KENWOOD®
HI/FI STEREO COMPONENTS

SERVICE MANUAL

L-01A

An item of adjustment is written in three languages - English, Frenche and German.

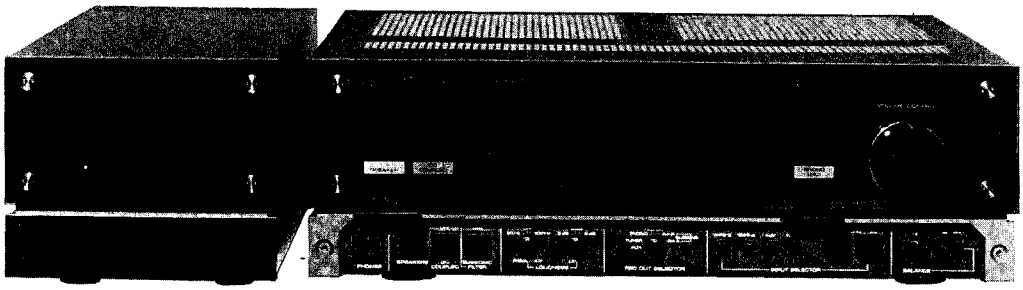
Un article sur réglages est écrit en trois langues, Anglais, Français et Allemand.

Ein Artikel der Abgleich wird auf drei Sprachen, Englische, Französisch und Deutsch geschrieben.

Caution
- Do not touch the copper plate with naked hand because it is liable to rust. If fingerprints are left on the plate, remove them with a steel brush.
- The cabinet is made of nylon resin. Do not place any hot object such as a soldering iron on the cabinet.

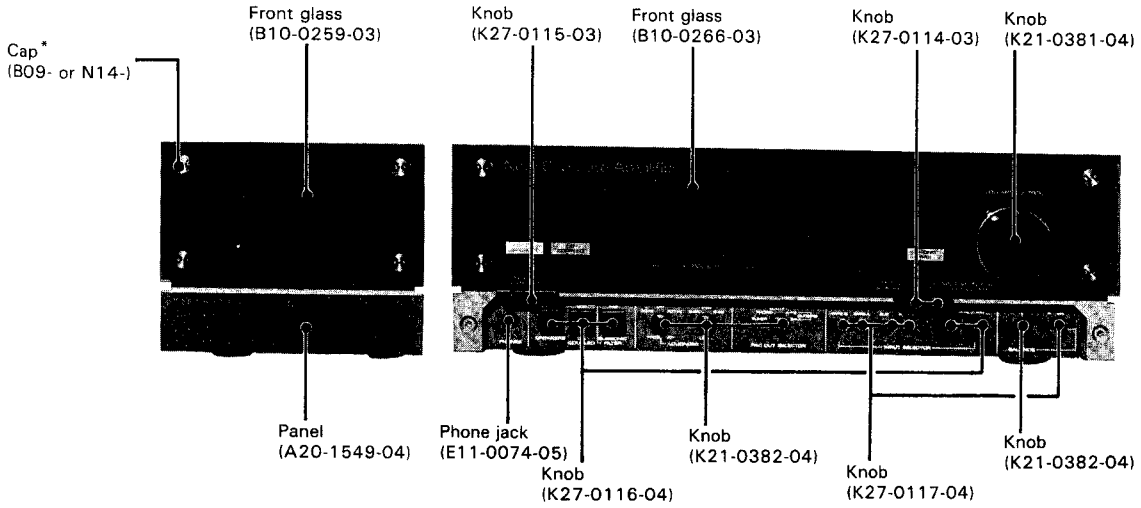
Avertissement
- *Ne pas toucher la plaque de cuivre avec les mains nues car elle est susceptible de rouiller. Si des empreintes digitales sont laissées sur la plaque, les nettoyer à la brosse métallique.*
- *Le coffret est en résine de nylon. Ne pas placer d'objets chauds tel qu'un fer à souder sur le coffret.*

