

JVC

SERVICE MANUAL

STEREO INTEGRATED AMPLIFIER

MODEL A-K300/A-K300B

Model	Color Version
A-K300	Silver
A-K300B	Black



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Safety Precautions

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.
For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after reassembling.

5. Leakage current check
(Safety for electrical shock hazard)
After reassembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
Do not use a line isolation transformer during this check.
 - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
 - Alternate check method.
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).

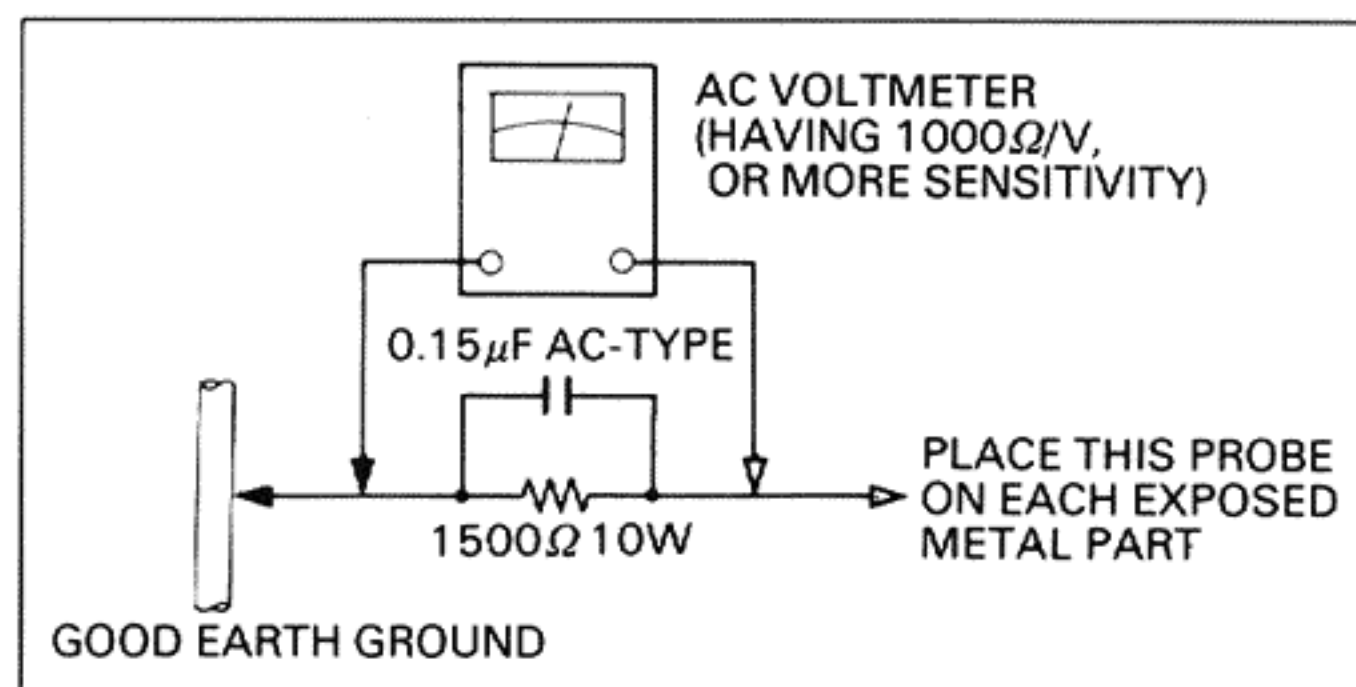


Fig. 1

Service Precautions

1. Before repairing, be sure to discharge electric capacitors across a resistor of about 100 ohms/1 watt.

1. Specifications

CIRCUITRY

ALLOVER CHARACTERISTICS

Output power (AUX IN SP. OUT)

U. S. A. & Canada 65W

Other countries 58W

1 kHz : 55 watts RMS per channel min.
(8 ohms, 0.005% total harmonic distortion measured by JVC Audio Analyze System)

40 Hz – 20 kHz : 65 watts RMS per channel min.
(both channels driven into 8 ohms from 40 Hz to 20 kHz, with no more than 0.2% total harmonic distortion.)
(U. S. A. & Canada only)

Total harmonic distortion

AUX IN SP. OUT : 0.2% (40 Hz – 20 kHz, 8 ohms) at 65 watts

Power band width

(AUX IN SP. OUT) : 10 Hz – 30 kHz ('66 IHF, 0.2%, 8 ohms both channels driven)

Frequency characteristic : 10 Hz – 100 kHz

+0.5, –3 dB (8 ohms)

Input terminals

Input sensitivity/impedance (1 kHz)

PHONO : 2.5 mV/47 kohms

DAD, TUNER,

AUX, TAPE : 150 mV/40 kohms

Signal-to-noise ratio

PHONO : 70 dB } ('66 IHF)

DAD, TUNER,

AUX, TAPE : 96 dB }

'66 IHF

PHONO : 79 dB ('78 IHF, Rec Out)

DAD TUNER,

AUX, TAPE

: 73 dB ('78 IHF, Speaker Out)

Tone controls

: TREBLE: ± 8 dB (10 kHz)

BASS: ± 8 dB (100 Hz)

Loudness controls

: 100 Hz: +6 dB/10 kHz: +4 dB
(at VOLUME –30 dB)

EQUALIZER

PHONO overload : 100 mV

PHONO RIAA deviation : ± 1 dB (40 Hz – 15 kHz)

GENERAL

Power source :

Areas	Line Voltage & Frequency	Power consumption
U.S.A. & Canada	AC 120V ~, 60 Hz	210 watts 270 VA
Europe	AC 220V ~, 50 Hz	150 watts
U.K. & Australia	AC 240V ~, 50Hz	150 watts
U.S. Military Market & Other Countries	AC 110/120/220/240V~ Selectable 50/60 Hz	150 watts

Dimensions and Weight :

	Dimensions (cm)		Weight
	Width	Depth	(kg/lbs)
Height 11.7 (4-5/8")	43.5 (17-1/8")	30.4 (11-15/16")	5.7/12.5

Design and specifications subject to change without notice.

2. Removal and Reassembly Procedures

2-(1) Metal Cover Section

1. Remove 6 screws securing the metal cover (4 on each side of the cover and 2 on the rear).
2. Pull out the metal cover backwards.

2-(2) Front Panel Section

1. Pull out the plastic rivet bushes by pressing it from the bottom plate. (Fig. 2)
2. Remove 3 screws from the bottom plate.

