

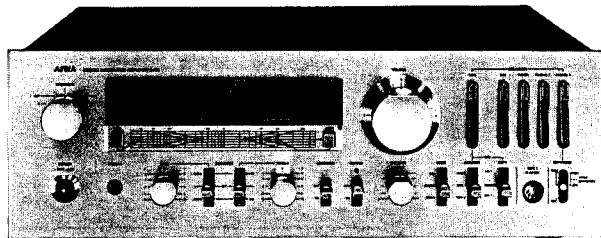
STEREO INTEGRATED AMPLIFIER

MODEL NO. **AA-8700H, E, K**

AIWA®

(SERVICE MANUAL)

Code No., 08-870-000-20



DATE OF ISSUE 10/1978

SPECIFICATIONS

Semiconductors:	4 IC's, 8 FET's, 51 transistors, 58 diodes, 7 LED'S	Input sensitivity and impedance:	PHONO1 (MC) 220mV/10 ohms PHONO1,2(MM) 2.5mV/47 k-ohms TUNER,AUX, 150mV/47 k-ohms TAPE,DIN 150mV/47 k-ohms MAIN IN 0.8V/47 k-ohms
Power source:	AC 120V/220V/240V (selectable with voltage selector)	Phono maximum input voltage:	280 mV ±0.2 dB (30 Hz ~ 15,000 Hz)
Power consumption:	550 W (E, K model) 260 W (H model)	RIAA deviation:	±0.2 dB (30 Hz ~ 15,000 Hz)
Dimensions:	448 (W) x 156 (H) x 375 (D) mm	Tone control:	
Weight:	16.5 kg	Bass	20 Hz ±8 dB (turnover frequency 200 Hz) 50 Hz ±8 dB (turnover frequency 400 Hz)
Power output		Treble	20 kHz ±10 dB (turnover frequency 2.5 kHz) 40 kHz ±10 dB (turnover frequency 5 kHz)
Dynamic power output:	170 W + 170 W (4 ohms) (at 1 KHz)	Filters:	Low: 30 Hz, 12 dB/oct. High: 10 kHz, 12 dB/oct.
Power output (FTC):	85 W + 85 W (4 ohms) (All channel driven 20 Hz~20 kHz, THD 0.02%)	Output voltage and impedance:	TAPE 150 mV/47 k-ohms DIN 30 mV/80 k-ohms PRE 0.8 V/1.3 k-ohms PHONES 4 ~ 16 ohms SPEAKER 4 ~ 16 ohms (A, B) 8 ~ 16 ohms (A+B)
Power output (DIN 45500):	(10 minutes driven 1 kHz, THD 1%)		
Total harmonic distortion (IHF):	0.01% (at 40 W, 8 ohms)		
Intermodulation distortion (IHF):	(at 50 Hz: 7 kHz = 4:1, 8 ohms) 0.02% (rated power 75 W + 75 W)		
Power bandwidth (IHF):	5 Hz ~ 100 kHz (less than 0.03%) (both channel driven at 8 ohms)		
Signal to noise ratio:	PHONO (MC) 70 dB (30Ω) (IHF A curve) PHONO (MM) 83 dB (short circuit) TUNER,AUX,TAPE 100 dB (short circuit)		
Damping factor:	More than 40 (at 8 ohms, 20 Hz ~20 kHz)		
Channel crosstalk (DIN):	50 dB (at 1 kHz)		

• The specifications and external appearance of this set are subject to change without prior notice.

DISASSEMBLY INSTRUCTIONS

To Remove Phono Amp Circuit Board
Remove 3 screws.

To Remove Lamp Circuit Board
Remove mounting screw.

To Remove Meter Amp Circuit Board
Remove 6 screws.

To Remove Front Panel

- 1) Remove 12 knobs.
- 2) Remove 6 screws.

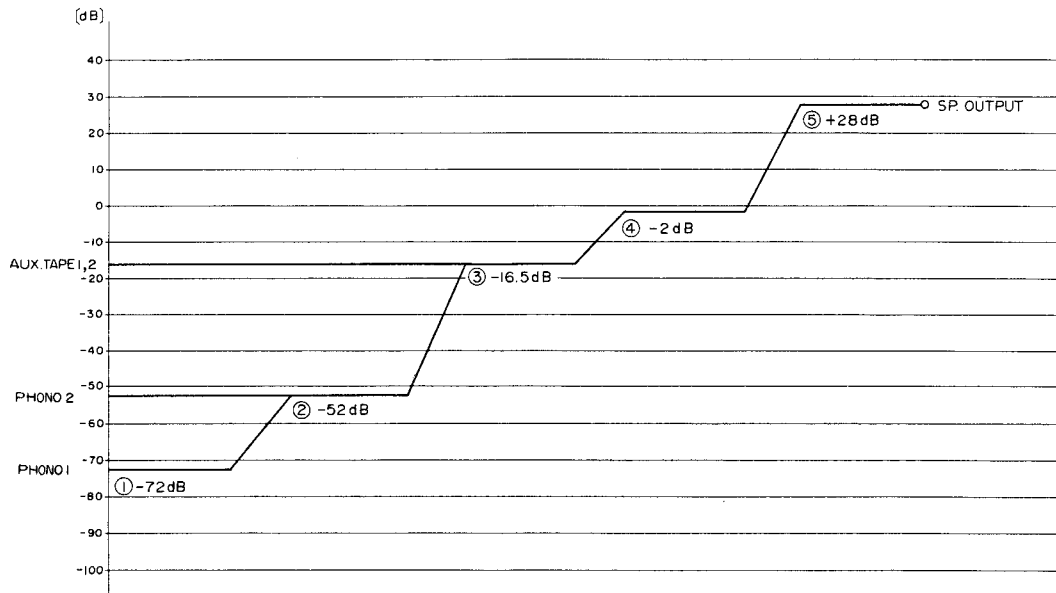
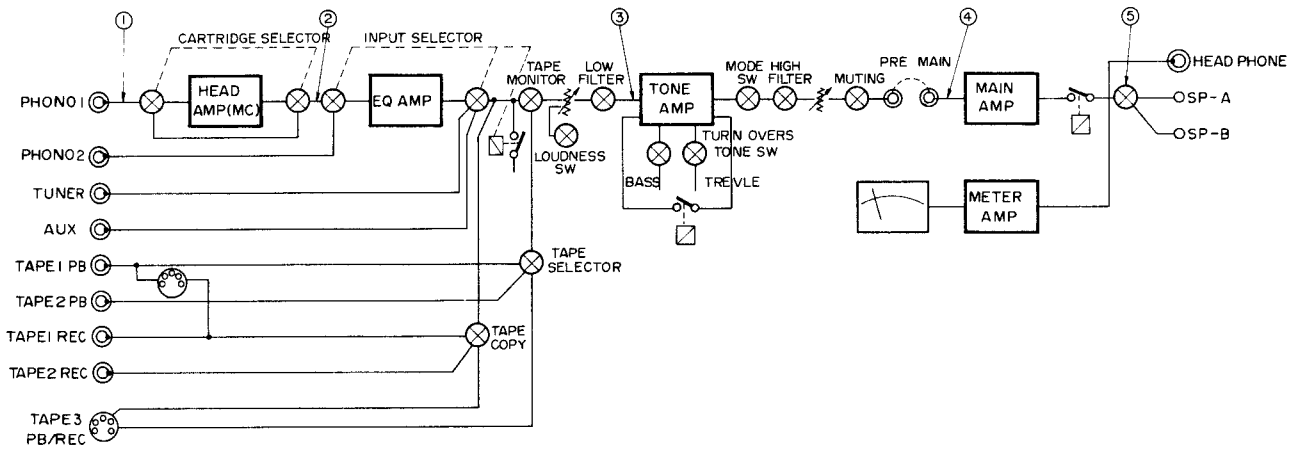
To Remove Pre Amp Circuit Board

- 1) Remove 7 screws.
- 2) Remove mounting nuts.

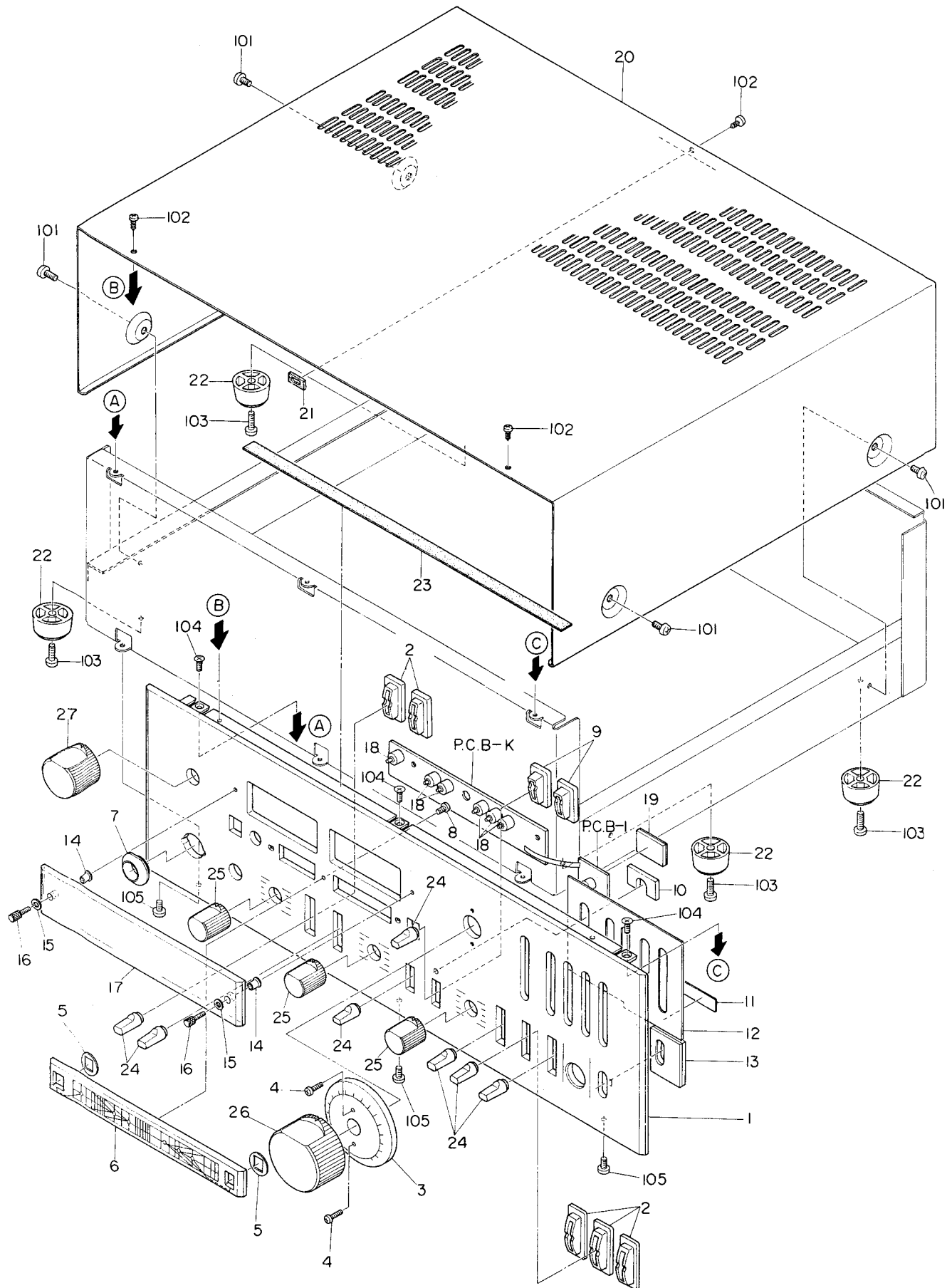
To Remove Tone Power Circuit Board

- 1) Remove 4 screws.
- 2) Remove 3 nuts.