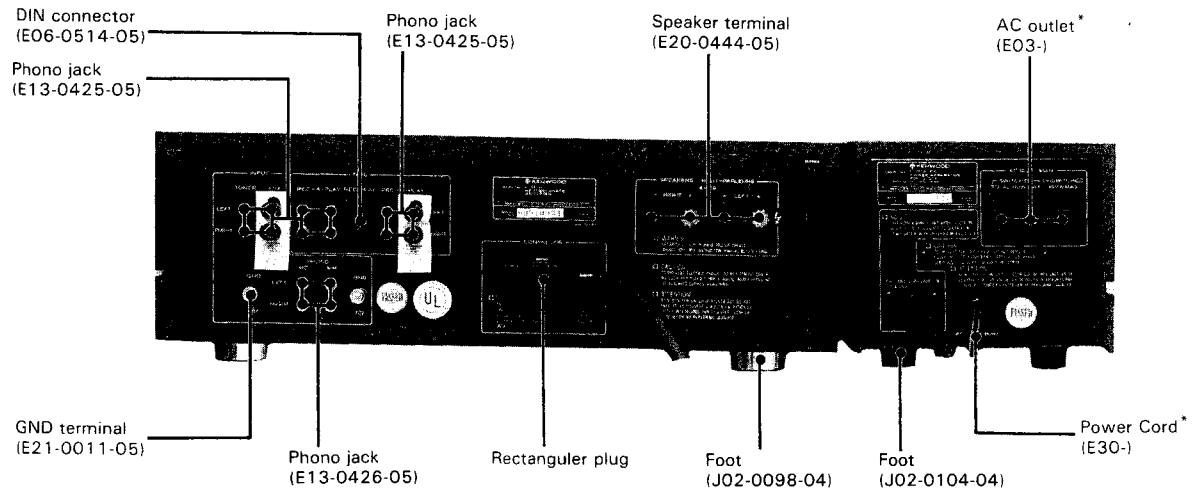
Vorsicht
- Die Kupferplatte icht mit der bloßen Hand berühren, well diese sonst rosten kann. Bleiben Fingerabdrücke auf der Platte zurück, diese mit einer Stahlbürste entfernen.
- Das Gehäuse besteht aus Nylonharz. Keinen heißen Gegenstand, wie z.b. ein Bügeleisen, auf das Gehäuse stellen.



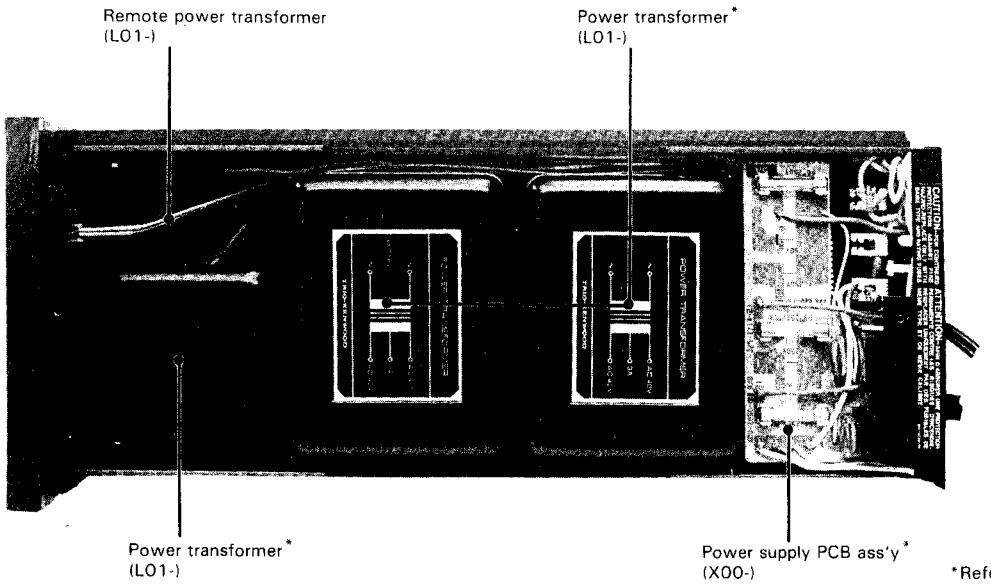
NEW SEPARATE AMPLIFIER

EXTERNAL VIEW / INTERNAL VIEW





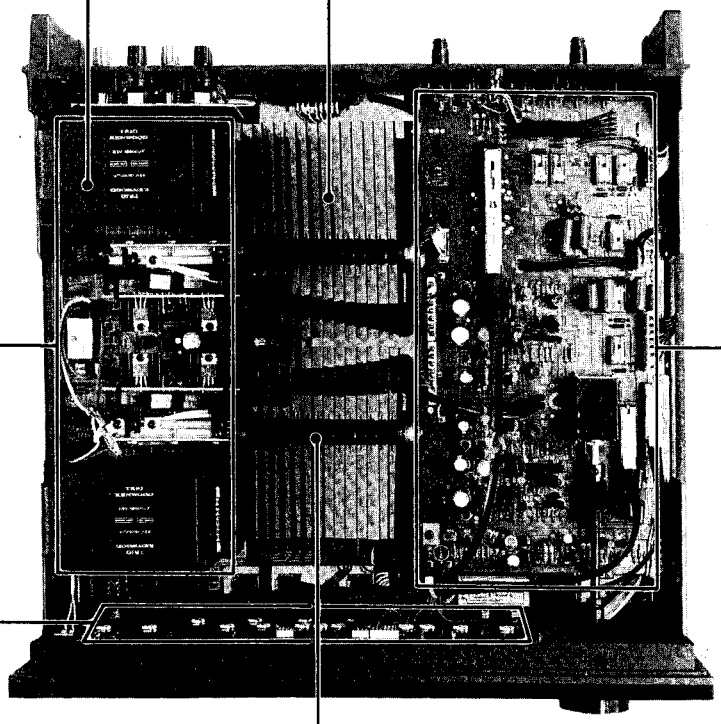
[POWER SUPPLY UNIT]

