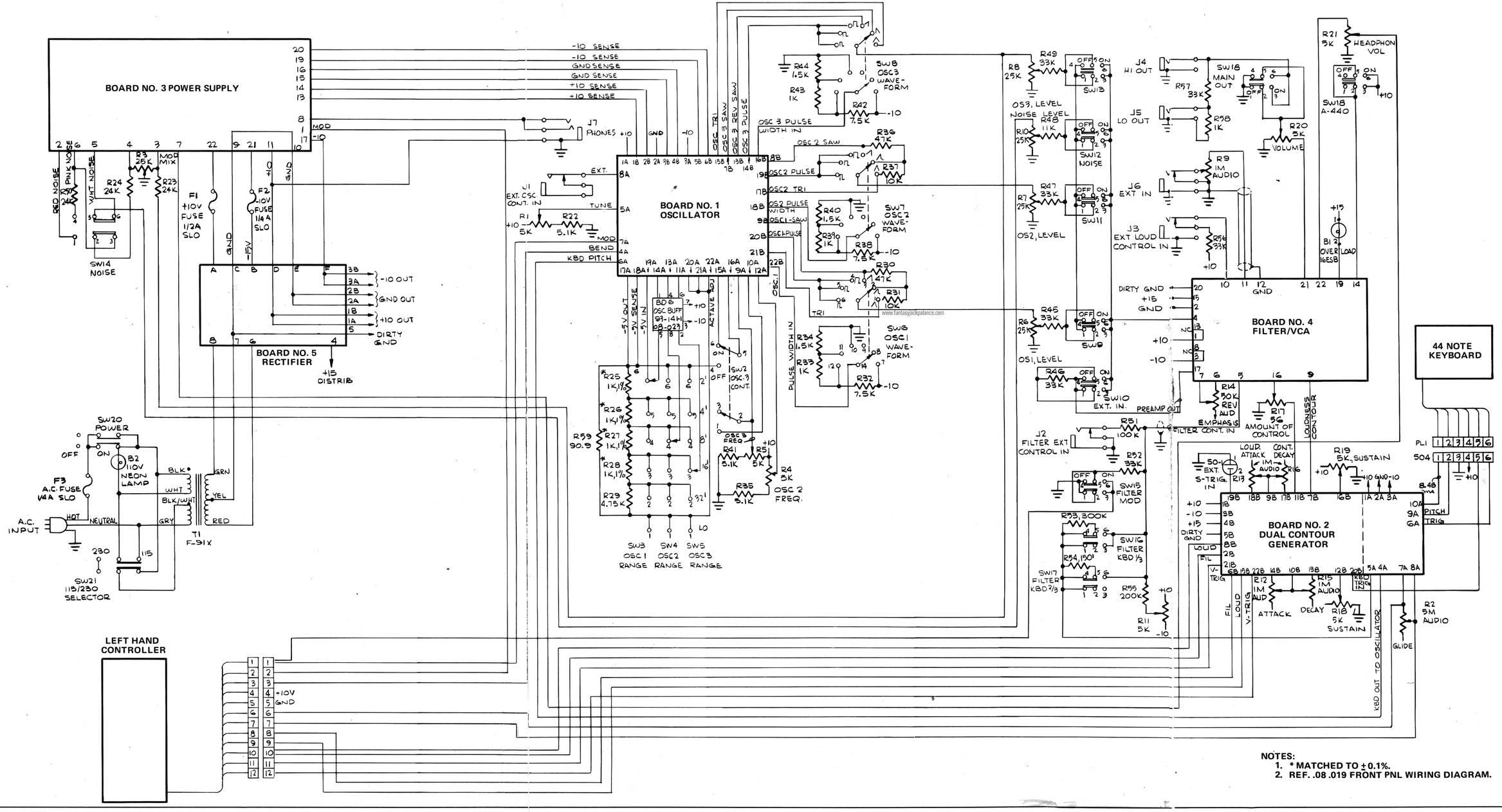

FIGURE 9-17 INTERCONNECTING WIRING DIAGRAM

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