LEVEL DIAGRAM



EXPLODED VIEW-1



PARTS LIST

MECHANICAL PARTS

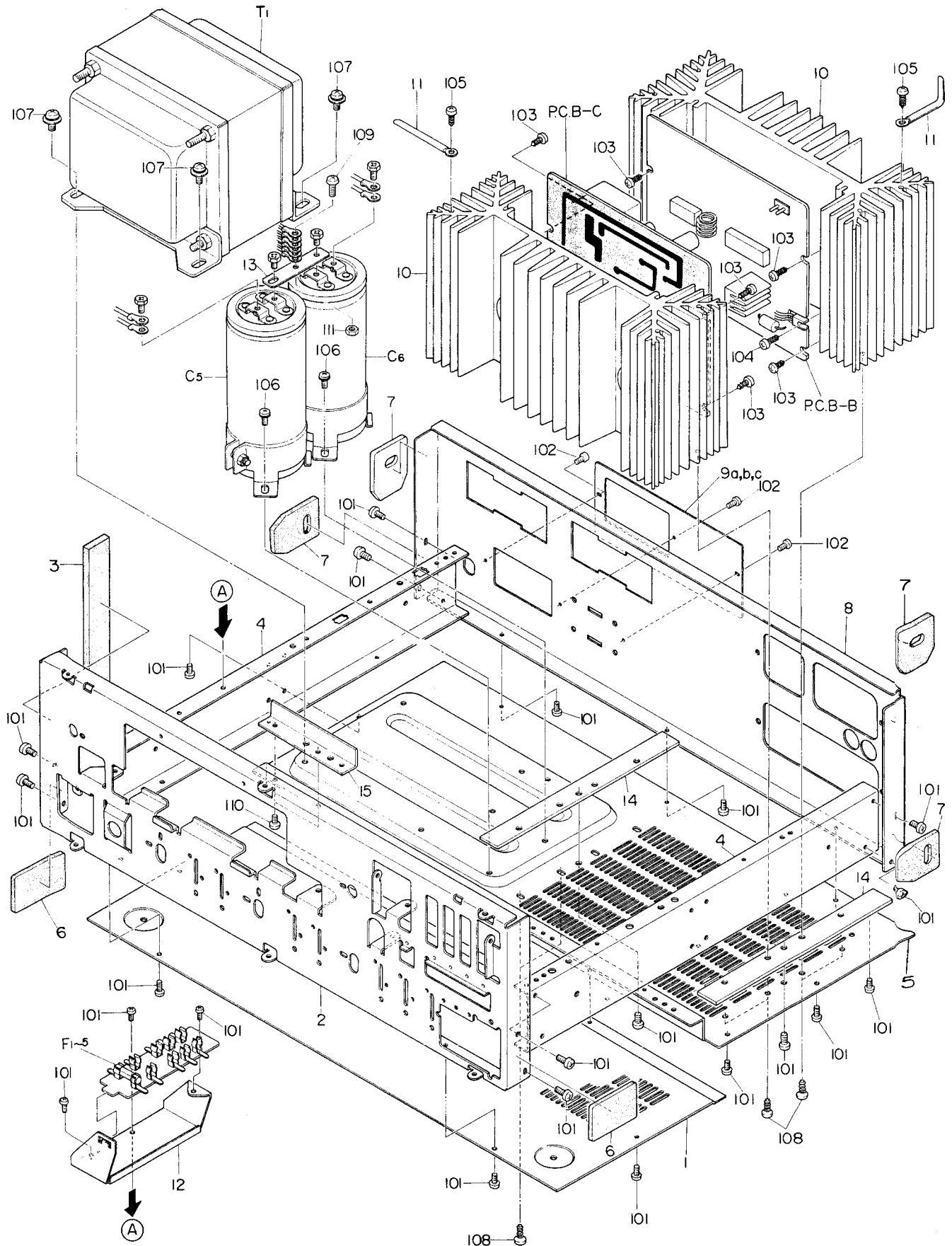
* mark in this part list shows exclusive part (which is used) for only Model AA-8700.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1~13	09-047-120-01		Panel assembly		
1-1	82-478-033-01		Front sash	*	1
1-2	82-478-023-01		Guide, Lever switch	*	3
1-3	82-478-007-01		Ring, Volume	*	1
1-4	87-231-096-21		Q + 3-10		2
1-5	82-478-214-01		Button guide	*	2
1-6	82-478-005-01		Decorative plate, Front	*	1
1-7	82-478-012-01		Ring, Power button	*	1
1-8	87-231-095-01		Q + 3-8		1
1-9	82-478-027-01		Guide, Lever switch	*	2
1-10	82-478-217-01		Cushion A, LED	*	1
1-11	82-478-219-01		Cushion felt, Selector button	*	1
1-12	82-478-213-01		Guide, Selector button	*	1
1-13	82-478-212-01		Lever guide	*	1
1-14	82-488-023-01		G sleeve		2
1-15	82-488-024-01		G washer		2
1-16	82-488-016-01		Screw, Window		2
1-17	82-478-045-01		Window, Meter	*	1
1-18	82-478-206-01		Rubber bushing, LED	*	6
1-19	82-478-218-01		Cushion	*	1
1-20	82-478-048-01		Steel cabinet ass'y	*	1
1-21	82-380-439-01		Spacer, Back panel	AD-6500	1
1-22	87-085-162-01		Foot		4
1-23	82-397-245-01		Himeron cloth, Cabinet	AD-6550	1
1-24	82-399-024-01		Knob, Selector	AD-6400	7
1-25	82-478-031-01		Tone knob ass'y	*	3
1-26	82-478-028-01		Volume knob ass'y	*	1
1-27	82-478-008-01		Selector knob ass'y	*	1

Ref. No.	Part No.	Description	Q'ty
1-101	87-257-169-11	U + 4-6 (Black)	4
1-102	87-340-095-01	UT ₁ + 3-8 (Black)	3
1-103	87-251-171-21	V + 4-10	4

Ref. No.	Part No.	Description	Q'ty
1-104	87-081-531-01	QTT + 3-6	3
1-105	87-081-511-01	VTT + 3-6	3

EXPLODED VIEW-2

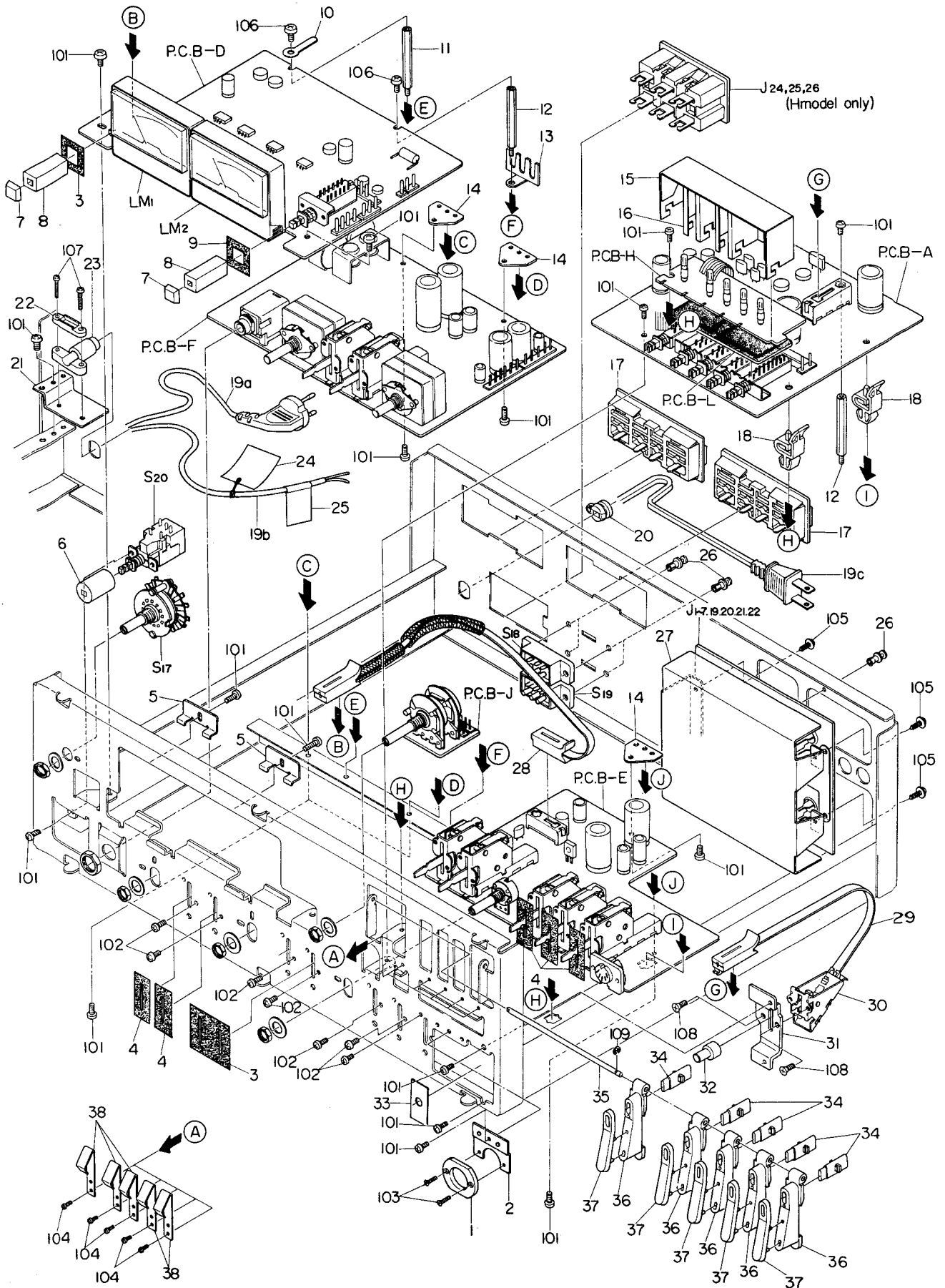


Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	82-478-004-01		Bottom plate	*	1
2-2	82-478-201-01		Front chassis	*	1
2-3	82-473-271-01		Spacer E, Side panel	AX-7500	1
2-4	82-478-202-01		Side chassis	*	2
2-5	82-478-255-01		Amp. chassis	*	1
2-6	82-473-270-01		Spacer D, Side panel	AX-7500	2
2-7	82-473-245-01		Spacer A, Side panel	AX-7500	4
2-8	82-478-034-01		Panel E, Back	*	1
2-9 a	82-478-025-01		Name plate, Spec. (E model only)	*	1
2-9 b	82-478-040-01		Name plate, Spec. (K model only)	*	1
2-9 c	82-478-045-01		Name plate, Spec. (H model only)	*	1
2-10	82-478-602-01		Heat sink B	*	2
2-11	87-064-080-01		Wire binder, 4 ϕ		2
2-12	82-478-224-01		Holder, Circuit board	*	1
2-13	82-478-659-01		Earth plate	*	1
2-14	82-478-229-01		Spacer, Heat sink	*	2
2-15	82-487-222-11		Auxiliary plate L		1