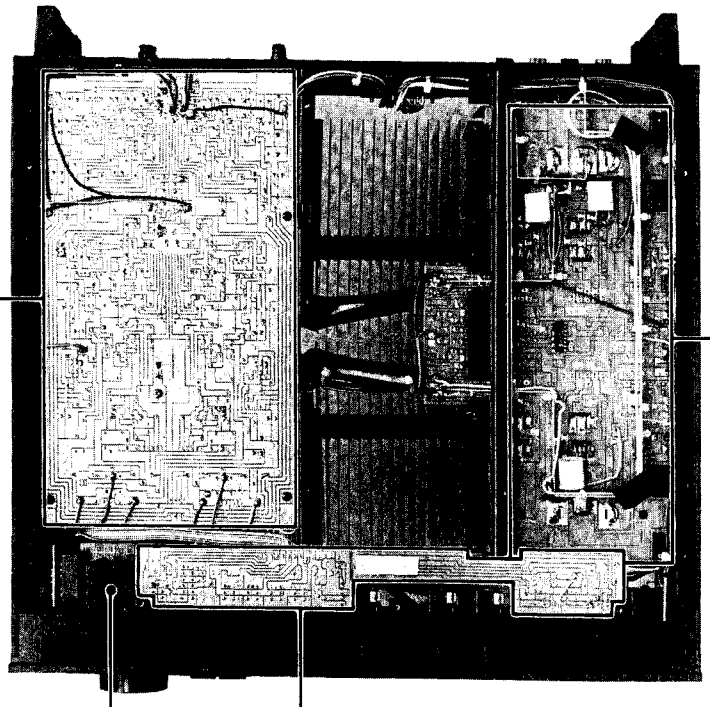


*Refer to parts list.

INTERNAL VIEW

[AMPLIFIER UNIT]