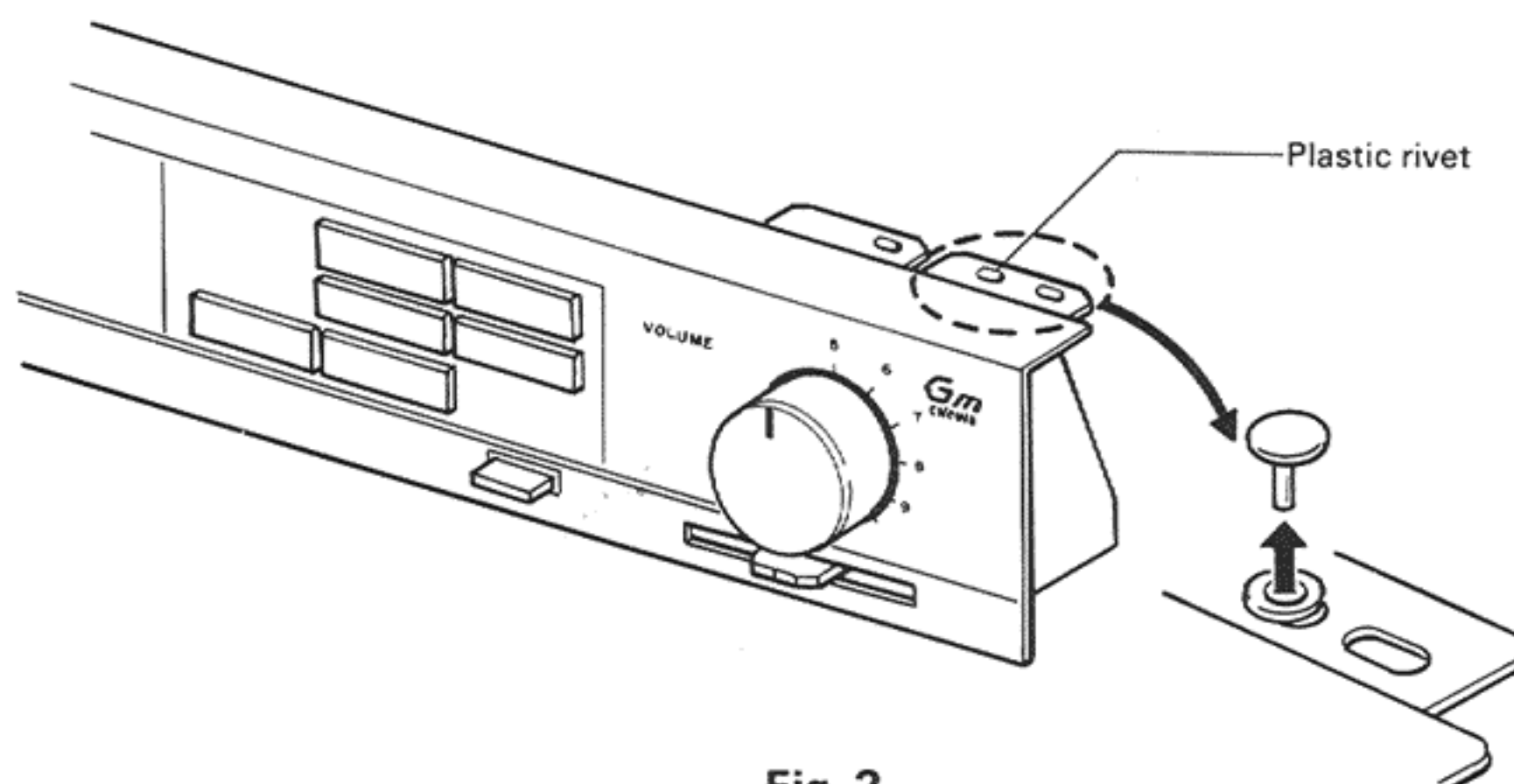


Fig. 2

2-(3) Level Indicator P. C. Board Section

1. Remove the metal cover. (Refer to step 1. of Metal Cover Section).
2. Remove the plastic rivet bushes from the P. C. Board and take out P. C. Board. (Fig. 3)

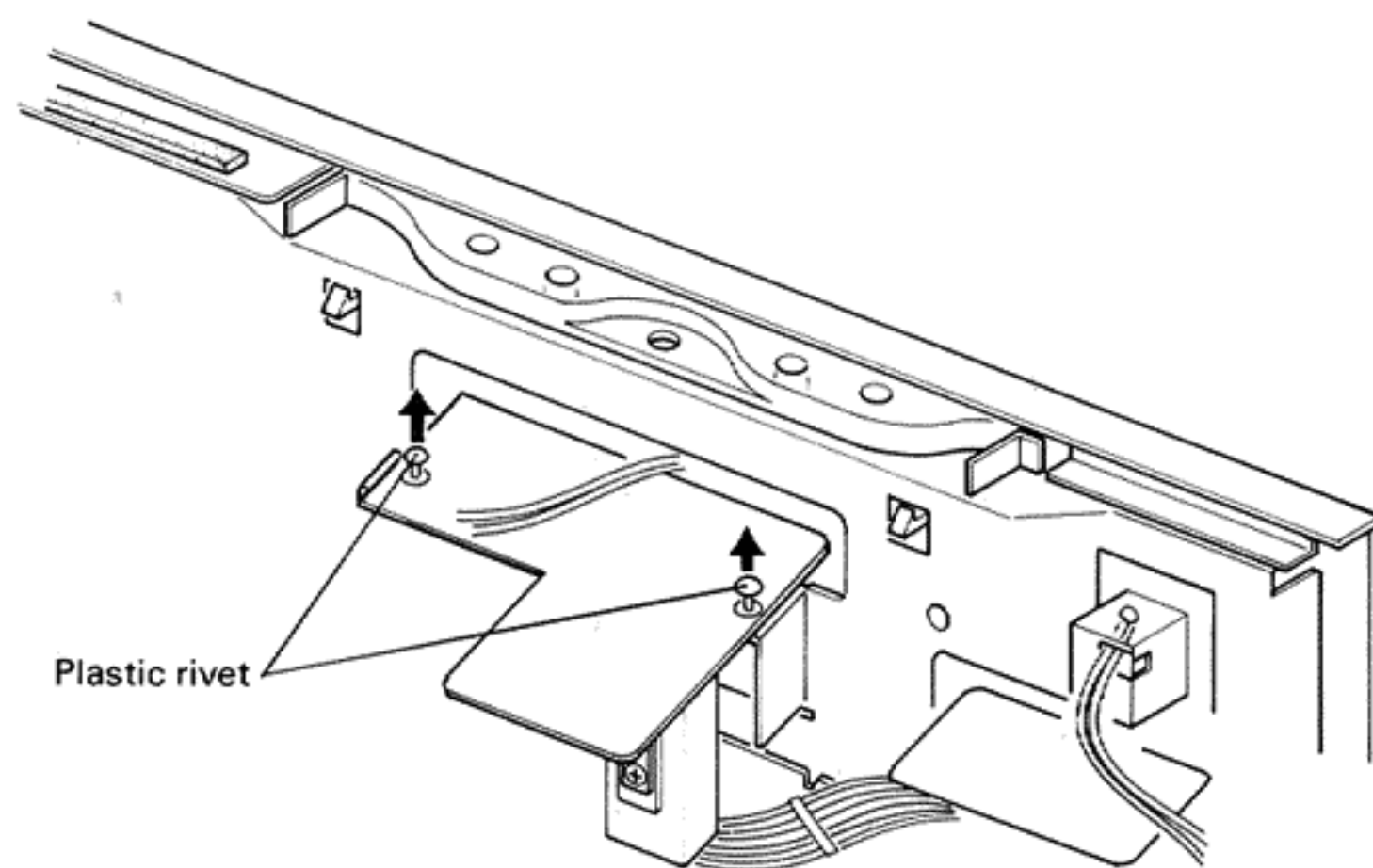


Fig. 3

2-(4) Power Transistor Section

1. Remove the metal cover. (Refer to step 1. of Metal Cover Section.)
2. Remove 2 screws from each main P. C. Board bracket.
3. Pull out the main P. C. Board in the direction of the arrow shown in Fig. 4, taking care that the board does not contact P. C. Board.