Ref. No.	Part No.	Description	Q'ty
2-101	87-081-511-01	VTT + 3-6	22
2-102	87-257-033-01	U + 2-4 (Black)	3
2-103	87-341-094-21	UT ₁ + 3-6	8
2-104	87-342-096-21	UT ₂ + 3-10	2
2-105	87-352-169-21	VT ₂ + 4-6	2
2-106	87-480-169-11	VS + 4-6	4

Ref. No.	Part No.	Description	Q'ty
2-107	87-490-170-11	VWS + 4-8	4
2-108	87-352-171-21	VT ₂ + 4-10	8
2-109	87-261-170-21	V + 4-8	1
2-110	87-261-095-21	V + 3-8	2
2-111	87-391-035-11	N-4	1

EXPLODED VIEW-3



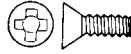
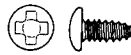

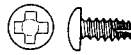
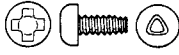
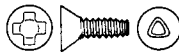
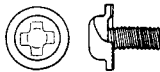



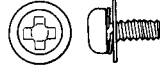


Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-397-054-01		Cover, DIN	AD-6550	1
3-2	82-380-355-01		Holder, DIN jack	AD-6500	1
3-3	82-478-220-01		Himeron cloth A, Blind	*	2
3-4	82-478-221-01		Himeron cloth B, Blind	*	5
3-5	82-478-205-01		Holder, Meter	*	2
3-6	82-399-025-01		AC switch button ass'y	AD-6400	1
3-7	82-478-016-01		Cap, Filter button	*	2
3-8	82-478-015-01		Filter button	*	2
3-9	82-478-222-01		Himeron C, Lever	*	1
3-10	87-038-039-01		Wire binder		1
3-11	82-478-215-01		Brass post B, Circuit board	*	1
3-12	82-478-208-01		Brass post A, Circuit board	*	1
3-13	87-032-860-01		Pin, 5P		1
3-14	82-478-204-01		Holder, Circuit board	*	3
3-15	82-478-211-01		Blind B, Pilot lamp	*	1
3-16	82-478-209-01		Blind A, Pilot lamp	*	2
3-17	87-033-148-01		Screw, Speaker terminal		2
3-18	87-064-088-01		Holder, Circuit board		2
3-19 a	87-034-884-01		AC power cord (E model only)		1
3-19 b	87-034-872-01		AC power cord (K model only)		1
3-19 c	87-034-885-01		AC power cord (H model only)		1
3-20	87-085-101-01		Cord bushing (H model only)		1
3-21	82-478-207-01		Holder, Cord bushing (E, K model only)	*	1
3-22	87-085-095-01		Holder B, AC power cord (E, K model only)		1
3-23	87-085-094-01		Holder A, AC power cord (E, K model only)		1
3-24	87-056-008-01		Label, AC power cord (K model only)		1
3-25	87-056-016-01		Tag, Main voltage (K model only)		1
3-26	87-085-102-01		Nylon rivet		7
3-27	82-478-603-01		Shield plate		1
3-28	87-034-920-01		Push switch, REMOTE wire		1
3-29	87-034-919-01		Wire, Lever switch		1
3-30	87-031-452-01		Lever switch, REMOTE		1
3-31	82-478-228-01		SW holder (MC)	*	1
3-32	82-478-038-01		Cartridge selector ass'y	*	1
3-33	82-478-022-01		Knob plate	*	1
3-34	82-478-019-01		Window, Selector indication	*	5
3-35	82-478-210-01		Shaft, Selector button	*	1
3-36	82-478-017-01		Selector button	*	5
3-37	82-478-018-01		Cap, Selector button	*	5
3-38	82-365-294-01		Pressure plate spring, Cassette		5

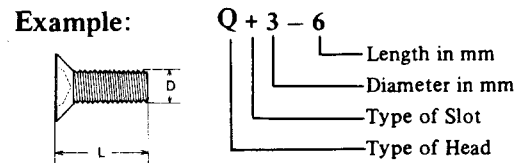
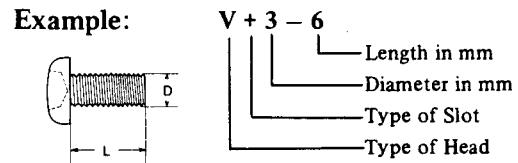
Ref. No.	Part No.	Description	Q'ty
3-101	87-081-511-01	VTT + 3-6	16
3-102	87-261-092-21	V + 3-4	7
3-103	87-231-035-21	Q + 2-6	2
3-104	87-081-501-01	VTT + 2.6-4	5
3-105	87-081-871-01	Special screw + 3-8 (Black)	4

Ref. No.	Part No.	Description	Q'ty
3-106	87-251-097-21	U + 3-12	2
3-107	87-261-099-21	V + 3-15	2
3-108	87-231-094-21	Q + 3-6	2
3-109	87-441-006-01	STE-2.3	1

HARDWARE NOMENCLATURE

- V: Pan head screw 
- U: Binding head screw 
- Q: Flat countersunk head screw 
- UT1: Binding head tapping screw 
- VT2: Pan head tapping screw 
- UT2: Binding head tapping screw 
- VTT: Pan head tap-tight screw 
- QTT: Pan head tap-tight screw 
- Special screw 

- VS: Pan head screw with spring washer 
- VWS: Pan head tapping screw with spring washer and washer 
- N: Nut 
- STE: E ring 



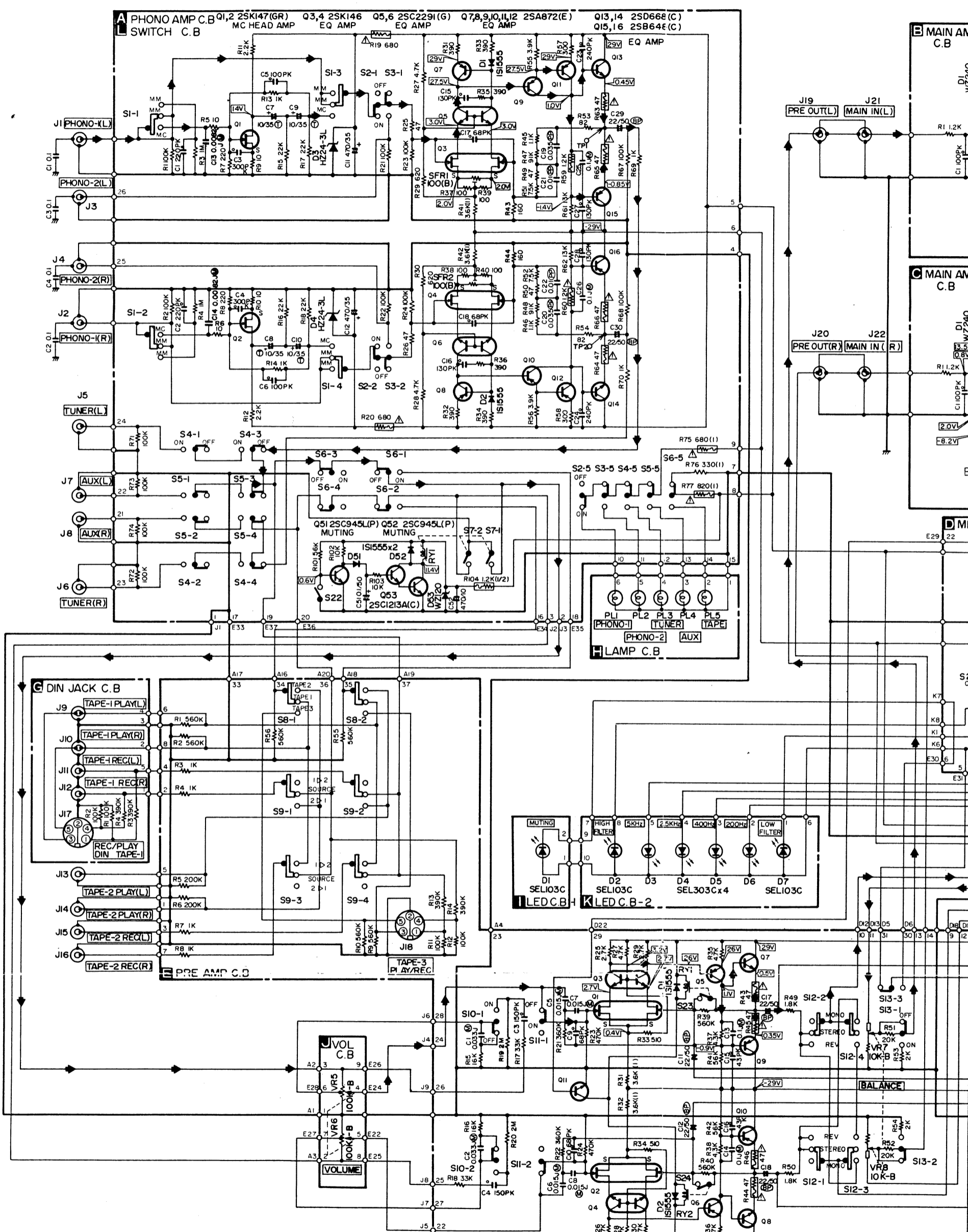
ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-478-851-01		Printed indiv., Packing	*	1
2	82-478-852-01		Cushion L, Printed indiv.	*	1
3	82-478-853-01		Cushion R, Printed indiv.	*	1
4	87-051-131-01		Poly-vinyl sack (for AC power cord) (K, H model only)		1
5	87-051-183-01		Poly-vinyl sack (for AC power cord) (E model only)		1
6	87-056-564-01		Curly stopper		2
7	87-056-607-01		Poly-vinyl sack (for case)		1
8 a	82-478-901-01		Instructions booklet (E model only)	*	1
8 b	82-478-902-01		Instructions booklet (K model only)	*	1
8 c	82-478-905-01		Instructions booklet (H model only)	*	1
9	87-056-008-01		Label, AC power cord (K model only)		1
10	87-056-009-01		Distributors list		1
11	87-056-016-01		Tag, Main voltage (K model only)		1
12	87-056-608-01		Poly-vinyl sack (for instruction)		1
13	87-032-930-01		Siemens plug (H model only)		1
14	87-058-023-01		Cord binder		1