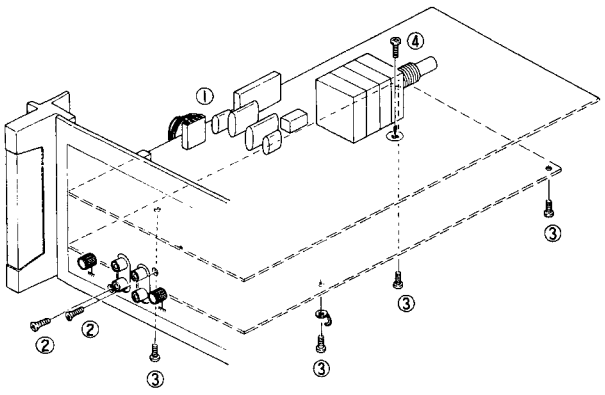


*Refer to parts list

DISASSEMBLY FOR REPAIR

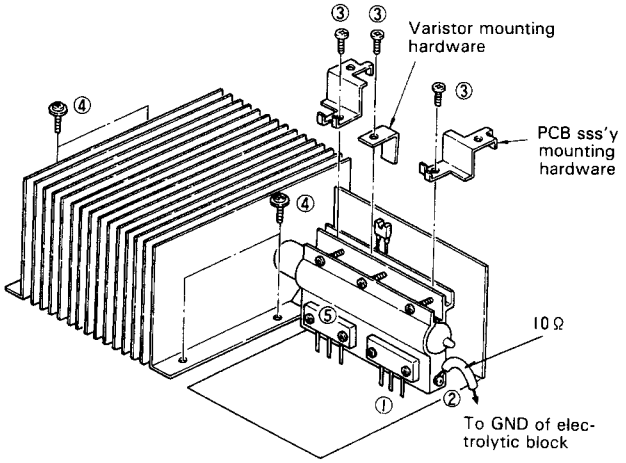
1. Preamp PCB ass'y Detachment

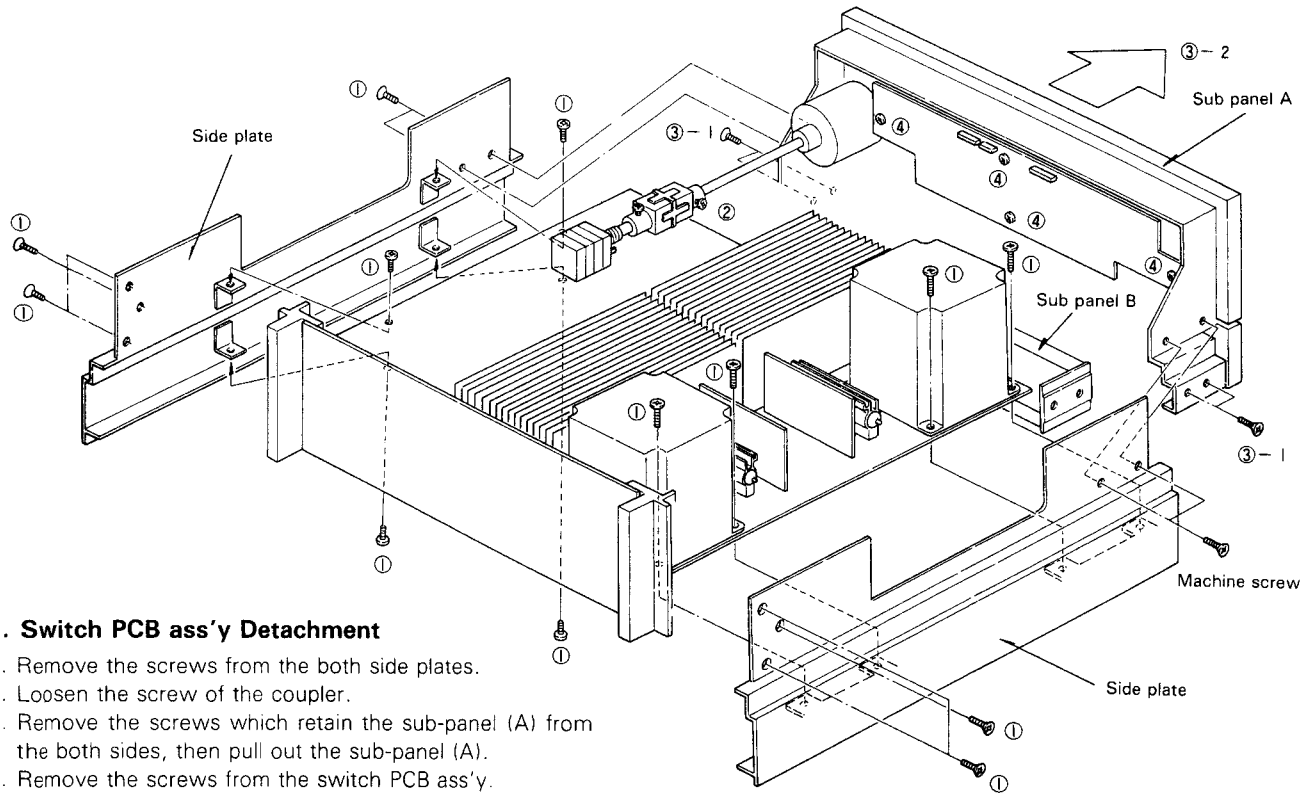
1. Pull out the connector.
2. Remove the screws from the PHONO terminals on the rear panel.
3. Remove the screws from the PC board from the bottom.
4. Remove the screw from the copper plate of the preamplifier.



2. Power Transistors Replacement

1. Unsolder the legs of the power transistors from the bottom side.
2. Remove the screw mounting the 10 Ω wire from the side of the heat sink.
3. Remove the varistor mounting hardware and the PCB mounting hardware.
4. Remove the heat sink mounting screws.
5. Replace the power transistors.





3. Switch PCB ass'y Detachment

1. Remove the screws from the both side plates.
2. Loosen the screw of the coupler.
3. Remove the screws which retain the sub-panel (A) from the both sides, then pull out the sub-panel (A).
4. Remove the screws from the switch PCB ass'y.