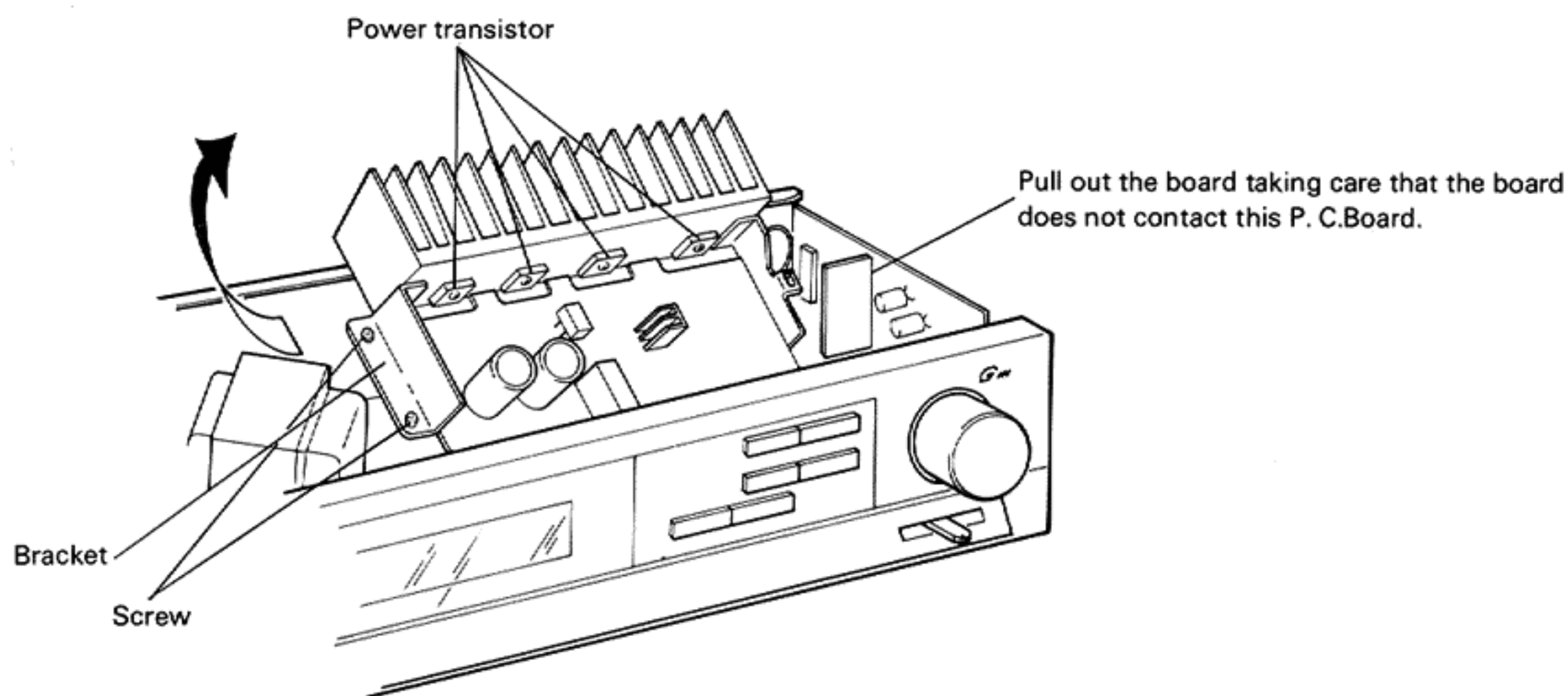


Fig. 4

3. Adjustment Procedures

3-(1) Power Level Indicator Adjustment

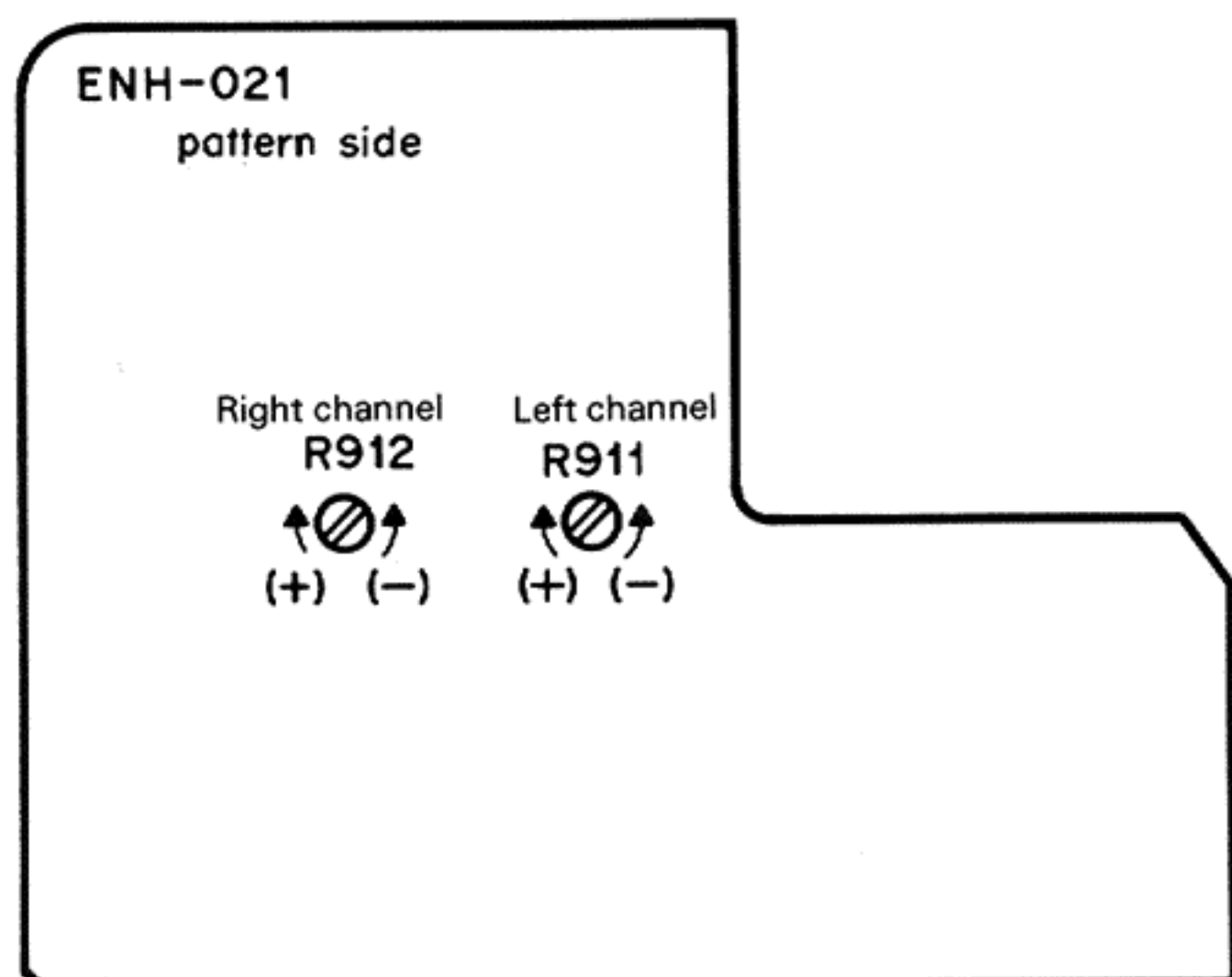


Fig. 5

Power Level Indicator Adjustment

1. Turn the semi-fixed resistors (R911, R912) counter-clockwise fully, before switching the power ON.
2. With the output voltage at 14.1V 1 kHz, adjust the indicator so that its -3 dB point lights.
Left channel : R911
Right channel: R912

3-(2) Power Amplifier Idling Current Adjustment

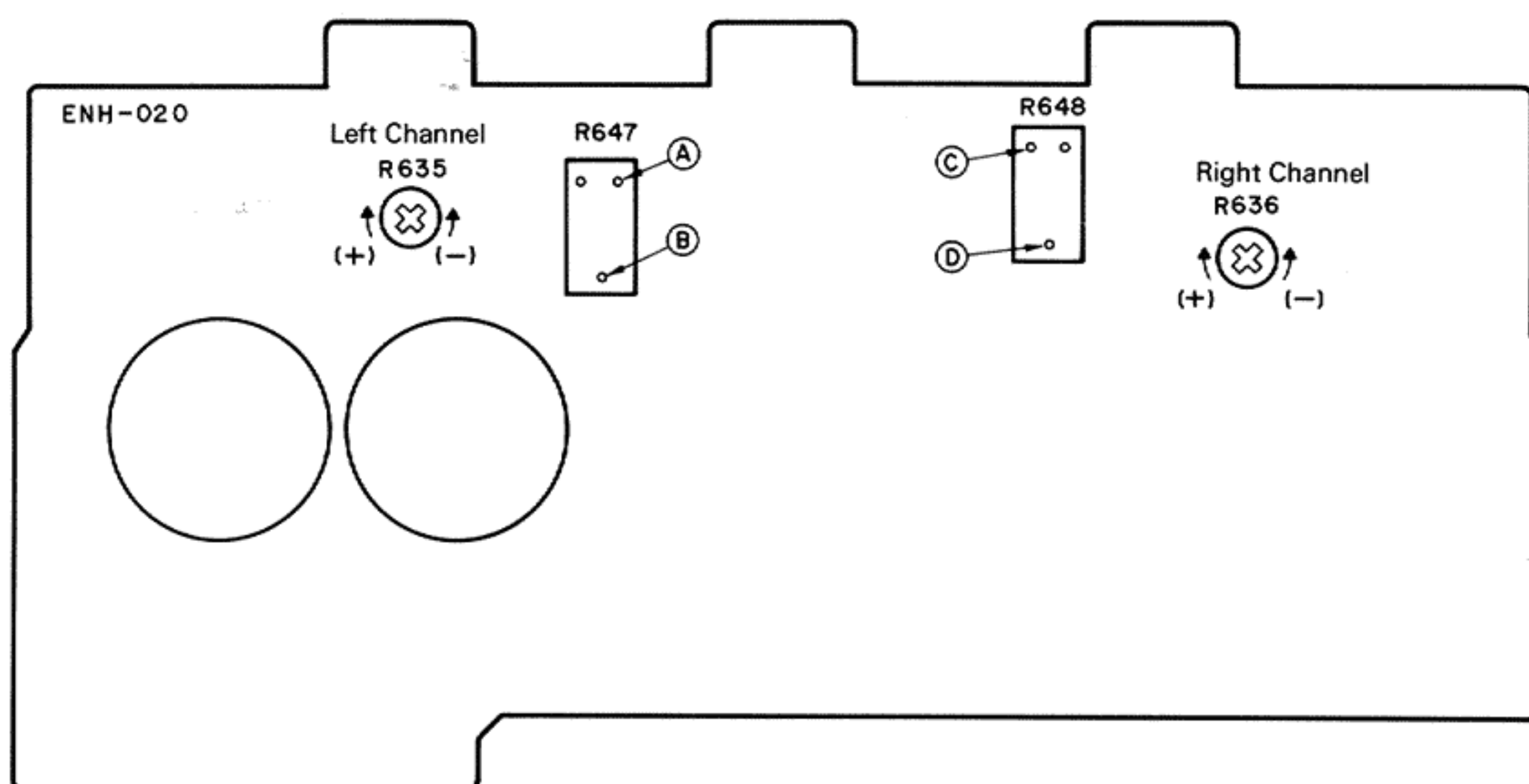


Fig. 6

1. Before turning on the power, turn the semi-fixed resistors (R635 for L channel and R636 for R channel) of the power amplifier circuit board fully counterclockwise.
2. Adjust the semi-fixed resistors (R635 and R636) so that the voltage at the following test points of the power amplifier circuit board is within a range of 1 mV ~ 2 mV after the power is turned on.
L channel: Measure the voltage between test point A (emitter of Q617) and output at the test point B.
R channel: Measure the voltage between test point C (emitter of Q618) and output at the test point D.
3. Readjust resistors R635 and R636 about 5 minutes after the power is turned on (the heatsink temperature must be sufficiently high) so that the voltage at the test points becomes 3 mV.
Confirm that the voltage does not vary when the heat-sink temperature increases further.
Note: Be sure to perform the measurement with the probes and cabinet of the measuring equipment separated from the grounding terminals of A-K300 or other measuring equipment.