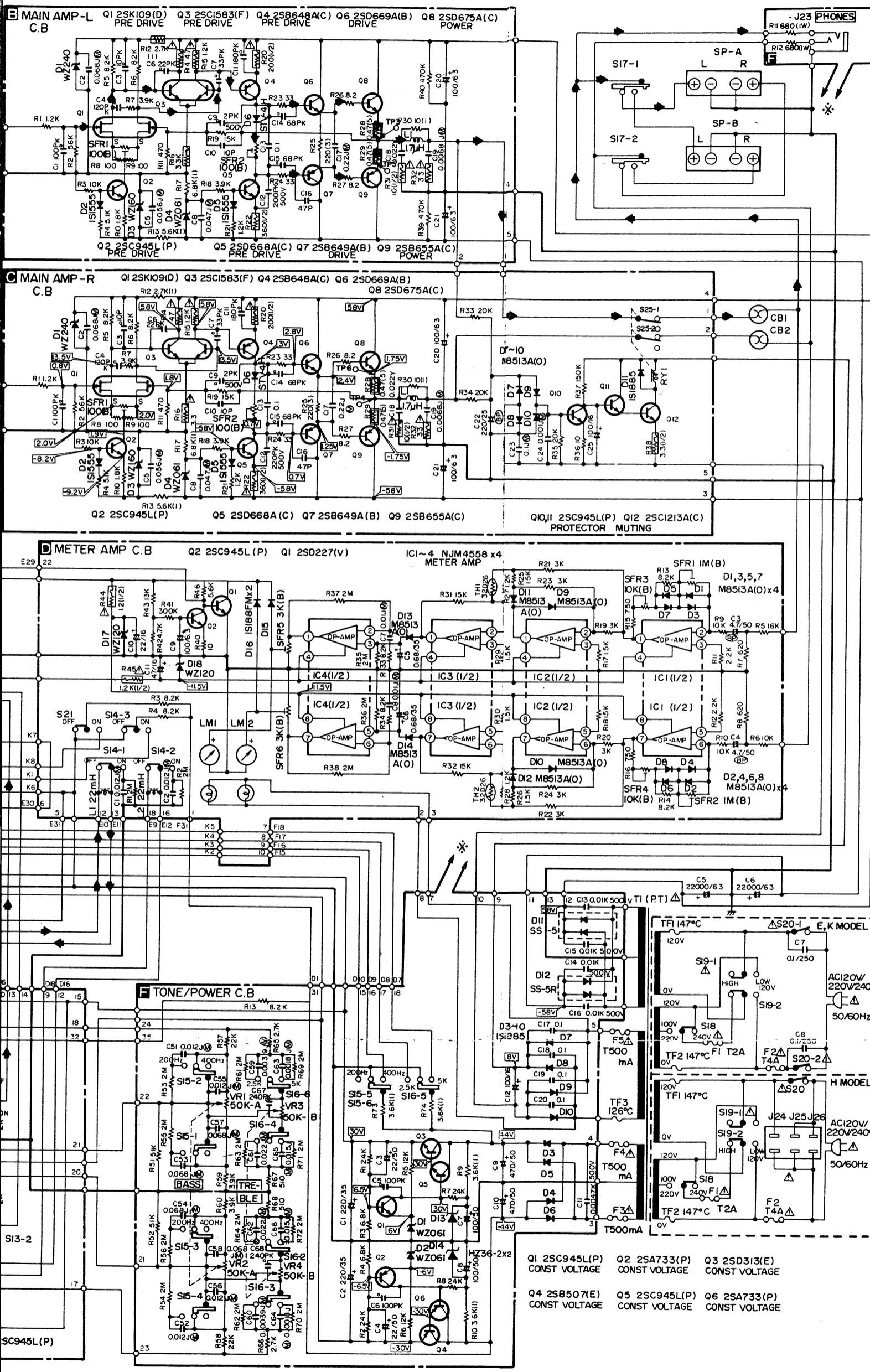
SCHEMATIC DIAGRAM

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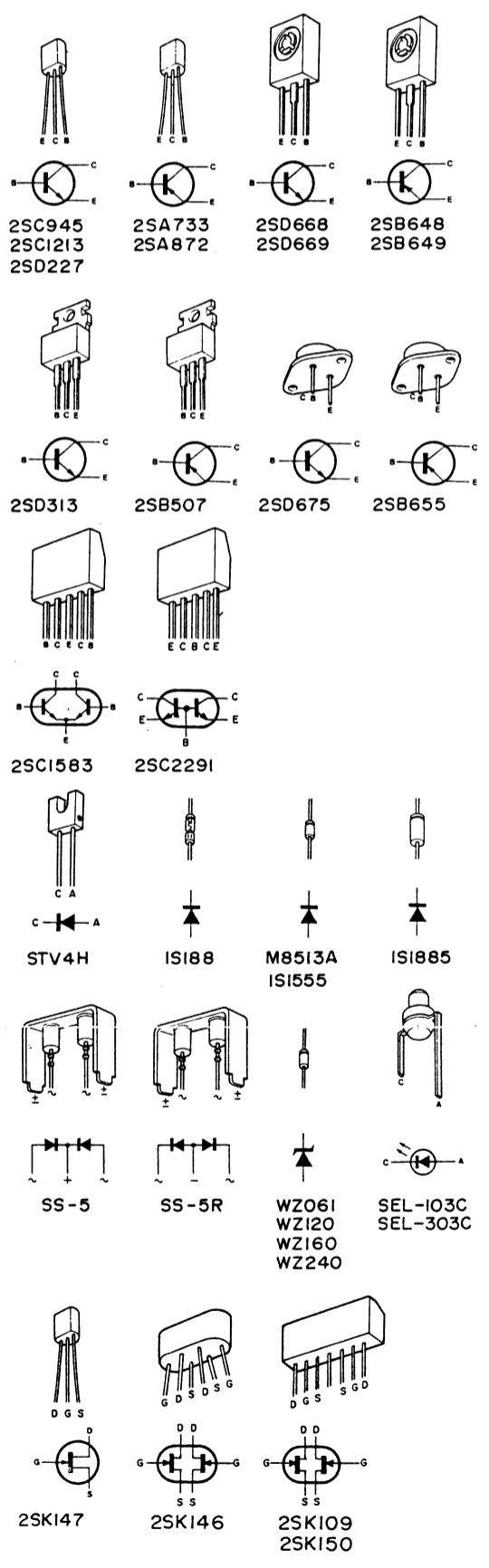


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|---------|-------------------------------|----------|-------------------|---------|-------------------------|---------|------------------------------|
| SI-1~4 | CARTRIDGE (MM) | SI11-1,2 | LOW FILTER (OFF) | SI6-1~6 | TURNOVER (OFF) | S21 | LOW FILTER (OFF) |
| S2-1~6 | PHONO-1 (ON) | SI12-1~4 | MODE (STEREO) | SI7-1,2 | SPEAKERS (A) | S22 | SELECTOR SW MUT (RELAY) (ON) |
| S3-1~6 | PHONO-2 (OFF) | SI13-1~4 | MUTING (OFF) | SI8 | VOLTAGE SELECTOR (240V) | S23 | MUTING SW (RELAY) (ON) |
| S4-1~6 | TUNER (OFF) | SI14-1~4 | HIGH FILTER (OFF) | SI9 | VOLTAGE SELECTOR (HIGH) | S24 | MUTING SW (RELAY) (ON) |
| S5-1~6 | AUX (OFF) | SI15-1~6 | TURNOVER (OFF) | S20 | POWER (ON) | S25-1,2 | PROTECTOR, MUTING (RELAY) |
| S6-1~6 | TAPE (SOURCE) | | | | | | |
| S7-1,2 | SELECTOR SW MUT (RELAY) (OFF) | | | | | | |
| S8-1,2 | MONITOR (TAPE 1) | | | | | | |
| S9-1~4 | COPY (SOURCE) | | | | | | |
| SI0-1,2 | LOUDNESS (OFF) | | | | | | |

Q1,2 2SK150(GR) PRE AMP Q3,4 2SC2291(G) PRE AMP Q5,6 2SA872(E) PRE AMP Q7,8 2SD668(C) PRE AMP Q9,10 2SB648(C) PRE AMP Q11 2SC945L(P)



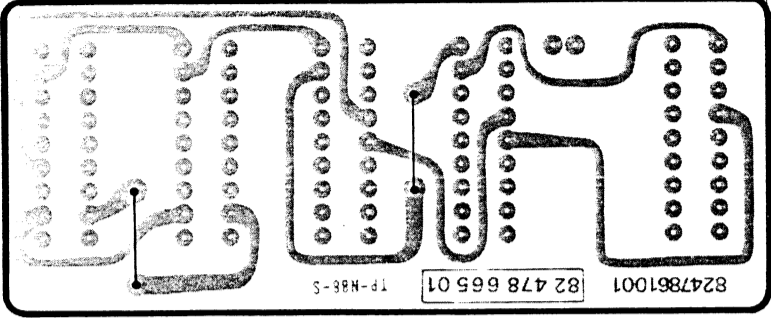
- NOTES:**
- 1) — B (+) power supply — B (-) power supply
 - 2) — Signal path
 - 3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
 - 4) Resistors with no designation have a rated power of 1/4W and a tolerance of ±5%.
 - 5) Capacitors with no designation have a dielectric strength of less than 50WV.
 - 6) The only capacitor tolerances indicated are ±5% (J) and ±10% (K).
 - 7) Ceramic-capacitor symbols:
 □ For temperature compensation (SL)
 □ High dielectric constant system (YY)
 □ High dielectric constant system (YW, YP, YZ)
 - 8) Explanation of symbols:
 (M) Mylar capacitor
 (PP) Polypropylene film capacitor
 (BP) Bi-polarized capacitor
 (T) Tantalum capacitor
 (F) Fuse resistor
 (NF) Nonflammable resistor
 (Δ) Safety component symbol
- This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.



