





BOARDS #2 & #7

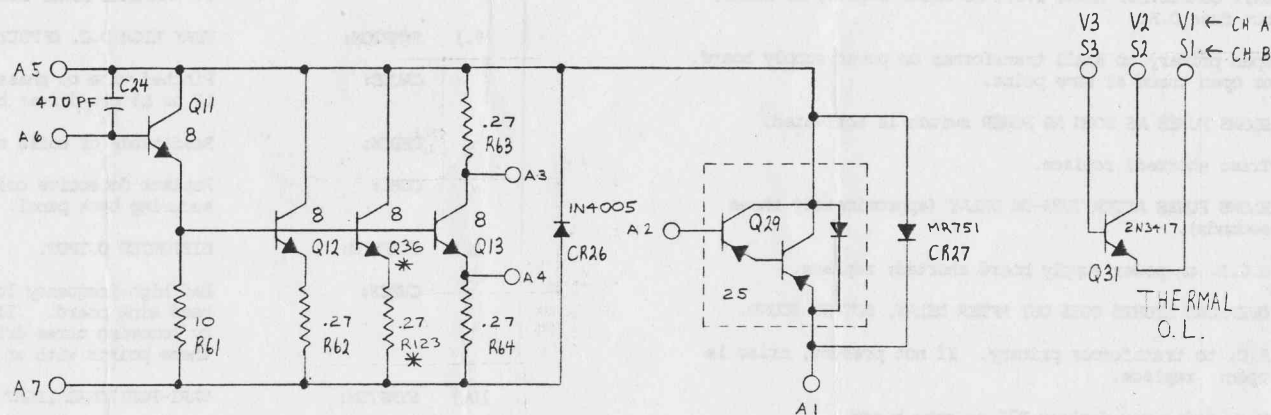
NOTE:

Q12,13&36 (#8)= 2SD424

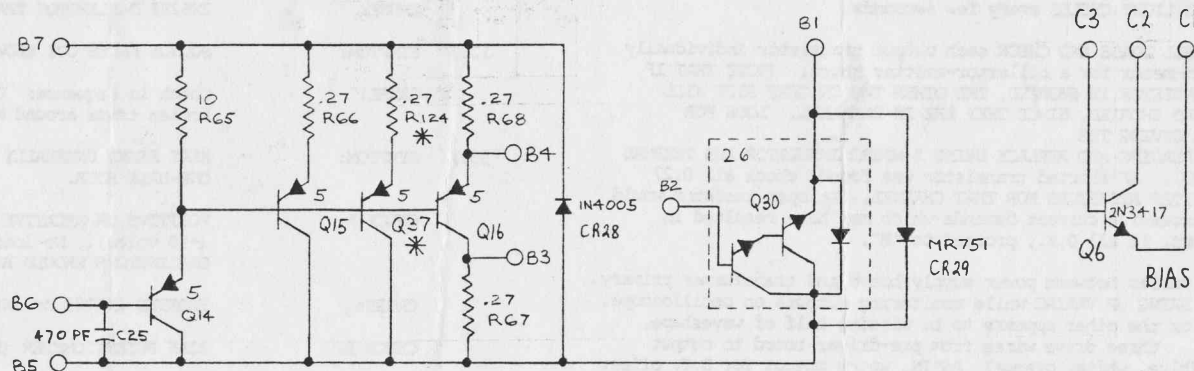
Q15,16&37 (#5)= 2SB554

Q29 (#25) = 2N6285

Q30 (#26) = 2N6282



BOARDS #3 & #8



2N3417  
TOP VIEW



BOARD NOS 2 & 7 (+), 3 & 8 (-)

NOTES:

① RESISTANCE IN OHMS, CAPACITANCE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.

② TRANSISTORS #8, #25, #26 MOUNTED TO REAR HEAT SINKS. #25 AND #26 ARE POWER DARLINGTONS, 2N3417 MOUNTED IN HEAT SINK DRILLINGS.