4. Block Diagram

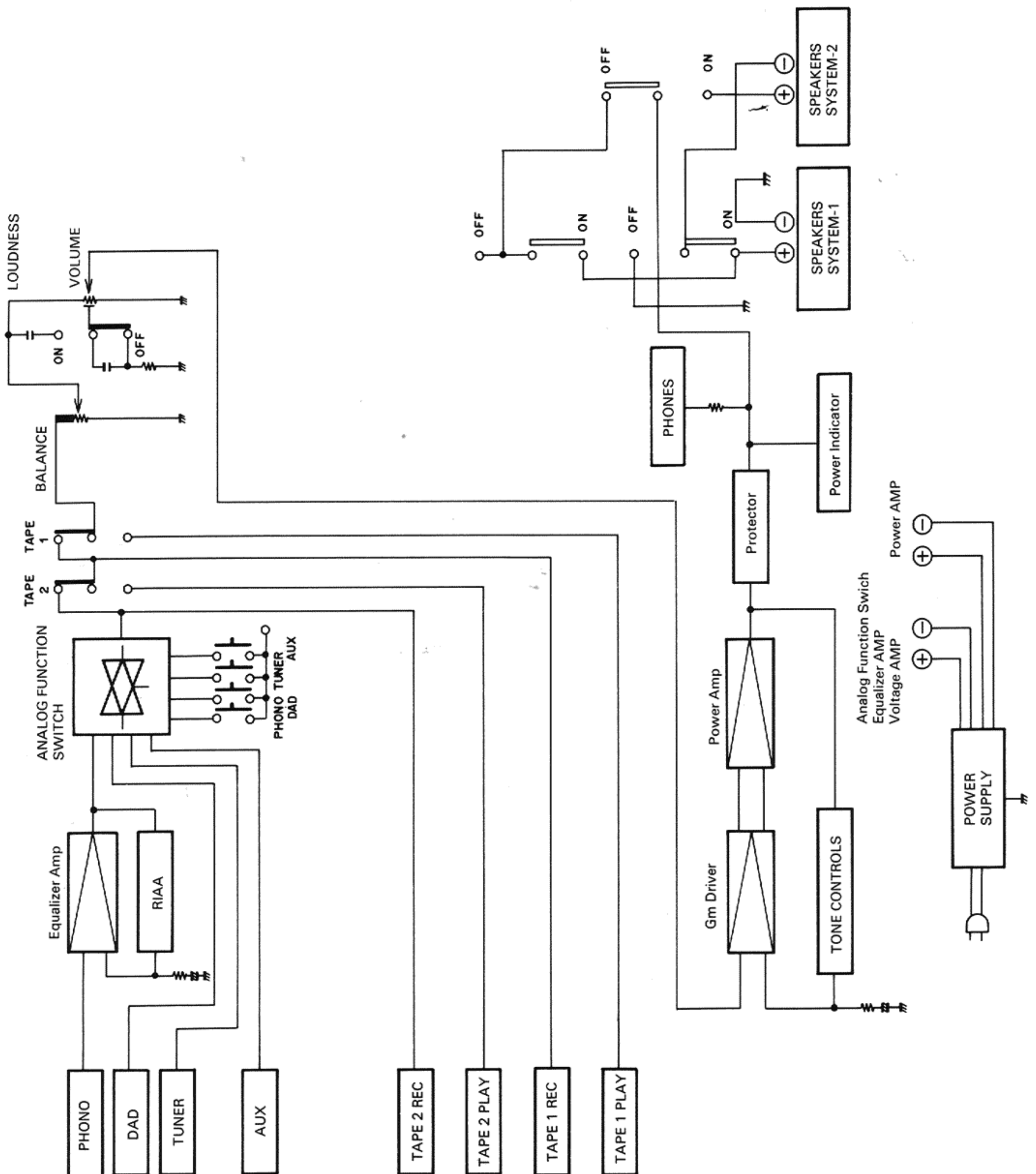
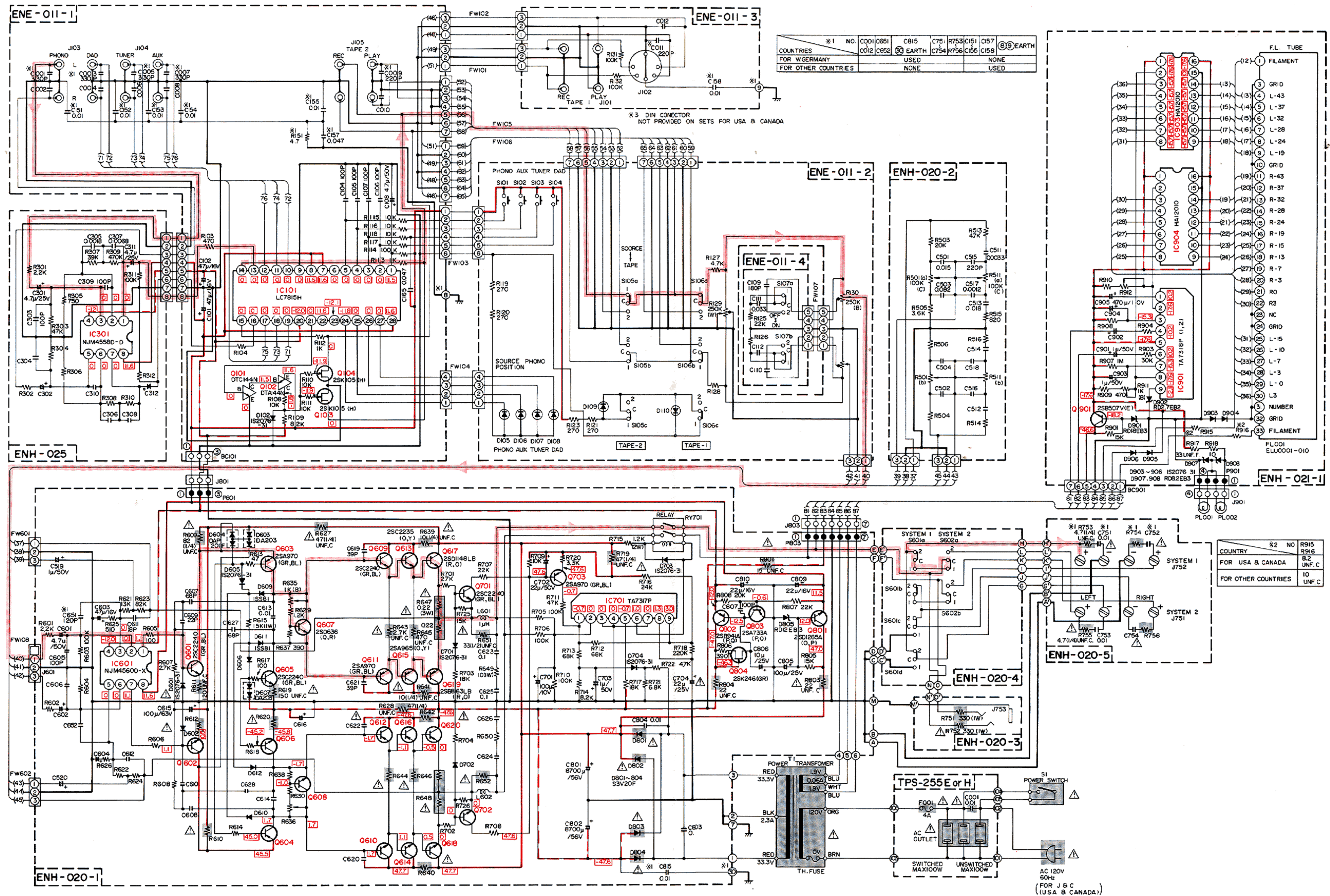