(F) (RELAY) (OFF)
 (Y) (ON)
 (Y) (ON)
 (RELAY)

WIRING-1

SWITCH C.B



3 Phono Amp. DC Balance Adjustment

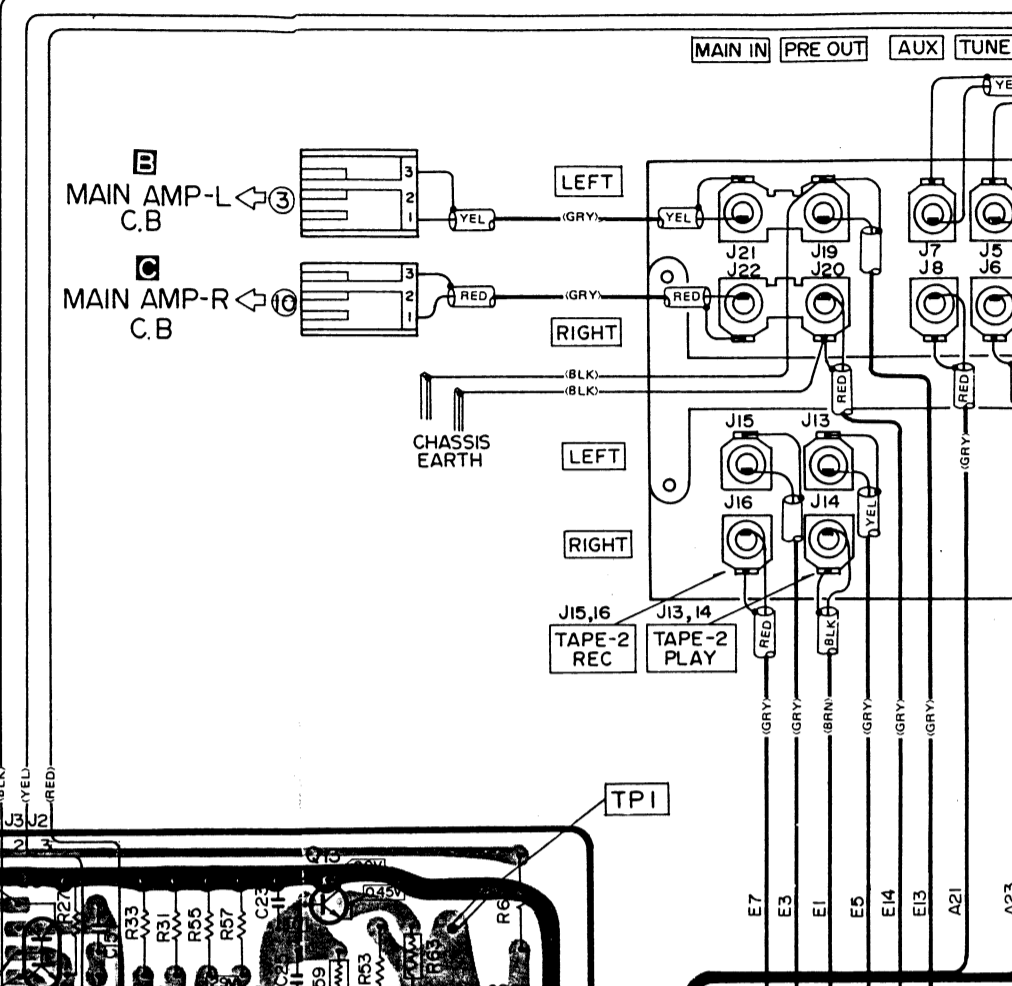
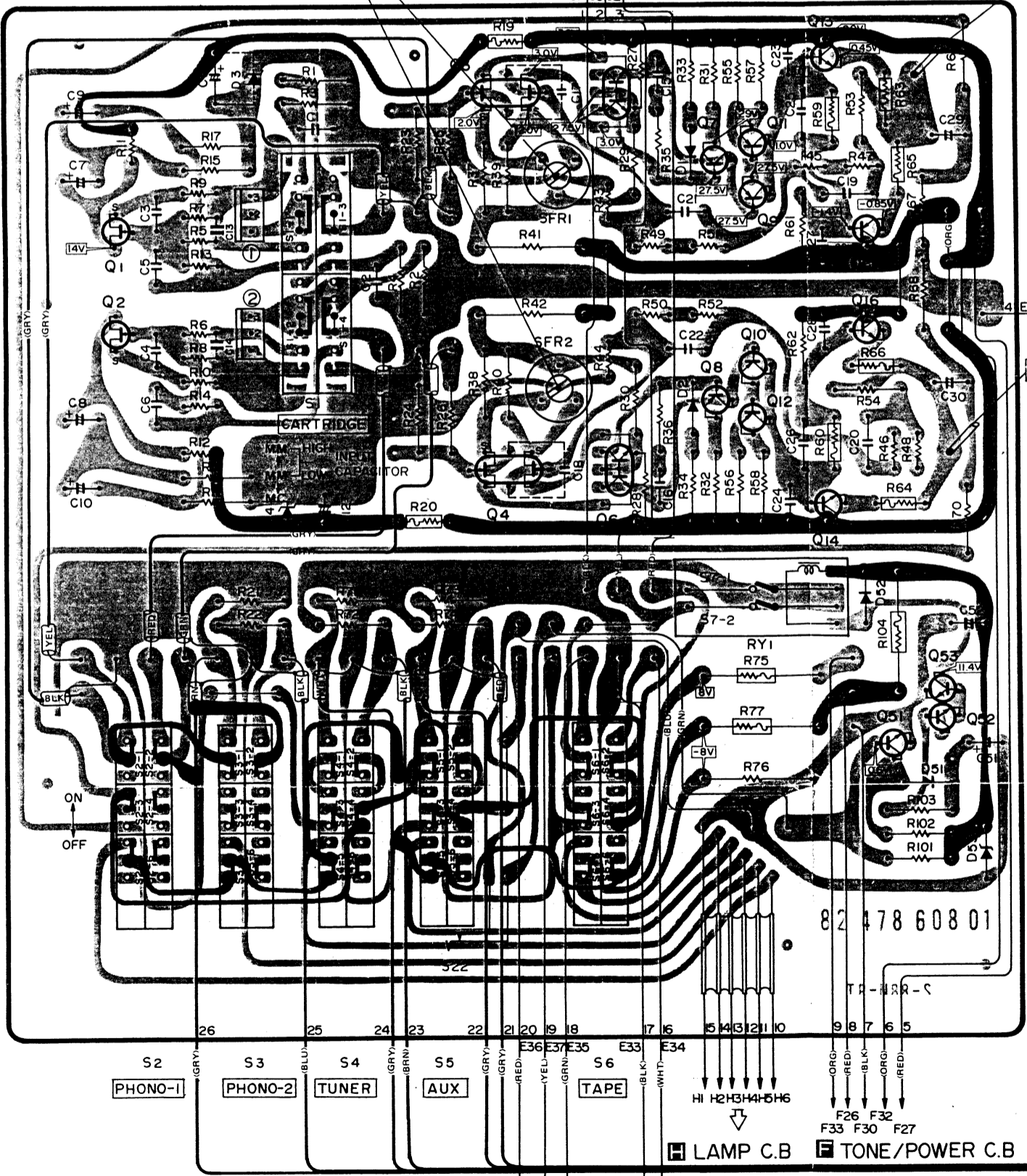
Settings:

- PHONO Input: PHONO 1, (2) short
- SELECTOR Switch: PHONO 1, (2)
- Test point: TP1 (L-ch), TP2 (R-ch)
- Adjustment location: SFR1 (L-ch), SFR2 (R-ch)

Method: Adjust SFR1 and SFR2 so that the voltage level is less than $\pm 0.5V$.

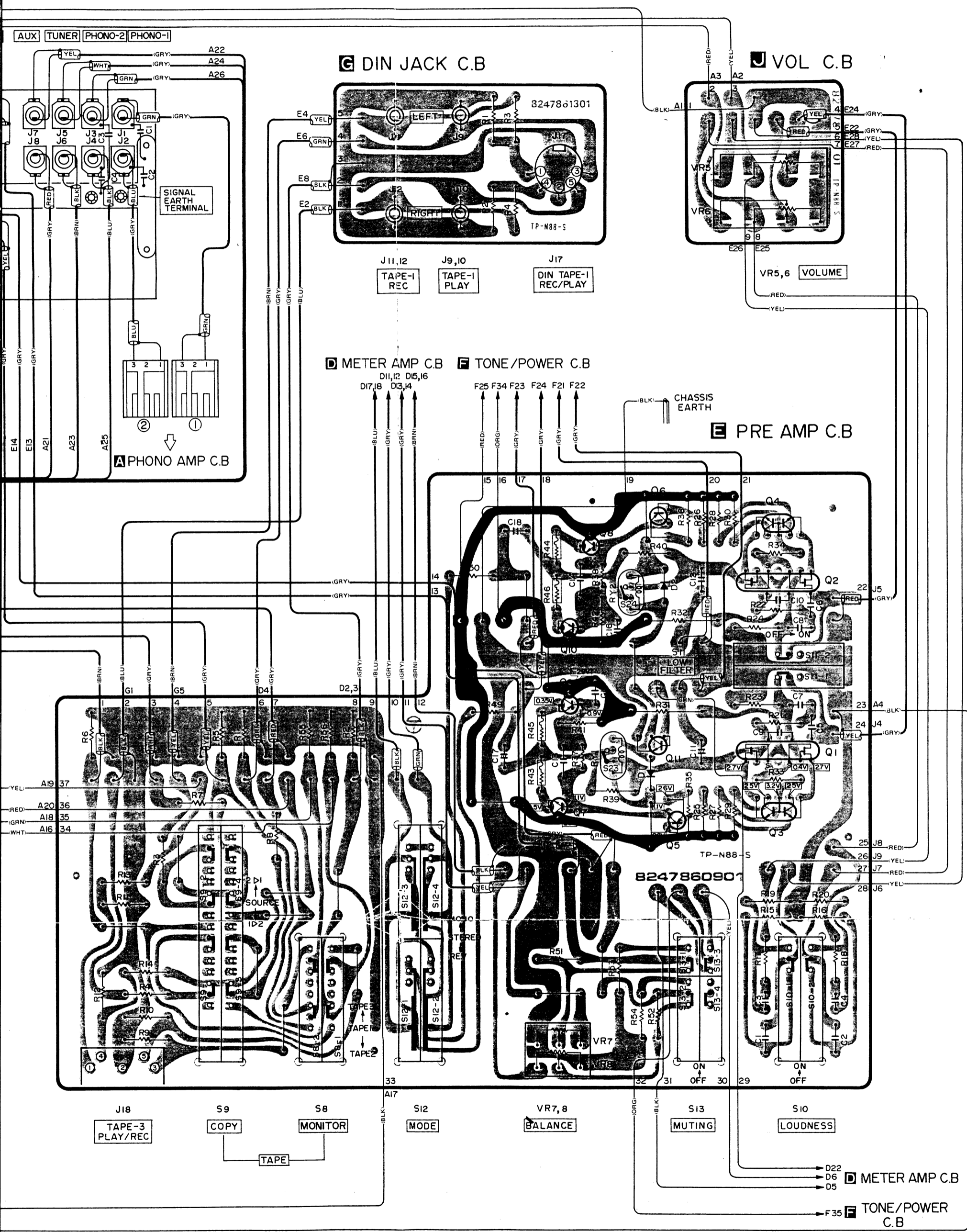
Rating: Less than $\pm 0.5V$.