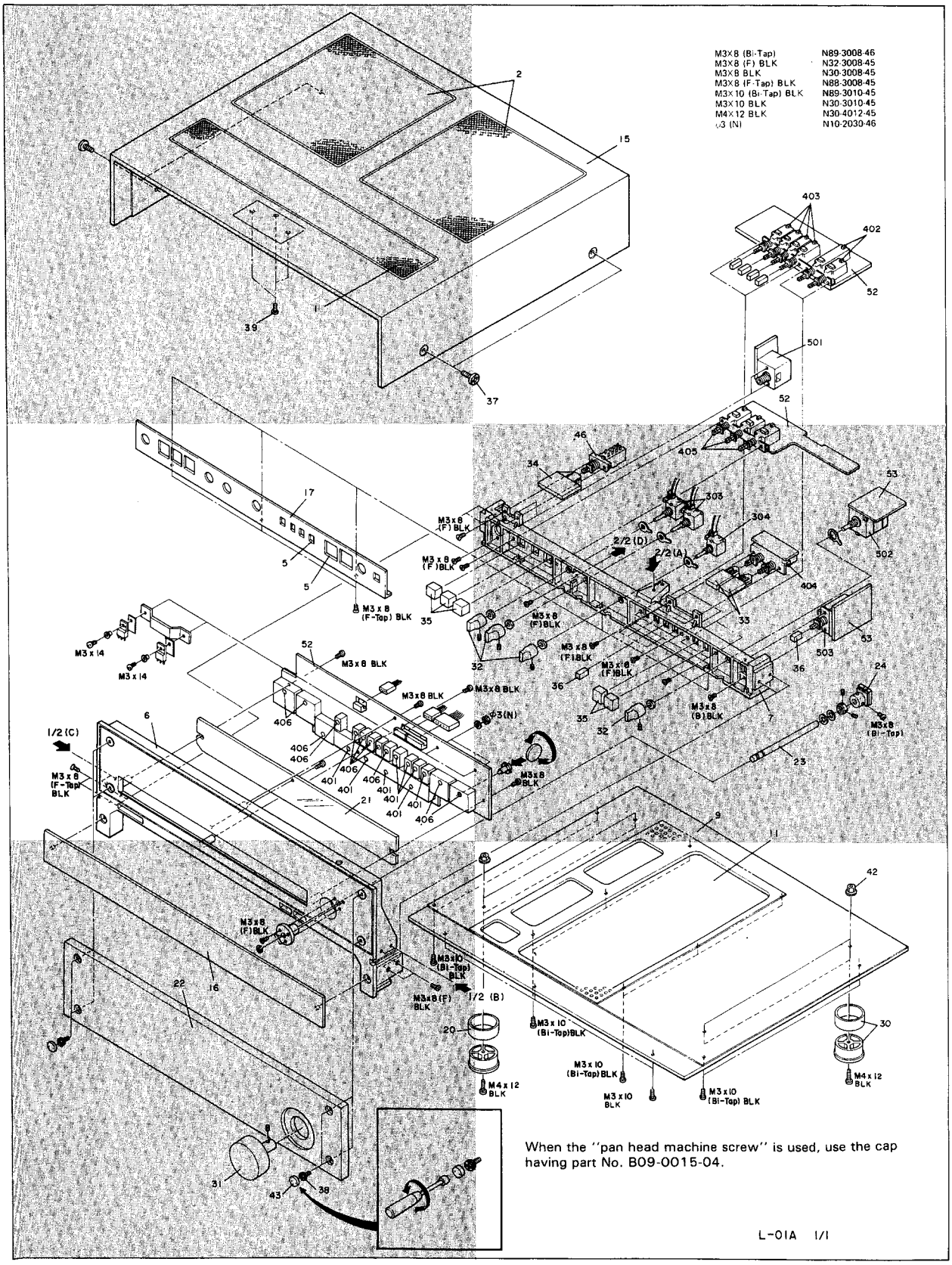
Note:

To replace the face panel, after steps 1—3, remove the screws which retain the panel from the bottom side.

To remove the knobs (LOUDNESS, REC OUT, BALANCE ON/OFF), loosen the hex setscrew using a hex wrench through the access holes in the bottom side of sub-panel B.