Fig. 7

5. A-K 300 Schematic Diagram



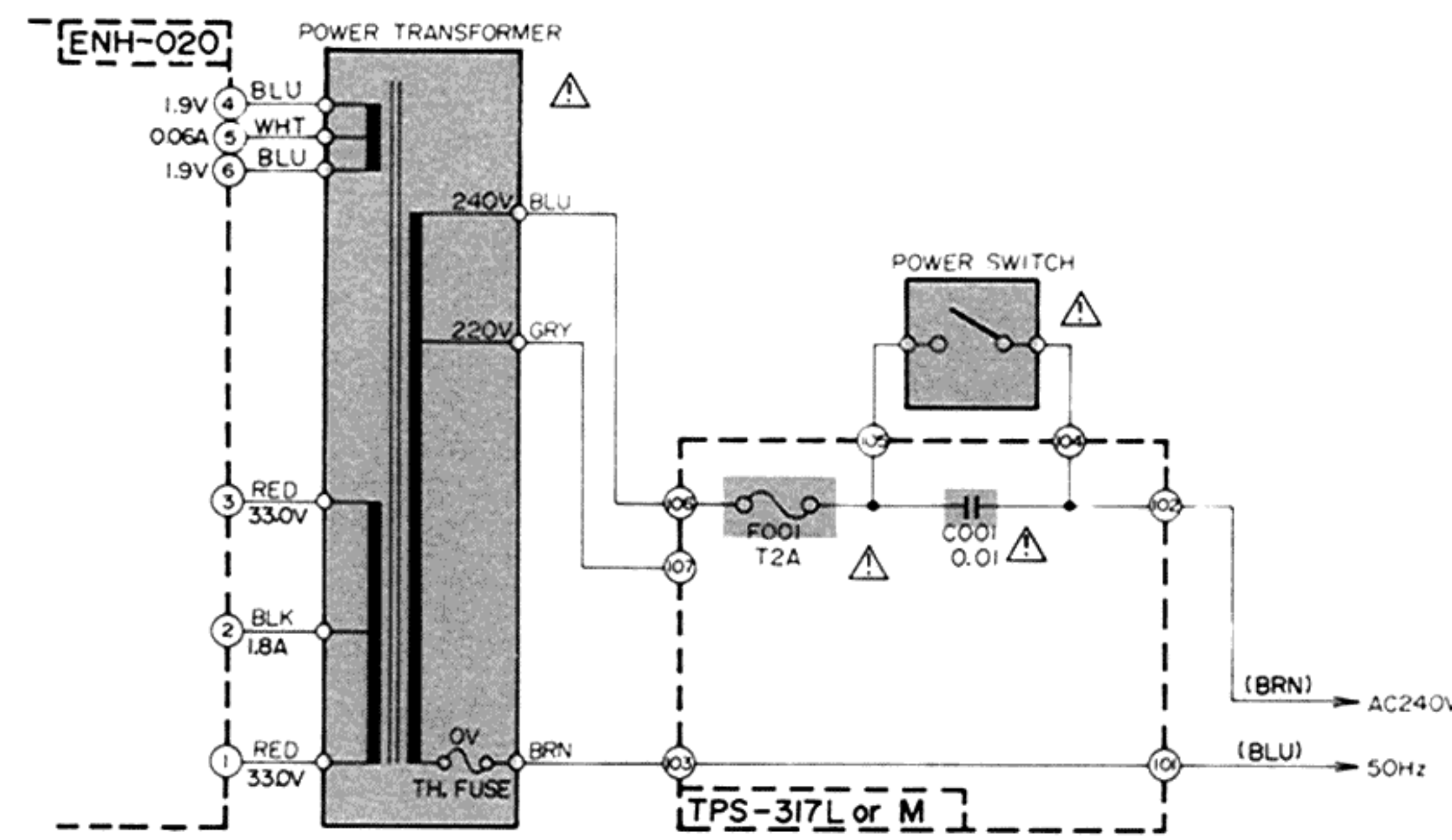
Notes:

1. indicates positive B power supply.
2. indicates negative B power supply.
3. indicates signal path.
4. When replacing the parts in the darkened area ()

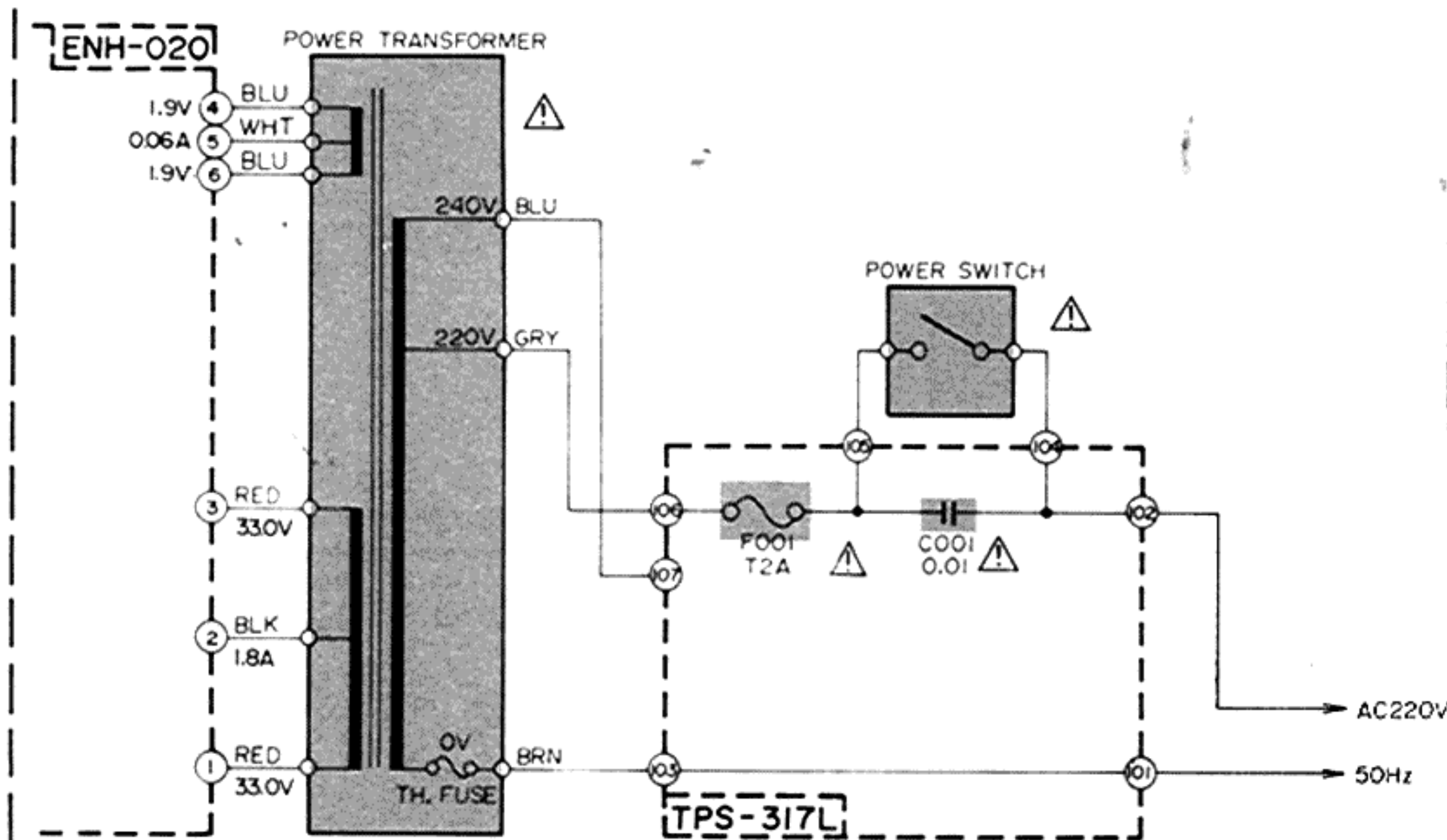
and those marked with , be sure to use the designated parts to ensure safety.

5. This is the standard circuit diagram.
The design and contents are subject to change without notice.

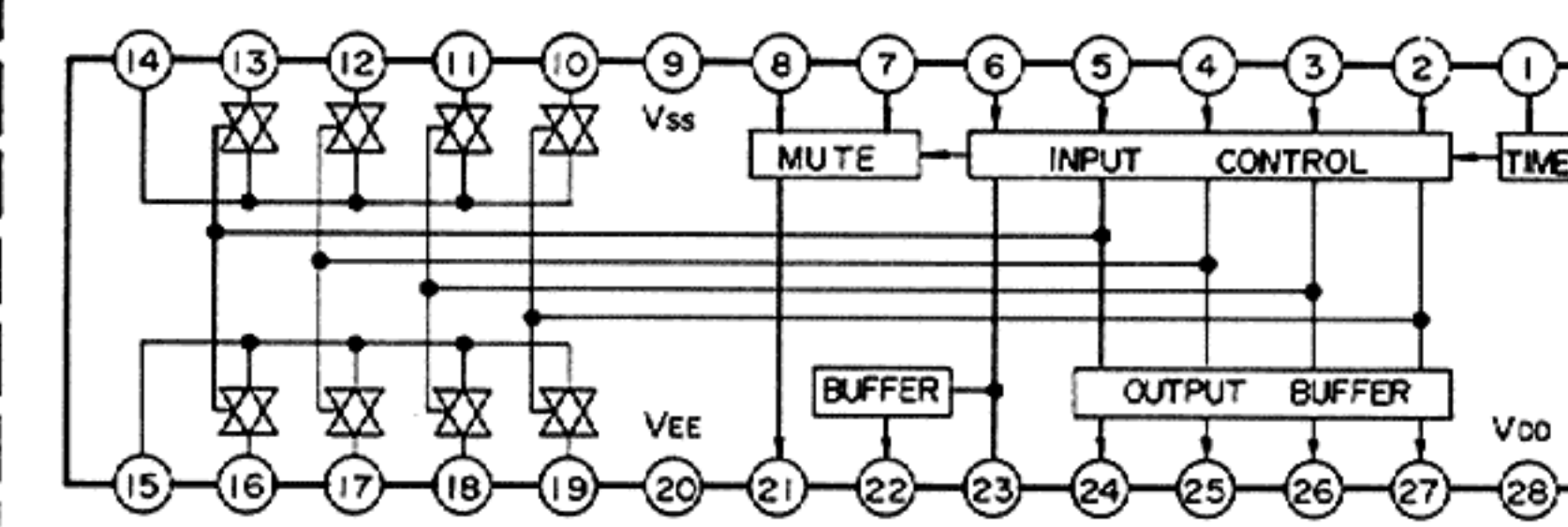
FOR BS & A (U.K. & AUSTRALIA)