PHONO AMP C.B



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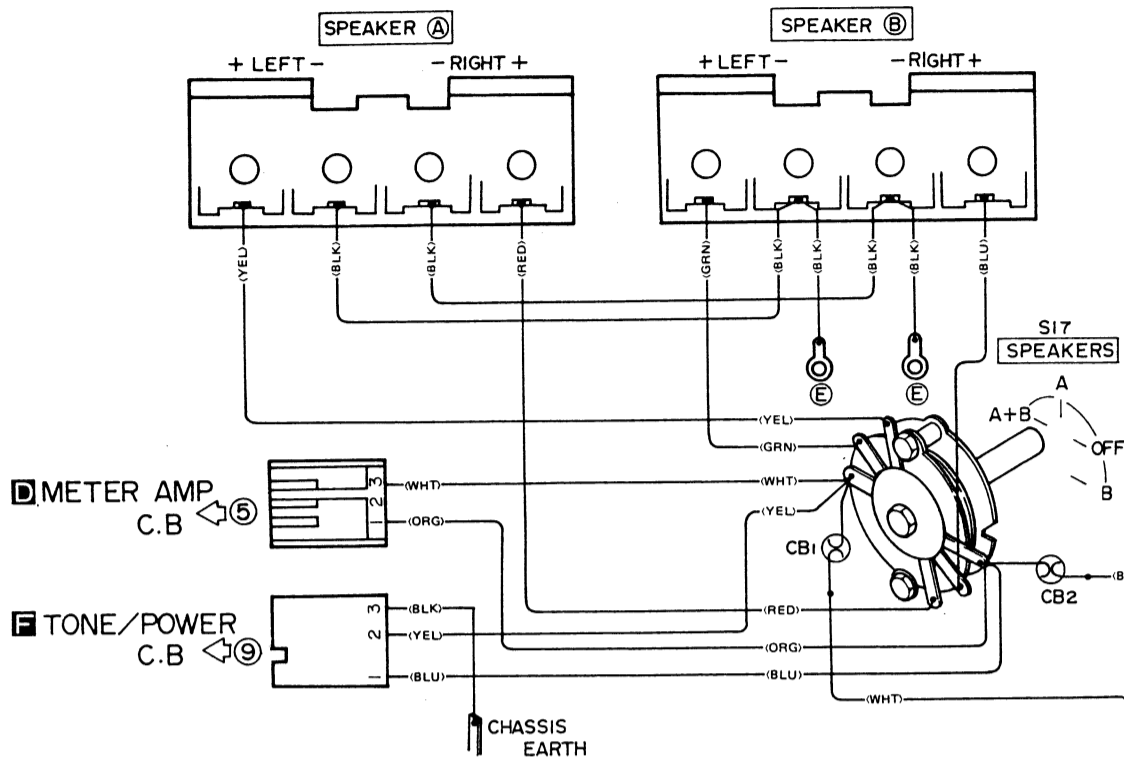
11 12 13 14 15 16 17 18 19 20 21



a tester (20 K ohms/V DC) when there are no signals.

WIRING-2

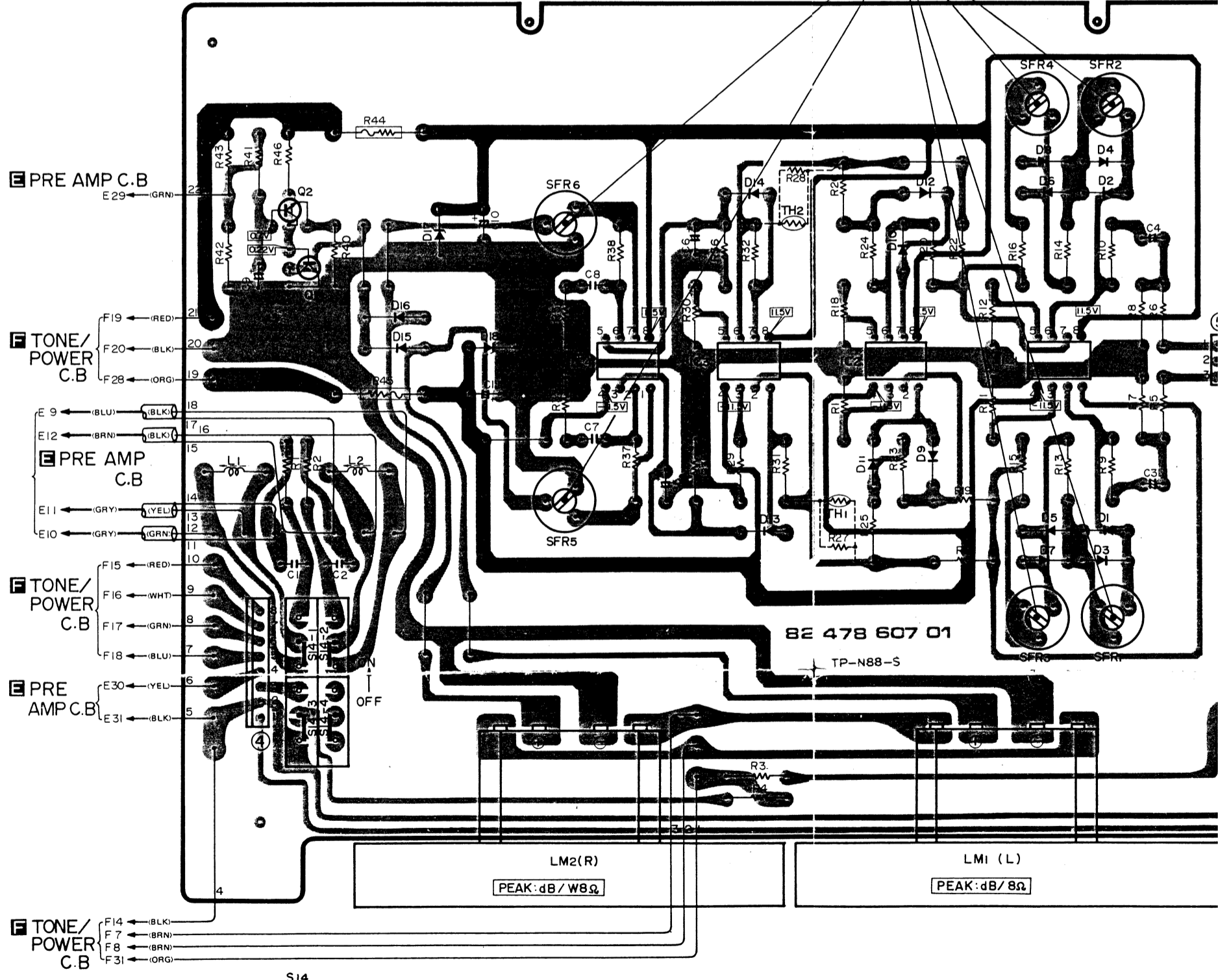
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- 1 Idling Current Adjustment**
- Settings: • Test point: TP5 (L)
 - Adjustment location: SFR1, 3, 5 (L-ch)
 - Method: Connect a DC voltmeter to TP5. Adjust SFR2 so that the output level is 0 dB (10 W).
- 2 Zero potential (DC Balance) Adjust**
- Settings: • Test point: TP3 (L)
 - Adjustment location: SFR1, 3, 5 (L-ch)
 - Method: Connect a DC voltmeter to TP3. Adjust SFR1 so that the output level is less than ±5 mV.
 - Rating: less than ±5 mV.

- 4 Meter Amp. Adjustment**
- Settings: • Input signal level: Aux, 150mV (-16.5 dB), 1kHz, -56.5 dB
 - Output level: 0 dB (10 W), -20 dB, -40 dB
 - SELECTOR Switch: AUX
 - Adjustment location: SFR1, 3, 5 (L-ch) SFR2, 4, 6 (R-ch)
 - Method: Adjust SFR1 and SFR2 so that the output level is 0 dB (10 W).
 - Adjust SFR3, 4 and SFR5, 6 so that the output level is -20 dB (0.1 W) and -40 dB (0.01 W).

D METER AMP C.B.