EXPLODED VIEW

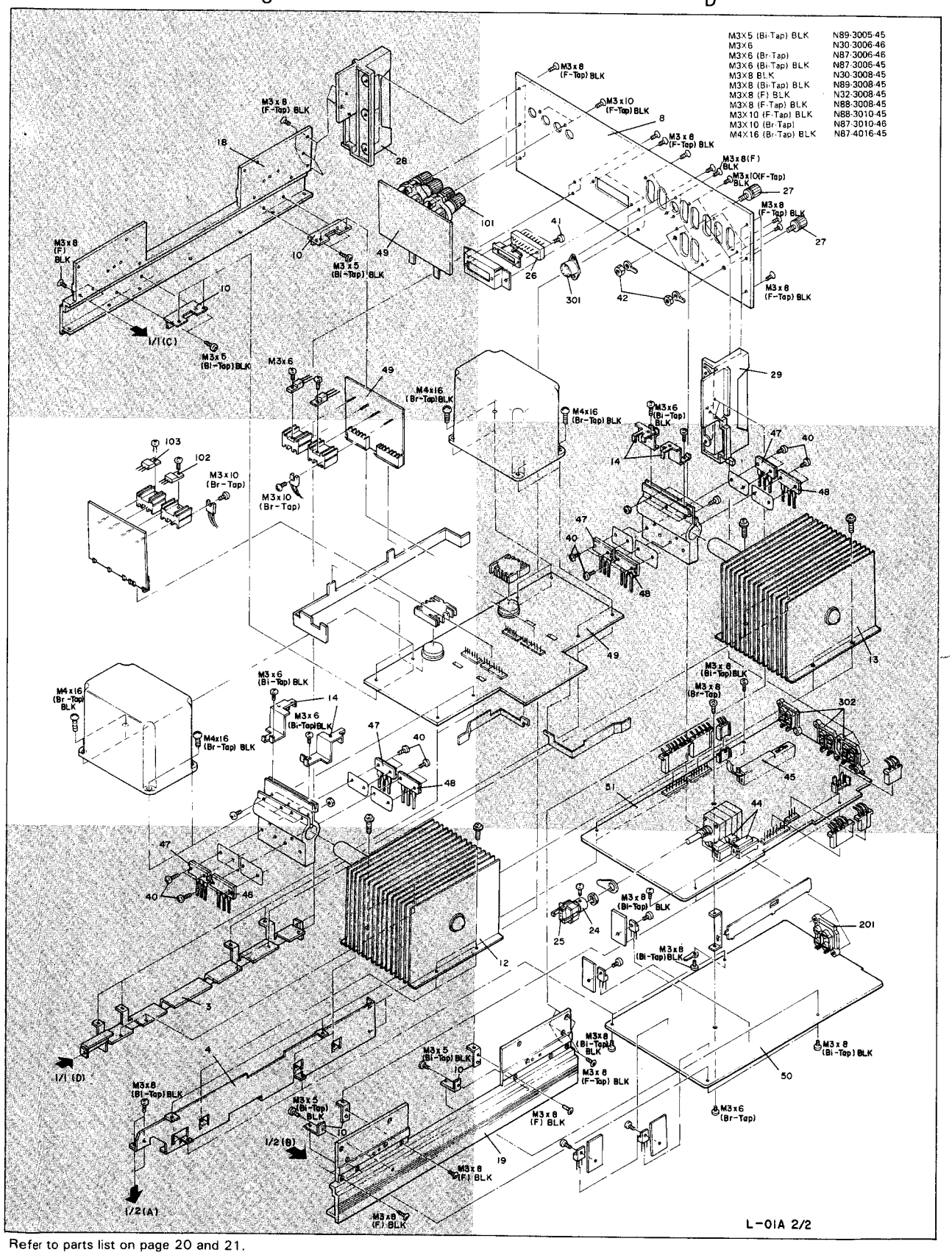
L-01A



Refer to parts list on page 20 and 21.