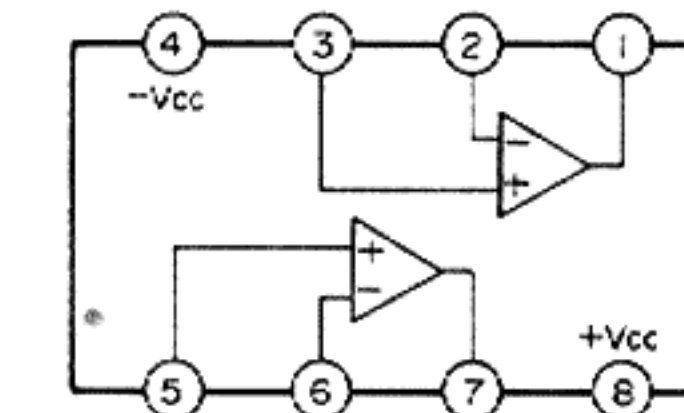
FOR E & G (EUROPE & WEST GERMANY)



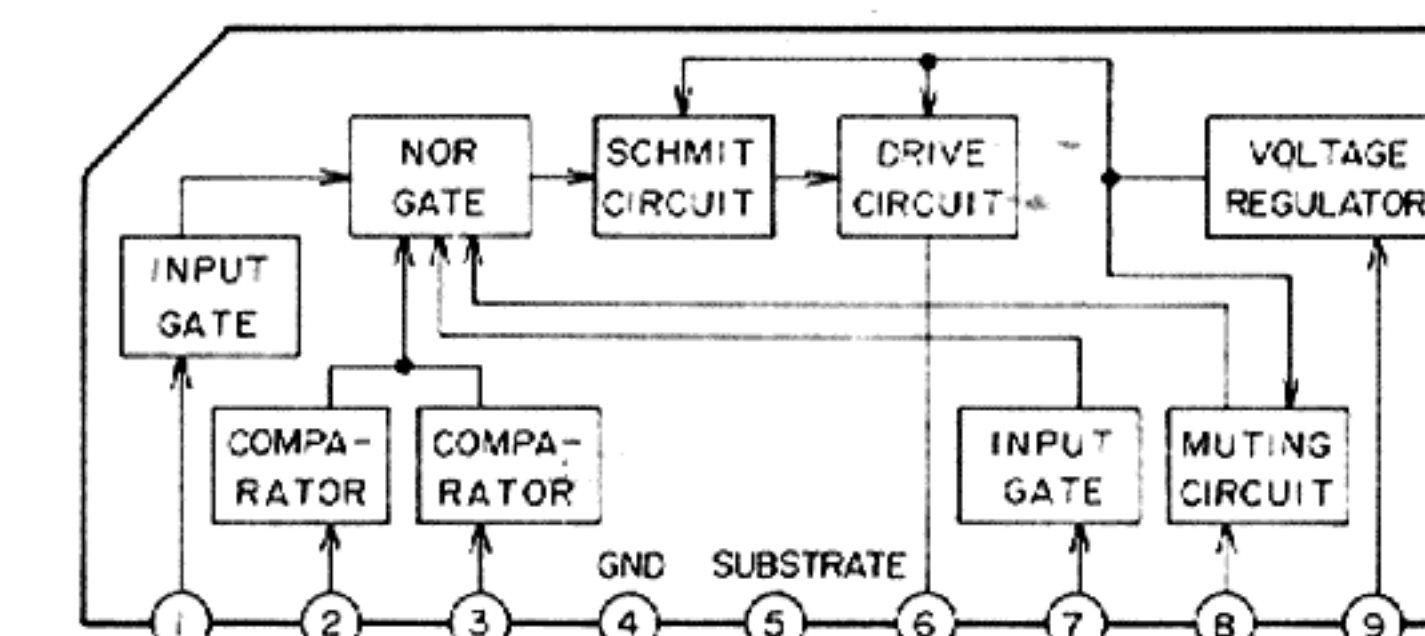
LC7815H



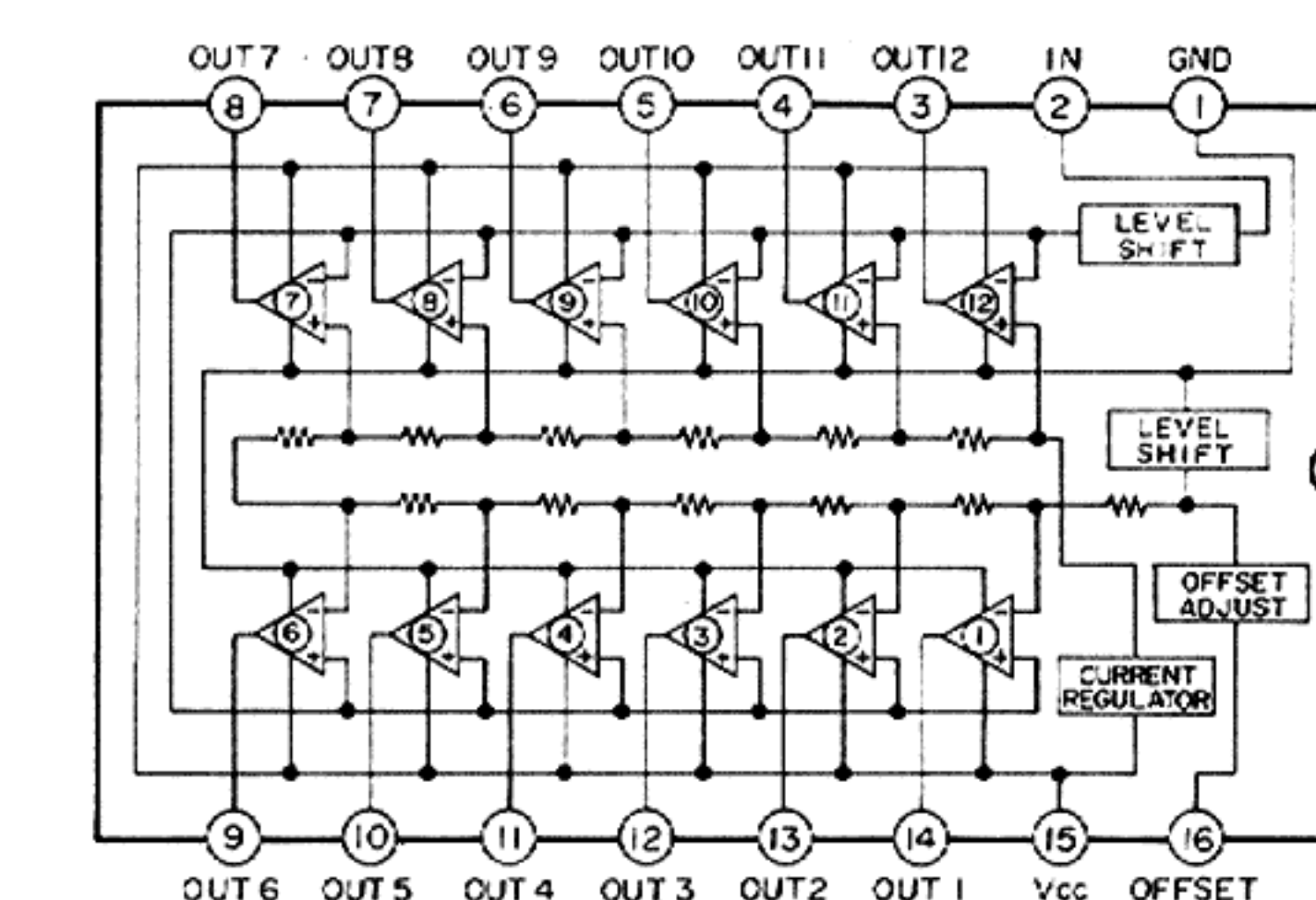
NJM4558D-D
NJM4560D-X



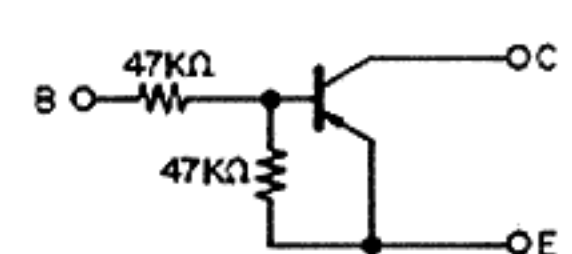
TA7317P



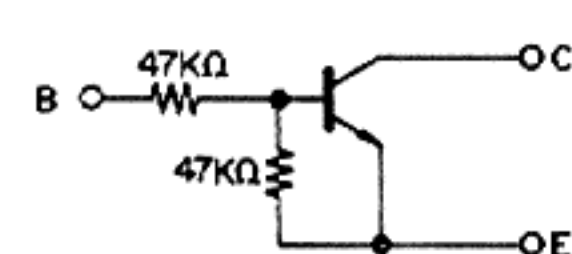
HA12010



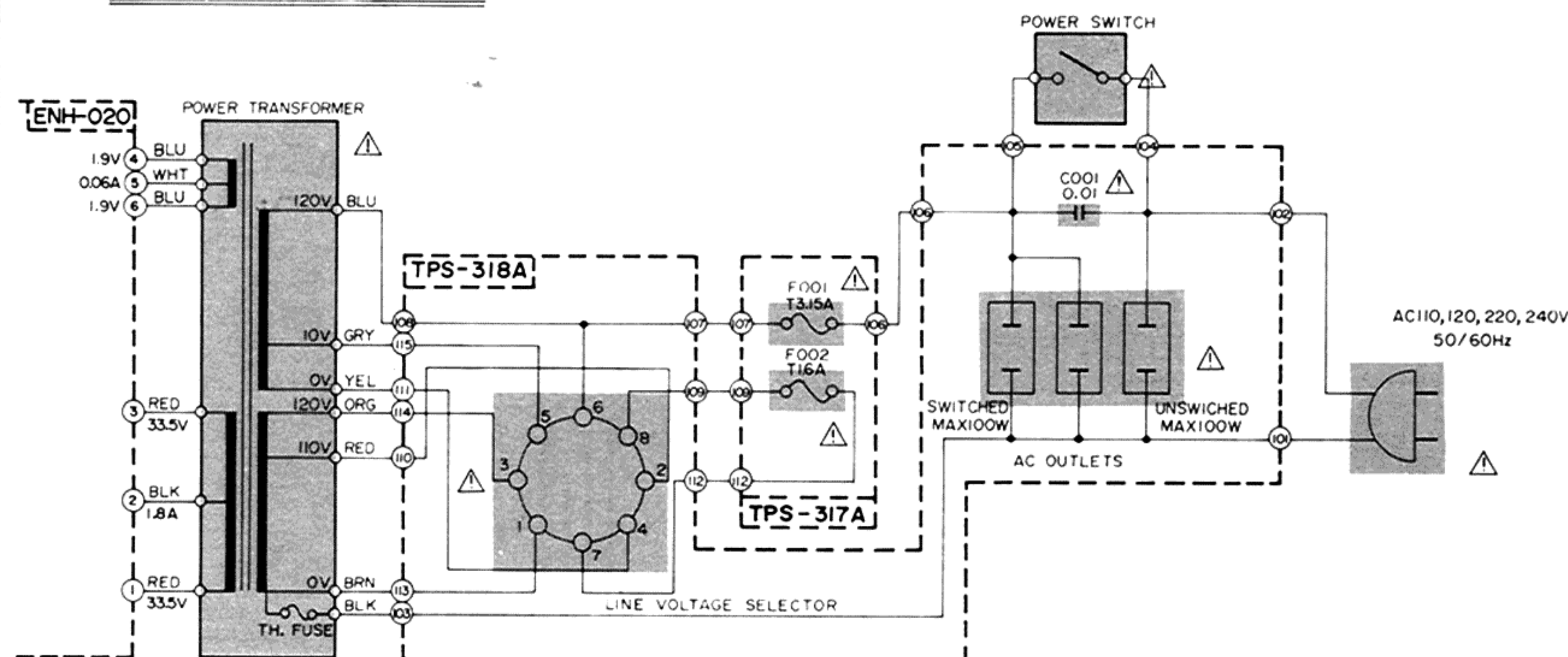
DTA144N



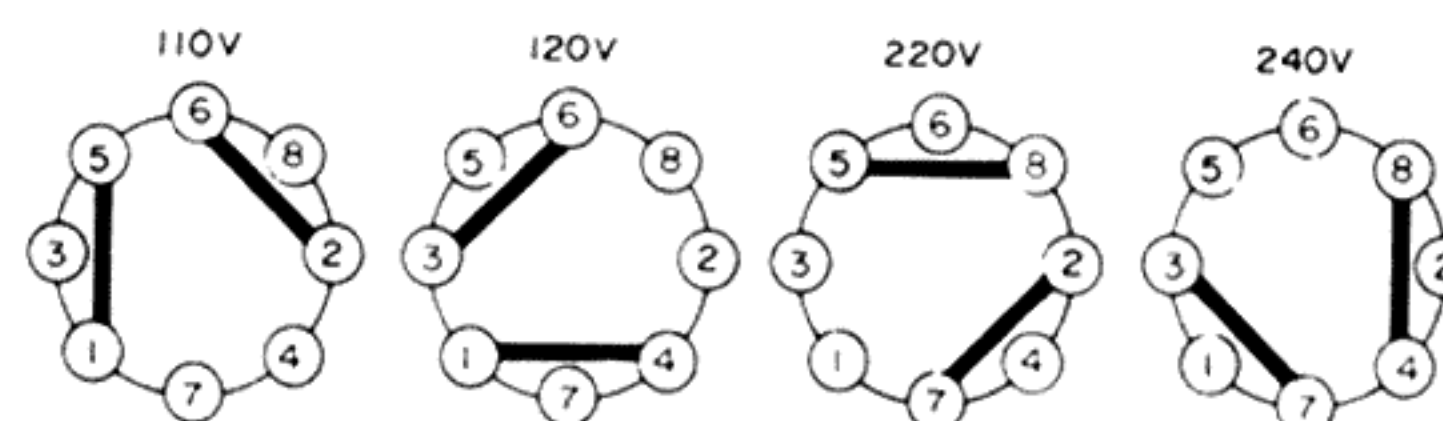
DTC144N



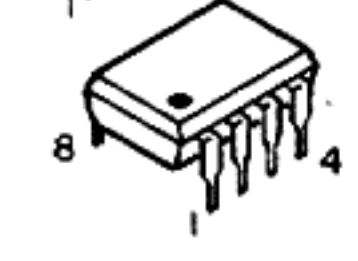
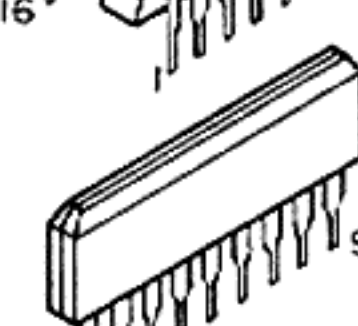
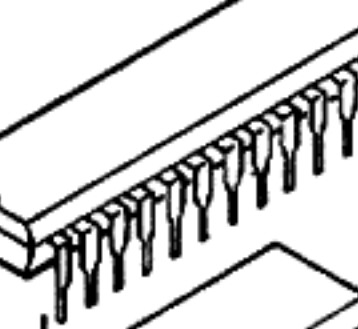
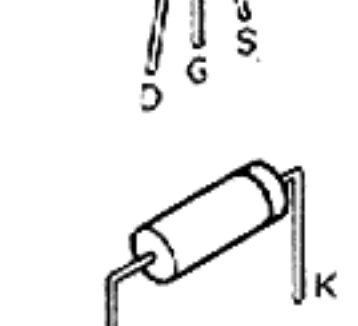
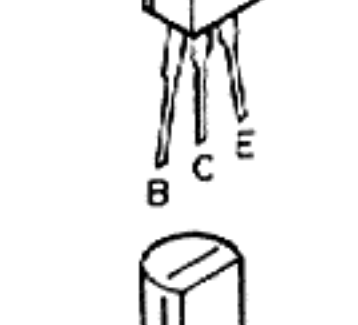