SOUNDCRAFTSMEN

SCALE: — APPROVED BY: *[Signature]* DRAWN BY: J.H.  
DATE: 5-20-80 REVISED 6-27-84

SCHEMATIC: OUTPUT BOARDS

H5002

DRAWING NUMBER  
1750

\*MODELS A5001, A5002 DO NOT HAVE Q36, Q37, R123, AND R124 STUFFED

MODELS: MA5002A, A5002, A5001, RA6501, RA7502, RA7503, DDR1200

FOR SERIAL #'S WITH PREFIXES: AW, AP, LP, HW, BW, F & CP

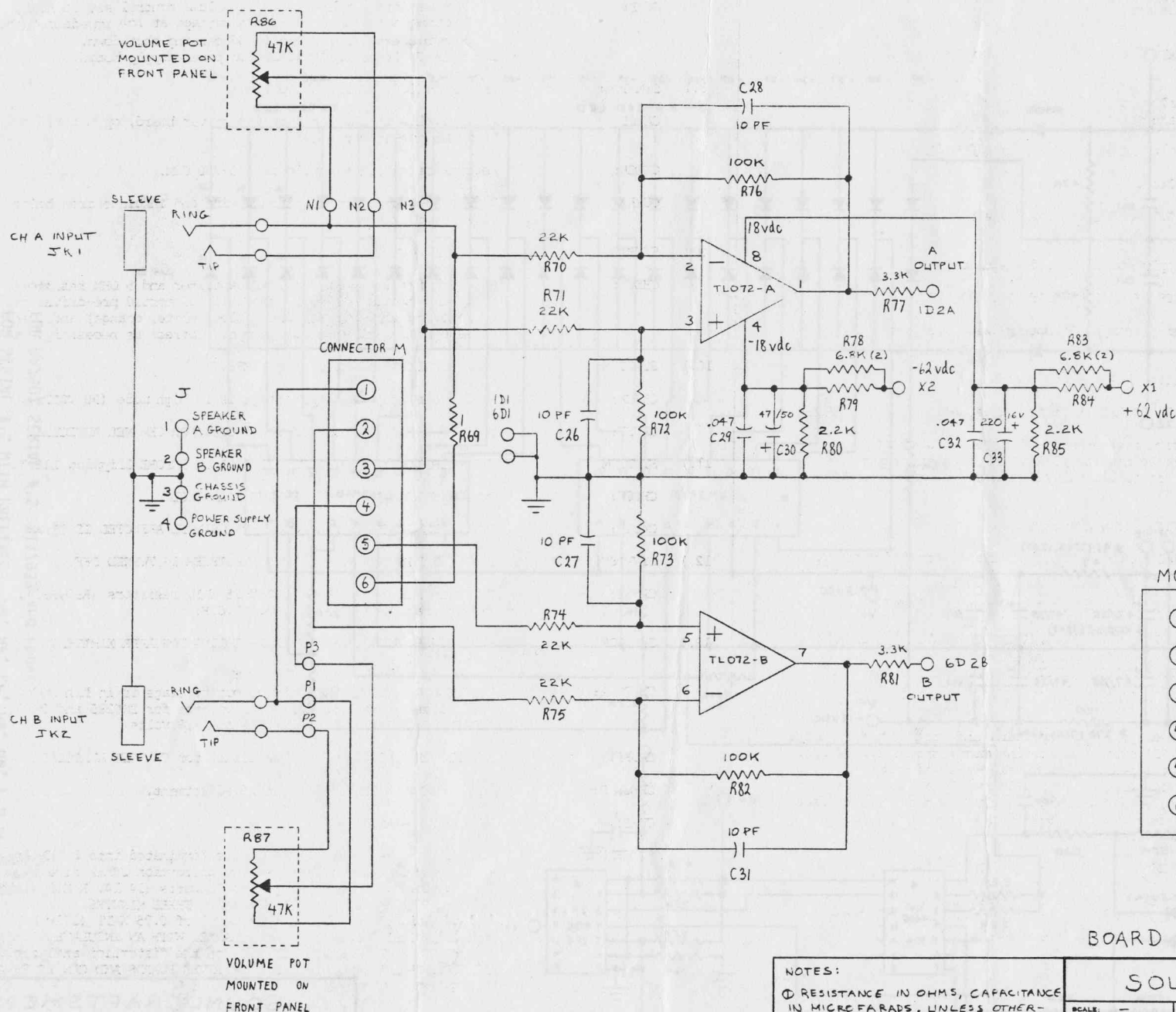
FOR RA7501 SERIAL #'S S147939 and above

# TROUBLESHOOTING HINTS

- 1.) SYMPTOM: UNIT COMPLETELY DEAD, i.e., no meter lights, no sound, but fuse O.K.
- Cause: Open primary to small transformer on power supply board, or open trace at same point.
- 2.) SYMPTOM: BLOWS FUSES AS SOON AS POWER switch is activated.
- CAUSE: Triac shorted; replace.
- 3.) SYMPTOM: BLOWS FUSES AFTER TURN-ON DELAY (approximately three seconds).
- Cause: S.C.R. on power supply board shorted; replace.
- 4.) SYMPTOM: OVERLOAD LIGHTS GOES OUT AFTER DELAY, BUT NO SOUND.
- CHECK: A.C. to transformer primary. If not present, triac is open: replace.
- NOTE: Open triac may destroy R79 on same board.
- SYMPTOM: OVERLOAD LIGHT STAYS ON ALL the time, No sound.
- CHECK: Remove two wires from heat sensing circuit on power supply board (brown and beige next to pink). If overload light goes out, replace one or both 2N3403 transistors in heat sink drillings.
- 6.) SYMPTOM: OVERLOAD LIGHT CYCLES every few seconds.
- Check A: REMOVE ALL LOADS AND CHECK each output transistor individually with ohm-meter for a collector-emitter short. (NOTE THAT IF ONE TRANSISTOR IS SHORTED, THE OTHER TWO ON THAT SIDE WILL ALSO READ SHORTED, SINCE THEY ARE IN PARALLEL. LOOK FOR THE ONE GIVING THE LOWER READING AND REPLACE USING A MICRO INSULATOR AND THERMAL COMPOUND). IF shorted transistor was found, check all 0.27 OHM EMITTER RESISTORS FOR THAT CHANNEL. An open resistor would cause excessive current demands which may have resulted in the short. If all O.K., proceed to "B".
- Check B: Insert variac between power supply board and transformer primary. SLOWLY BRING UP VARIAC while monitoring outputs on oscilloscope. If one or the other appears to be missing half of waveshape, remove three drive wires from pre-driver board to output stage (blue, white, orange). AGAIN, watch output for D.C. offset which would indicate a faulty connection to the heat sink board or output transistors.
- 7.) SYMPTOM: OVERLOAD LIGHT COMES ON, AMP SHUTS DOWN OCCASIONALLY.
- Cause:
1. Amp is working into a very low impedance.