EXPLODED VIEW

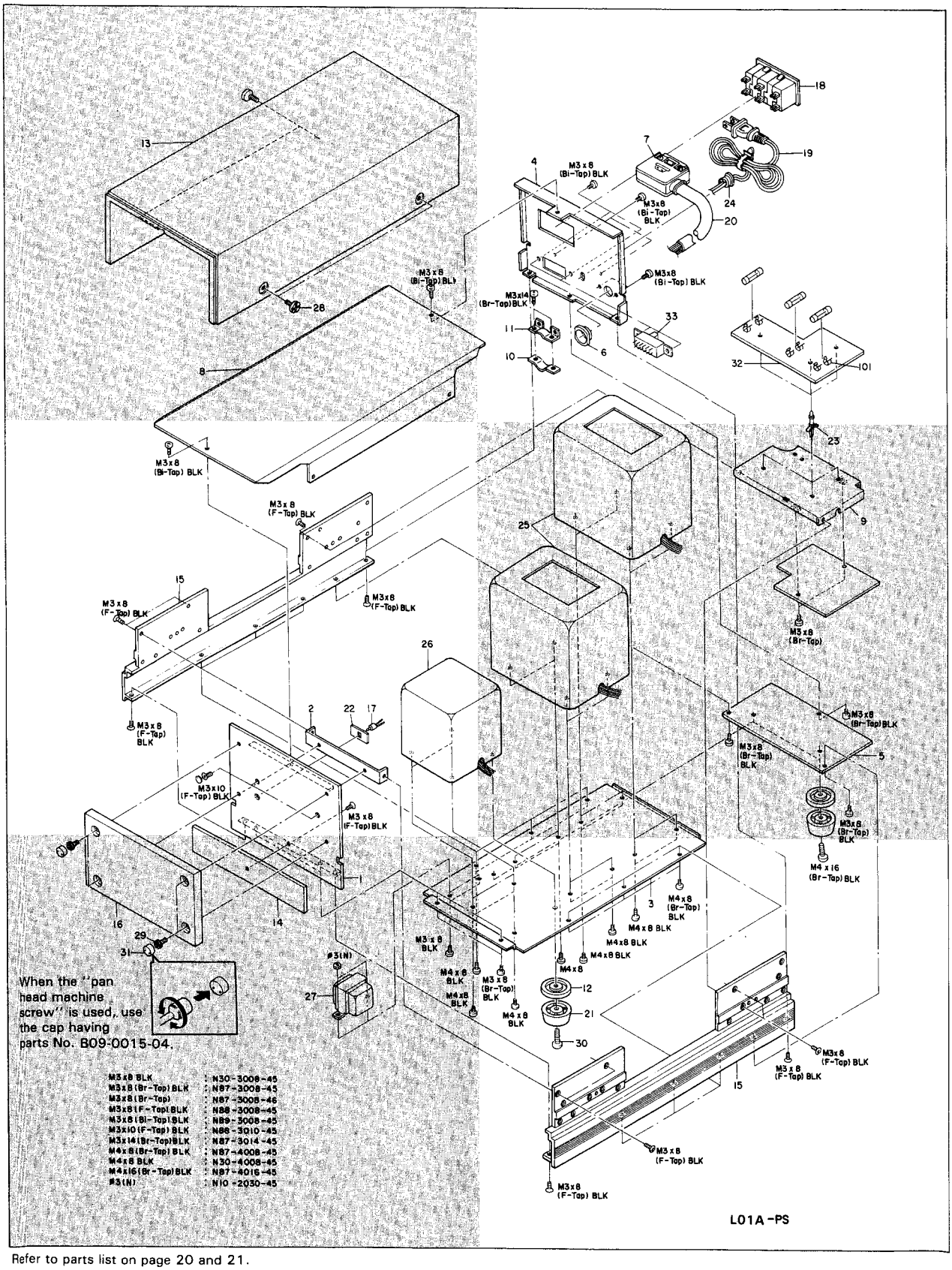
L-01A



Refer to parts list on page 20 and 21.