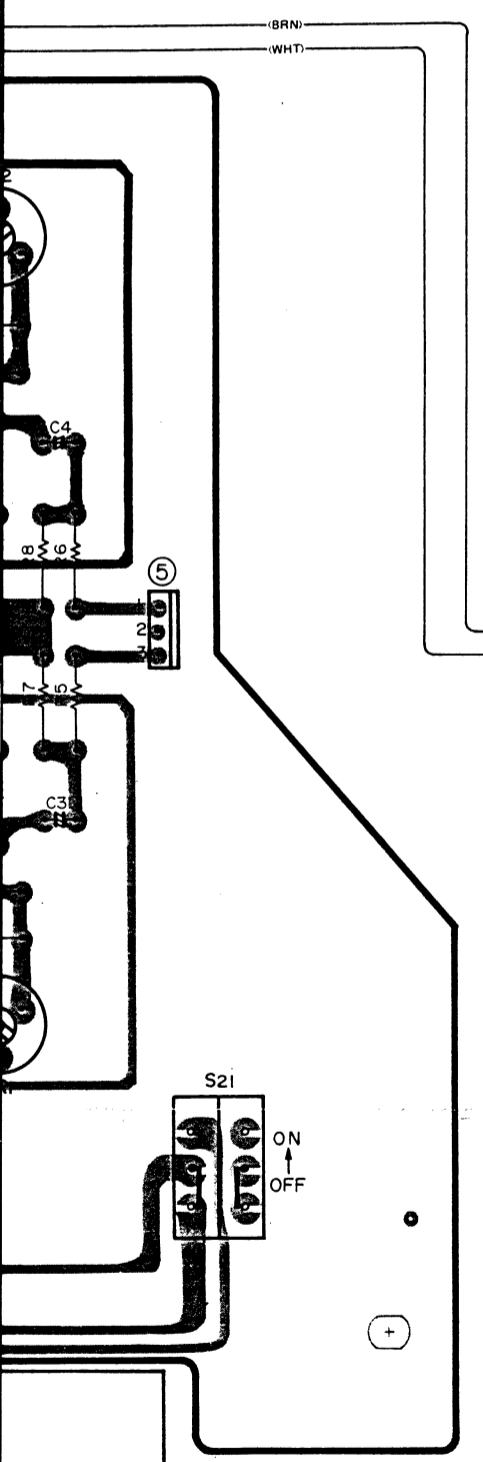
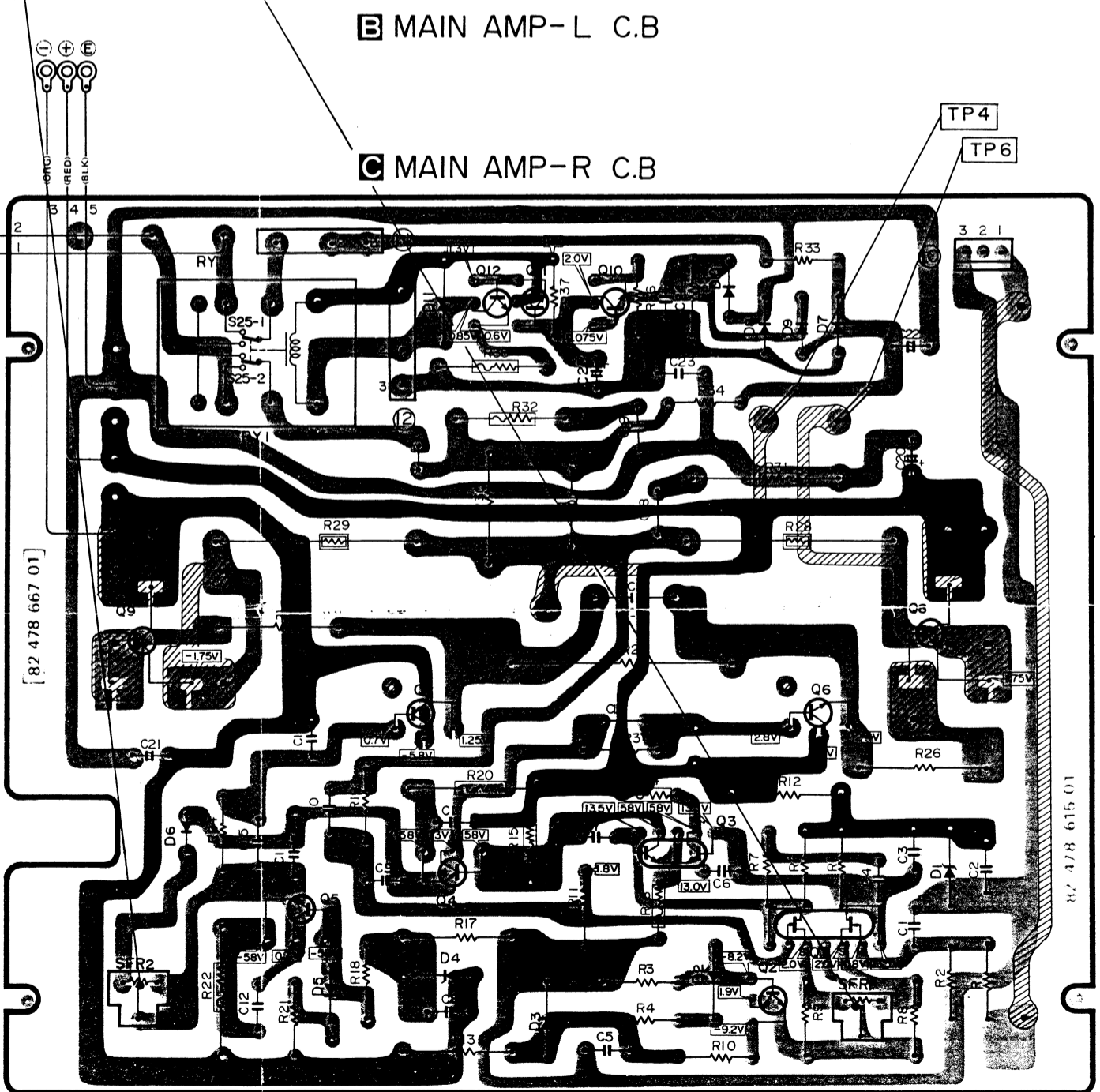
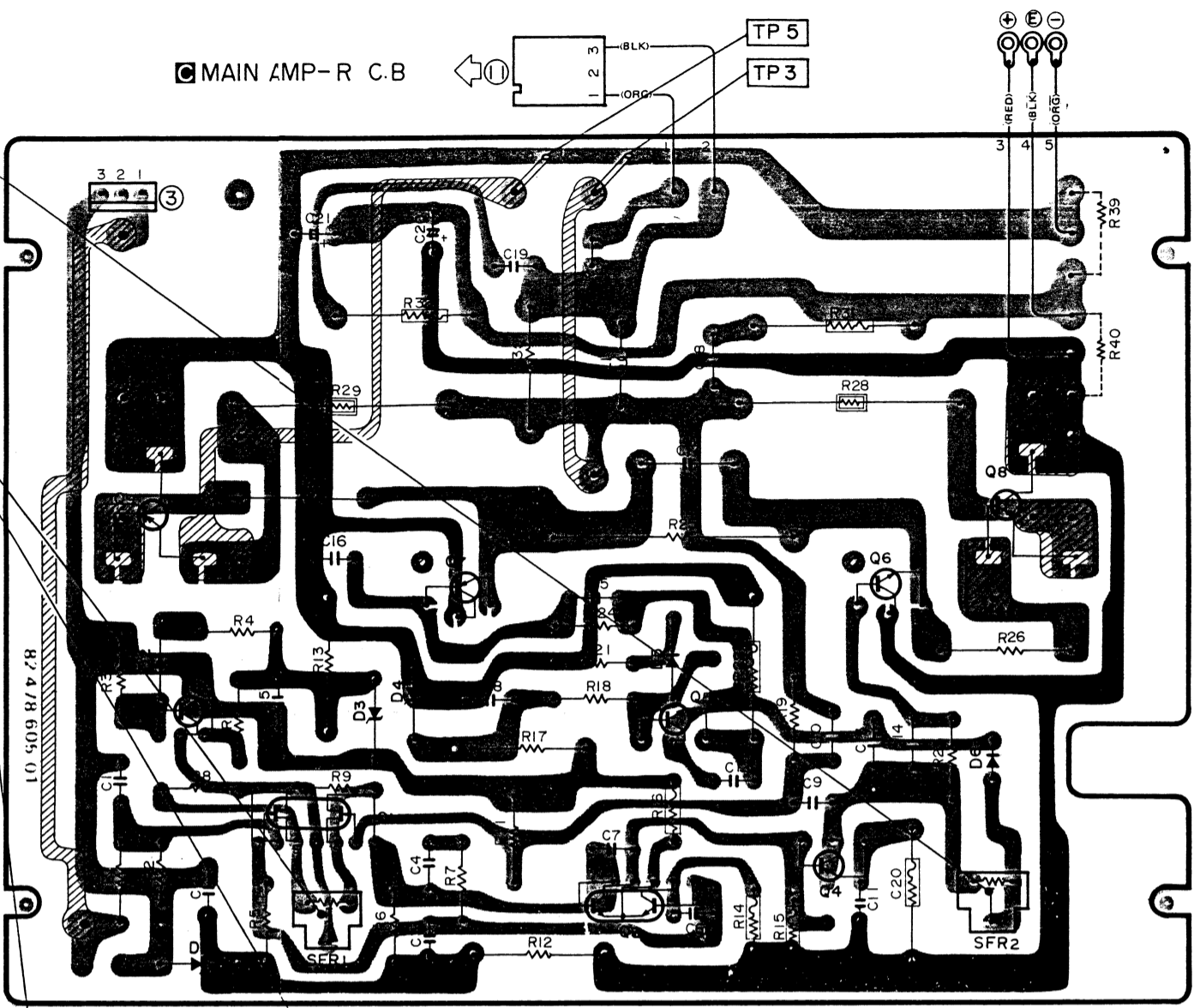


NOTES (1) (2) The voltage is the reference (20 K ohms/V DC) when the

Adjustment
 Test point: TP5 (L-ch), TP6 (R-ch)
 Adjustment location: SFR2
 Connect a DC voltmeter across test points TP 5,6.
 Adjust SFR2 so that the level is 23 mV (50 mA)

(C Balance) Adjustment
 Test point: TP3 (L-ch), TP4 (R-ch)
 Adjustment location: SFR1
 Connect a DC voltmeter across test point TP3,4.
 Adjust SFR1 so that the level is less than ± 5 mV.
 Maximum ± 5 mV.

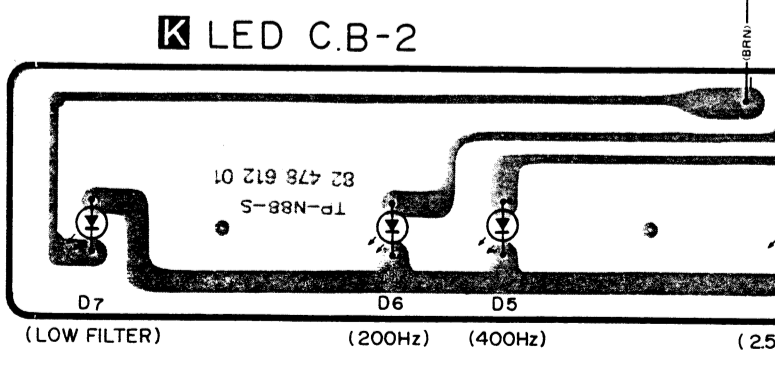
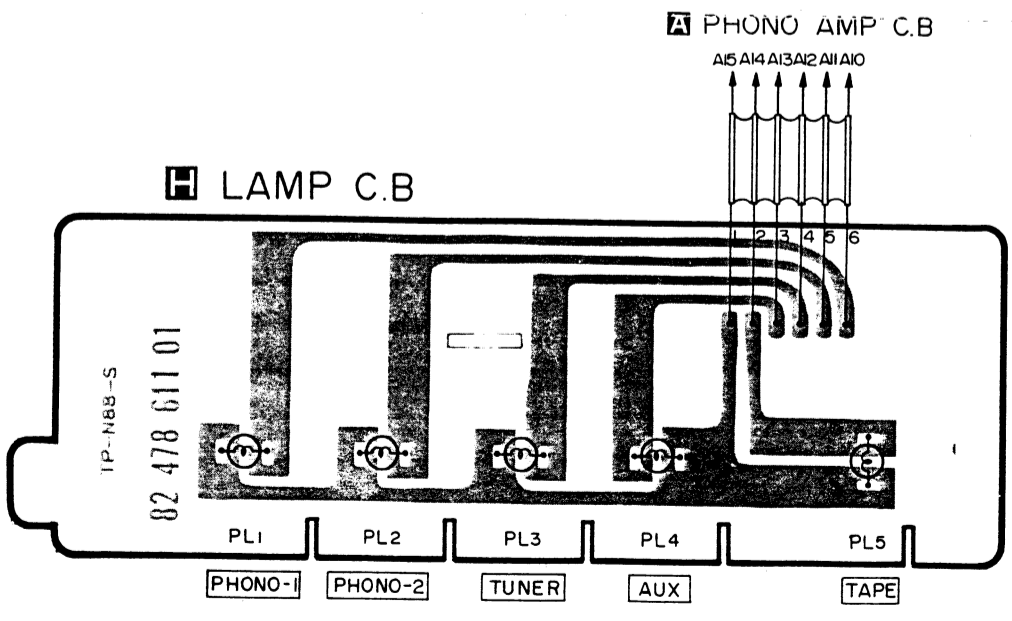
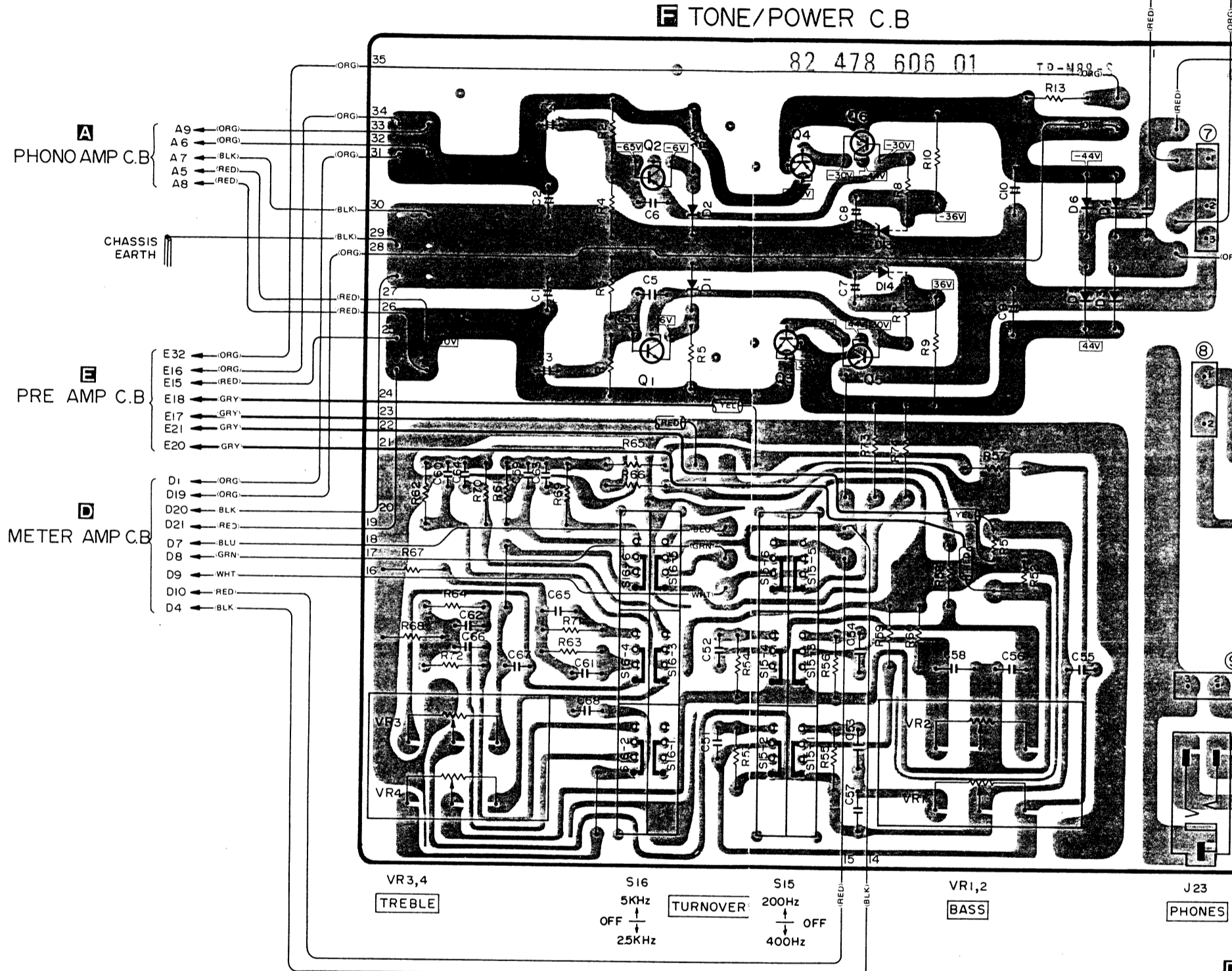
6.5 dB, 1kHz, -36.5
 -40 dB
 (L-ch)
 (R-ch)
 output level is 0 dB
 the output level is -20