  2. AMP is being tripped off by transients in the A.C. line.
  3. ERRATIC operations of 12V supply regulator.

- CURE:
1. MAY be normal operation, but volume control set to high, putting out double or triple wattage at low impedance, thus drawing excessive current and causing shut down.
  2. REPLACE Zener DIODE (CR26) on power supply board.
- 8.) SYMPTOM: VERY HIGH D.C. OFFSET AT OUTPUT.
- CAUSE: Pinched wire to chassis from pre-driver board, open toroid coil L2 or L3 pre-driver board.
- CHECK: Resistance of coils should be 100-200 OHM.
- CURE: Replace defective coil. pinched wire and insulate area before securing back panel.
- 9.) SYMPTOM: DISTORTED OUTPUT.
- CHECK: Bad high frequency load (0.1MF capacitor and 5 OHM resistor) on head sink board. If O.K. check for distorted pre-driver output by removing three drive wires (blue, white, orange) and check these points with an oscilloscope. Correct as necessary.
- 10.) SYMPTOM: VARI-POROTIONAL LIGHT ON ALL TIMES.
- CHECK: Positive supply to output stage is in high mode (90 VOLTS).
- CAUSE: SHORTED 2N6285 DARLINGTON TRANSISTOR FOR CHANNEL AFFECTED.
- 11.) SYMPTOM: VARI-POROTIONAL LIGHT DOES NOT COME ON BEFORE Clipping LIGHT.
- CHECK: OUTPUT CLIPS EARLY ON POSITIVE HALF-CYCLE.
- CAUSE: 2N6285 DARLINGTON TRANSISTOR FOR CHANNEL AFFECTED IS OPEN.
- 12.) SYMPTOM: SOUNDS FADES OUT SLOWLY WHEN AMPLIFIER IS TURNED OFF.
- CAUSE: Check in sequence: OPEN 1 OHM 15 WATT resistors (R90,R91), broken trace around MR751, bad S.C.R.
- 13.) SYMPTOM: HEAT SINKS UNUSUALLY HOT AFTER IDLING FOR APPROXIMATELY ONE-HALF HOUR.
- CHECK A: POSITIVE OR NEGATIVE supply to output stage is in hih mode (+90 volts). No-load collector voltage for 2N6285 and 2N6285 DARLINGTONS SHOULD BE +62 volts and -62 volts.
- CAUSE: SHORTED 2N6285 or 2N6262 Transistor for CHANNEL AFFECTED.
- CHECK B: BIAS POTENTIOMETER (R15) out of adjustment.
- CURE: RE-ADJUST BIAS.
- PROCEDURE: With top plate removed and outputs terminated into 8 OHM 250 Watt resistive loads, apply a low distortion 20KHZ sine wave to the outputs. Adjust output to 25 watts (14,14V R.M.S..) AND ALLOW AMPLIFIER TO WARM UP FOR ABOUT THREE MINUTES. Reduce signal to a level to a level of 0.25 WATT (141v R.M.S.) AND ADJUST BIAS POTS FOR EACH CHANNEL WITH AN INSULATED SCREW-DRIVER TO GIVE A READING OF 0.1% on the distortion analyzer. THE POTS ARE LOCATED ON THE PRE-DRIVER BOARDS AND CAN BE REACHED FROM THE TOP OF THE UNIT.