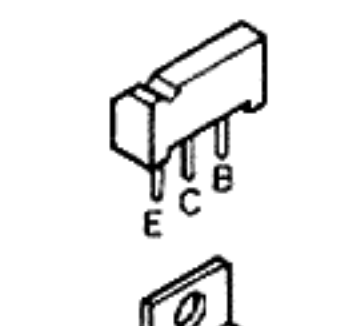
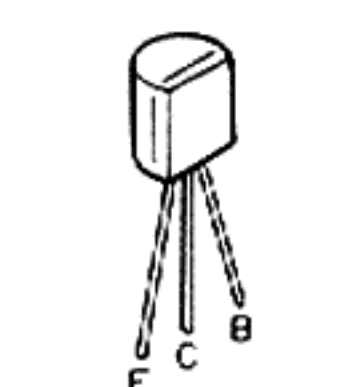
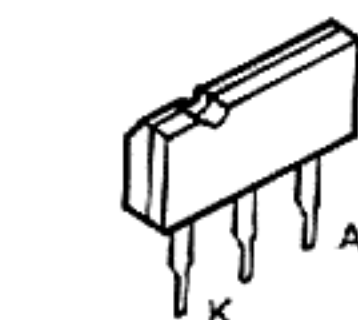
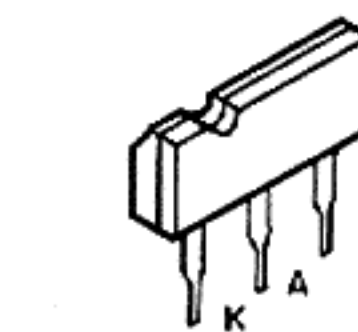
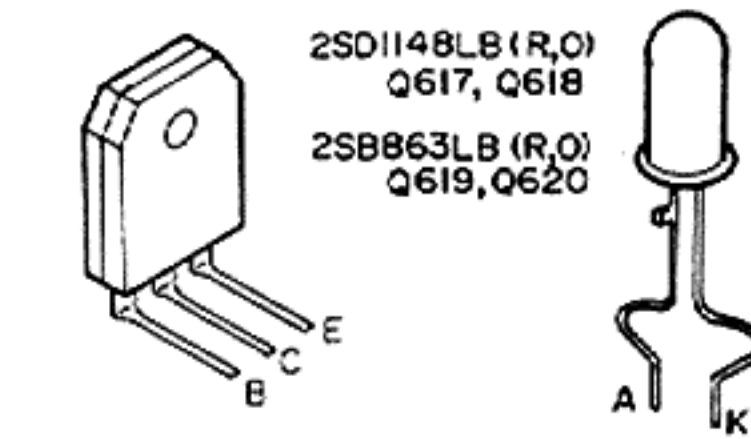
FOR U & P (OTHER COUNTRIES)



VOLTAGE SELECTOR CONNECTION

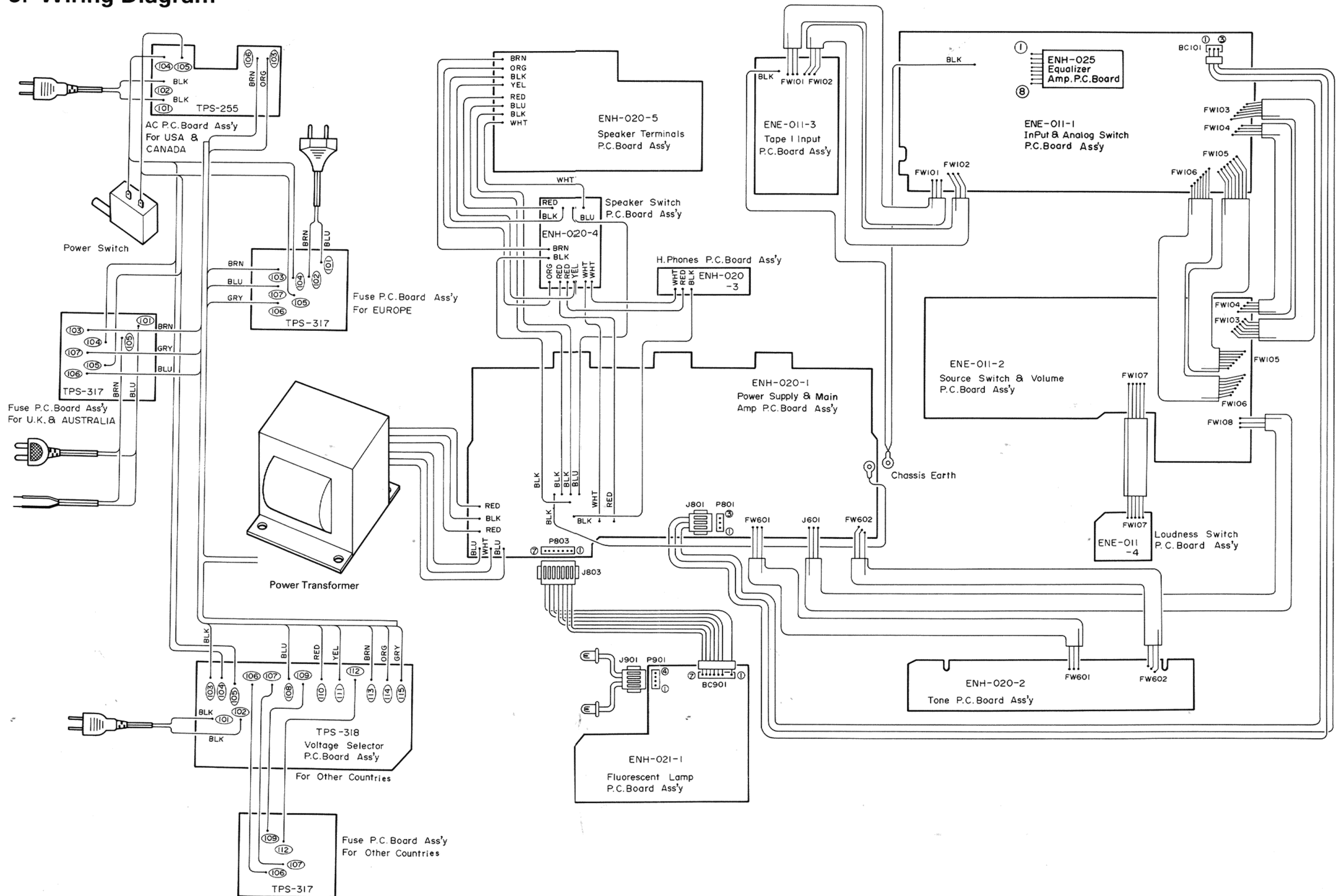


TOP VIEW

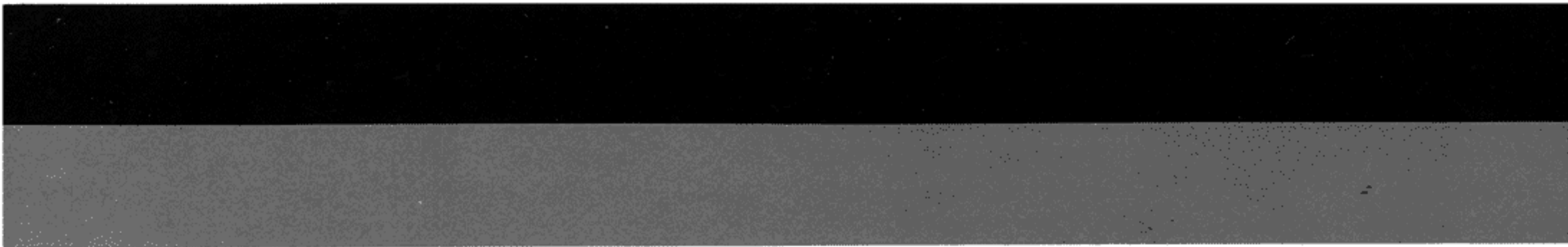


2SD1148B (R,Q) Q617, Q618	SLR-54MC50F165 D105 ~ D108
2SB863L (R,Q) Q619, Q620	SLR-54VC50F165 D109, D110
DA203F	D603, D607
DAP201F	D604
2SA733A (P,Q) 2SA970 (GR,BL) 2SC2240 (GR,BL)	Q803, Q703, Q611, Q612, Q603, Q604 Q701, Q702, Q609, Q610 Q605, Q606, Q601, Q602
2SC2235 (O,Y) 2SA965 (O,Y)	Q613, Q614 Q615, Q616
DTC144N DTA144N	Q101 Q102
2SD636 (Q,R)	D607, Q608
2SD1265A (O,P) 2SB941A (P,Q) 2SB507V (E)	Q801 Q802 Q901
2SK246 (GR) 2SK105 (H)	Q804 Q103, Q104
IS2076-31	D102, D601, D602 D701 ~ D704
RD2.7EB2 RD18EB3 RD8.2EB3 ISS81 S3V20F RD12EB3	D903, D906, D605, D606 D902 D901 D907, D908 D609 ~ D612 D801 ~ D804 D805
LC7815H	IC101
HA1210	IC903, IC904
TA7317P TA7318P (1,2)	IC701 IC901
NJM4558D-D NJM4560D-X	IC301 IC601

6. Wiring Diagram



MEMO



JVC

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