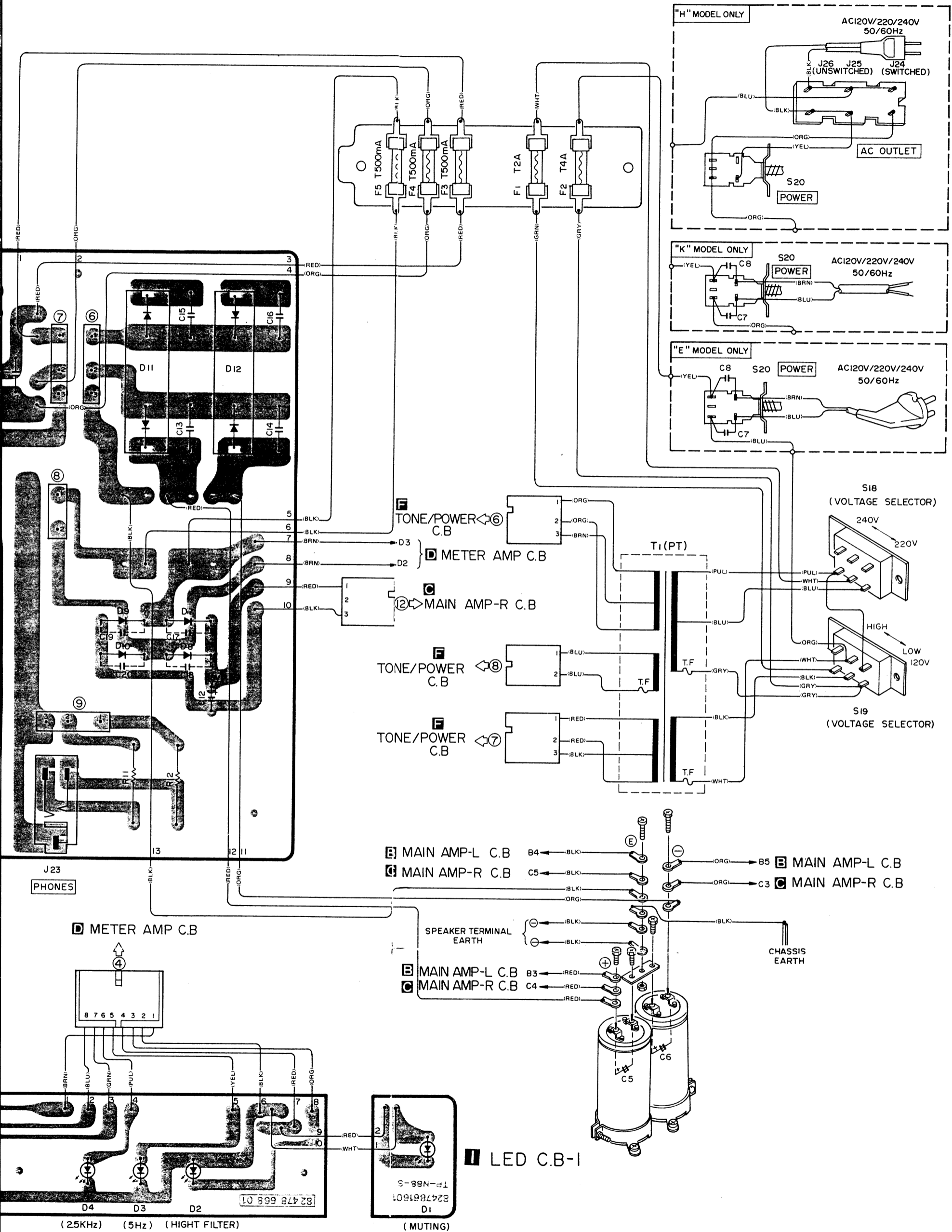
is the reference value measured with a tester (V DC) when there are no signals.

WIRING-3

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O



NOTES (1) B (+) Pattern B (-) Pattern Others pattern (2) The voltage is the reference value measured with a tester (20V)



with a tester (20 K ohms/V DC) when there are no signals

ELECTRICAL MAIN PARTS LIST


Table with columns: Symbol No., Part No., Description. Section: << PHONO AMP CIRCUIT BOARD SECTION >>. Includes parts like PCB-A, Q1,2, Q3,4, Q5,6, Q7,8,9,10, Q11,12, Q13,14, Q15,16, Q51,52, Q53, D1,2,51,52, D3,4, D5,3, RY1,S7, S1, S2,3,4,5,22, S6, SFR1,2, PIN-1,2, PCB-L, R5,6,9,10, R49,50, R43,44, R7,8, R76, R13,14, R45,46, R11,12, R41,42, R51,52, R47,48, R63,64,65, R66, R19,20, R75, R77, R59,60, R104, C29,30, C21,22, C19,20, C7,8,9,10, << MAIN AMP-L CIRCUIT BOARD SECTION >>, PCB-B, Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, D1, D2,5, D3, D4, D6, L1, SFR1,2.

Table with columns: Symbol No., Part No., Description. Includes parts like PIN-3, R30, R25, R12, R13, R17, R28,29, R31, R32, R14, R20, R22, R15, R16, C20,21, << MAIN AMP-R CIRCUIT BOARD SECTION >>, PCB-C, Q1, Q2,10,11, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q12, D1, D2,5, D3, D4, D6, D7,8,9,10, D11, L1, SFR1,2, PIN-10, PIN-11,12, RY1,S25, R30, R25, R12, R13, R17, R28,29, R38, R31, R32, R14, R20, R22, R15, R16, C20,21, C22.

Table with columns: Symbol No., Part No., Description. Section: << METER AMP CIRCUIT BOARD SECTION >>, PCB-D, IC1,2,3,4, Q1, Q2, D1,2,3,4, 5,6,7,8, 9,10,11,12, 13,14, D15,16, D17,18, L1,2, LM1,2, S14, S21, TH1,2, SFR1,2, SFR3,4, SFR5,6, PIN-5, PIN-4, R44,45, C3,4, C5,6, << PRE AMP CIRCUIT BOARD SECTION >>, PCB-E, Q1,2, Q3,4, Q5,6, Q7,8, Q9,10, Q11, D1,2, RY1,S23, RY2,S24, J18, VR7,8, S8, S9, S10, S11, S12, S13, R31,32, R37,38, R43,44,45,46, C11,12,17,18, << TONE/POWER CIRCUIT BOARD SECTION >>, PCB-F, Q1,5, Q2,6, Q3, Q4, D1,2, D3,4,5,6, 7,8,9,10, D11, D12, D13,14.

Table with columns: Symbol No., Part No., Description. Includes parts like VR1,2, VR3,4, J23, S15,16, PIN-8, PIN-6,7,9, R9,10,73,74, << DIN JACK CIRCUIT BOARD SECTION >>, PCB-G, J1,2,3,4, 5,6,7,8, 9,10,11,12, 13,14,15,16, 17,19,20,21, 22, << LAMP CIRCUIT BOARD SECTION >>, PCB-H, PL1,2,3,4, PL5, << LED CIRCUIT BOARD-1 SECTION >>, PCB-I, D1, << VOL CIRCUIT BOARD SECTION >>, PCB-J, VR5,6, << LED CIRCUIT BOARD-2 SECTION >>, PCB-K, D2,7, D3,4,5,6, << MISCELLANEOUS >>, T1, T1, F1, F1, F2, F2, F3,4,5, J24,25,26, S17, S18,19, S18,19.

Symbol No.	Part No.	Description
S20	87-031-408-01	Push switch (POWER)
CB1,2	82-478-631-01	Circuit braker
CON-3	82-478-649-01	Connector ass'y, 3P
CON-10	82-478-650-01	Connector ass'y, 3P
CON-2	82-478-651-01	Connector ass'y, 3P
CON-1	82-478-652-01	Connector ass'y, 3P
CON-5	82-478-653-01	Connector ass'y, 3P
CON-9	82-478-655-01	Connector ass'y, 3P
CON-12	82-478-656-01	Connector ass'y, 3P
CON-11	82-478-657-01	Connector ass'y, 3P
CON-4	82-478-654-01	Connector ass'y, 8P
	87-033-148-01	Speaker terminal screw (SPEAKER (A), (B))
	82-473-677-11	Transistor socket (Q8,9)
	87-034-884-01	AC power cord (E model only)
	87-034-872-01	AC power cord (K model only)
	87-034-885-01	AC power cord (H model only)

Symbol No.	Part No.	Description
C5,6	82-478-646-01	<Capacitors> 22000 μ F 63V Electrolytic
 C7,8	84-190-622-01	0.1 μ F 250V Line capacitor



Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.