BOARD NO. 4

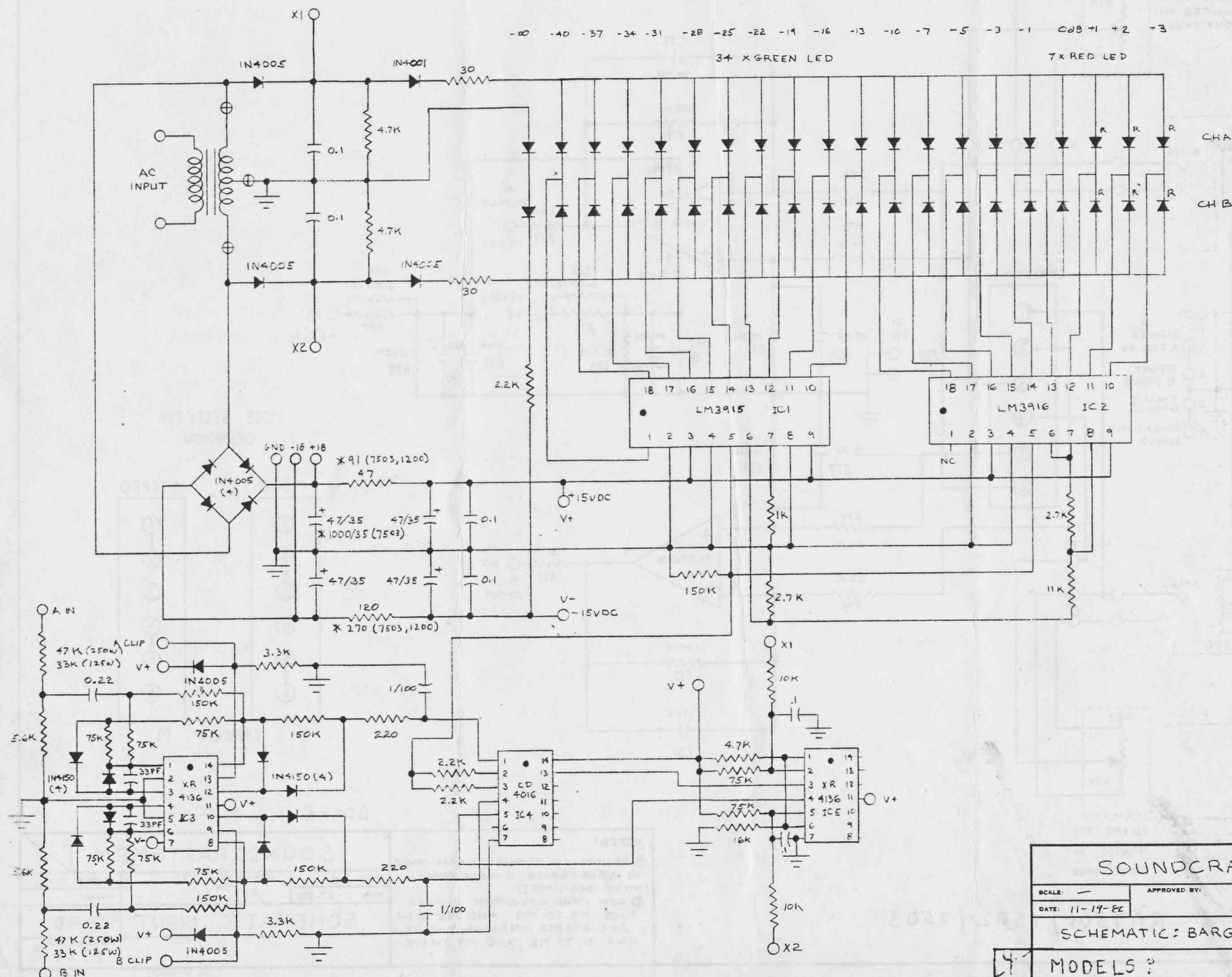
NOTES:

- ① RESISTANCE IN OHMS, CAPACITANCE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED.
- ② FOR MONO OPERATION JUMPER PINS M2 TO M3, AND M5 TO M6. FOR STEREO OPERATION, JUMPER PINS M1 TO M2, AND M4 TO M5.

SOUNDCRAFTSMEN

SCALE: —	APPROVED BY: <i>[Signature]</i>	DRAWN BY: J.M.
DATE: 3-27-80	REVISED	
SCHEMATIC: INPUT BOARD		
DRAWING NUMBER		1751

RA7501/7502/7503

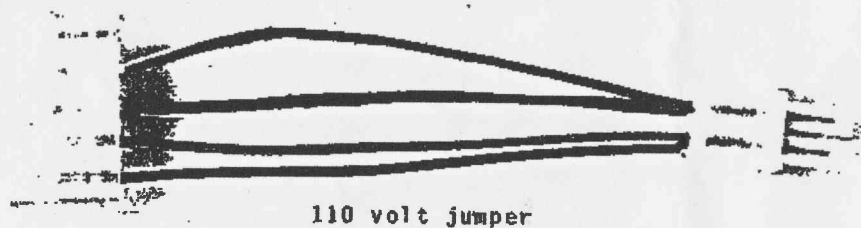


MODELS: MA5002A, A5002,  
 FOR SERIAL #'S WITH PREFIXES: AM, AP, LP, HM, BW, F & CP  
 FOR RA7501 SERIAL #'S S147939 and above.

RA7502, RA7503, EER1200

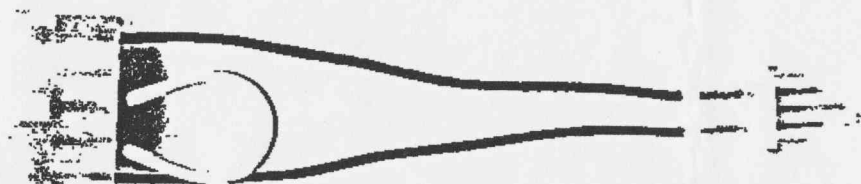
SOUNDCRAFTSMEN		
SCALE: —	APPROVED BY:	DRAWN BY: SH
DATE: 11-19-82		REVISED: 6-27-84
SCHEMATIC: BARGRAPH INDICATOR		
41	MODELS:	DRAWING NUMBER 1752

VERY RECENT A5001 and A5002 AMPLIFIERS USE THIS NEW HARNESS ASSEMBLY



110 volt jumper

IF NOT INCLUDED, THE CORRECT JUMPER MAY BE ORDERED FROM SOUNDCRAFTSMEN



240 volt jumper

Simply remove 240 volt jumper and install 110 volt jumper.

IMPORTANT NOTE: Items 4 and 5 must also be completed -  
See attached sheet.

Kit - PC3

# Soundcraftsmen

2200 So. Hitchcock, Santa Ana, California 92706, U.S.A./Telephone (714) 556-6191/U.S. Telex/TWX 910 596 2524 • International Telex: 910 595 2524/Answer-back Code 590CRAFTSMEN SMA

## VOLTAGE CONVERSION PROCEDURE AMPLIFIER MODELS A5002 and A5001

This procedure should be completed by a service technician.

1. Remove jumper A from power transformer primary.
2. Remove the other male connector from power supply socket.
3. Insert adapter B as shown in diagram below. Adapter B may be ordered from the address above. There is no charge for this adapter.
4. Move wire C from third pin on power supply board to fourth pin.
5. Connect another jumper wire between the first and third pins.