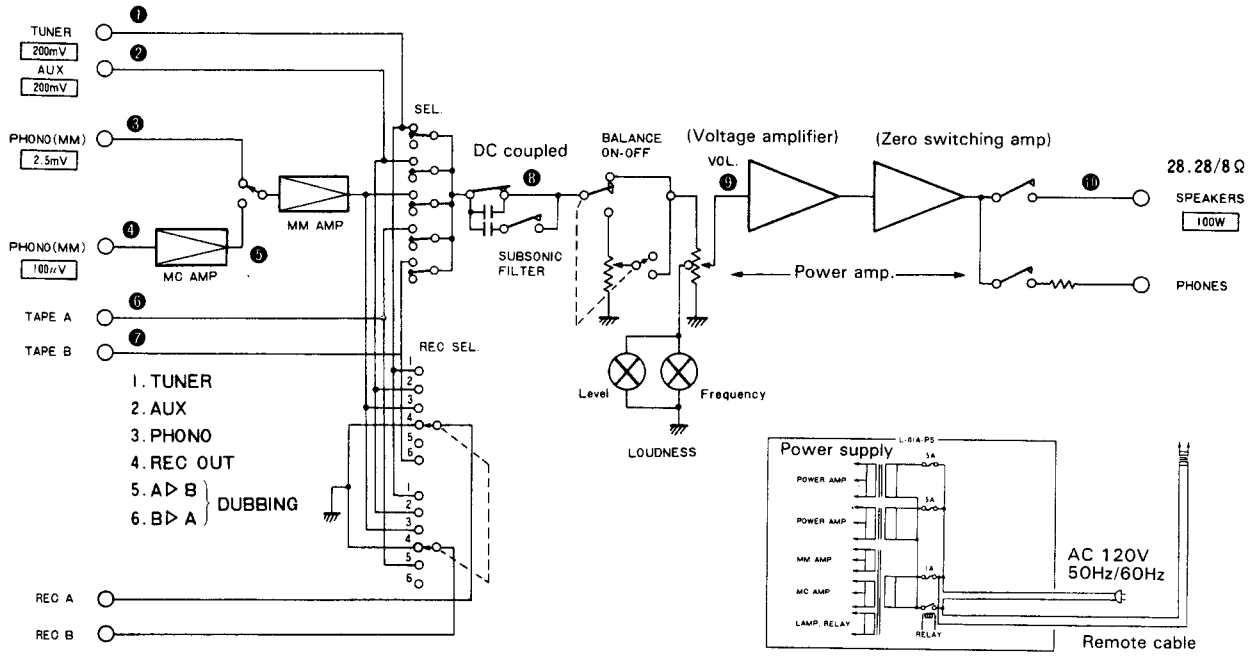
EXPLODED VIEW

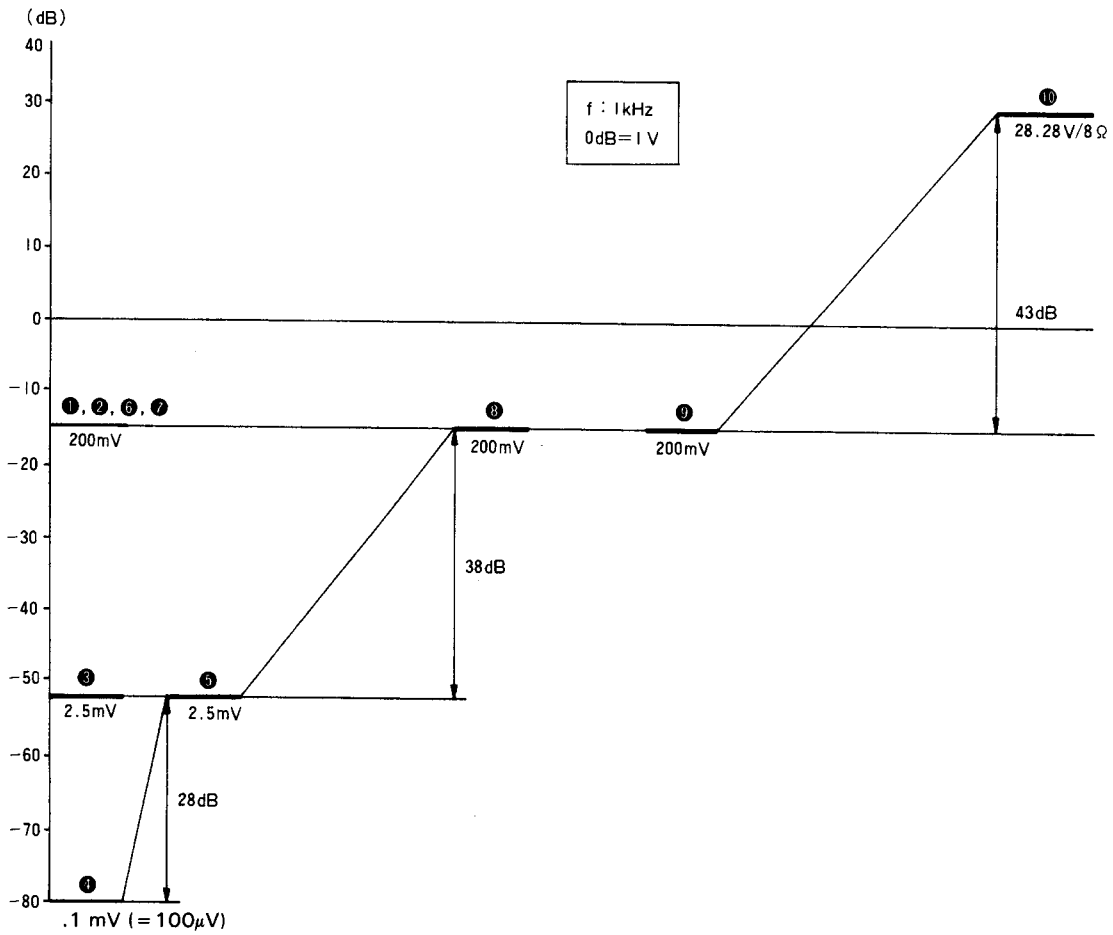
L-01A-POWER SUPPLY



Refer to parts list on page 20 and 21.

BLOCK DIAGRAM





CIRCUIT DESCRIPTION

In the L-01A, an ASO protection circuit, a zero-switching circuit, a relay delay circuit and a shunt regulator in the preamplifier are employed. For explanation of circuit operation of the parallel input circuit, refer to the KHA-50 service manual. For explanation of circuit operation of the constant current circuit, differential amplifier and current mirror circuit, refer to the service manual of the L-07C and L-07M.

1. ASO Protection Circuit

When an excessive current flows through the power transistors, a voltage appears across the protection resistor, 0.1 Ω connected to the collectors of the power transistor Q1, Q3, Q5, Q7. When this occurs at the PNP transistors, a voltage is applied to the base of the ASO transistor Q1. Therefore, Q1 is turned ON, then a voltage is applied to the base of Q3, and Q3 is turned ON, so that the audio signal fed to Q7 is limited.

Since the base of Q15 is connected to the collector of Q3, the base voltage of Q15 drops when Q3 is ON. Therefore, Q15 is turned ON. Thus, a voltage (reference value: 1.8 V) is applied to Pin 3 (0 V detection terminal) of IC1, resulting in release of the protection relays RL2 and RL3.

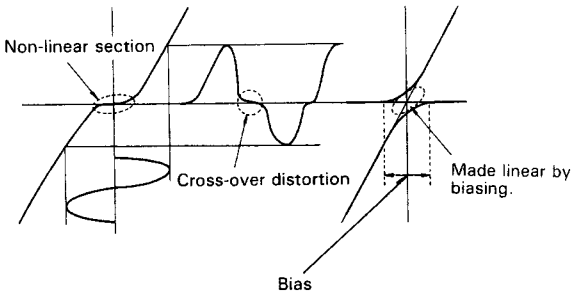
When an excessive current flows through the NPN transistors, the voltage is applied to the base of Q5. When Q5 is ON, the audio signal fed to Q9 flows through Q5, so that the base current of Q9 decreases.

2. Zero-switching Circuit

Ordinary power amplifiers are operated in class B because of its high efficiency. However, switching distortion and cross-over distortion are generated.

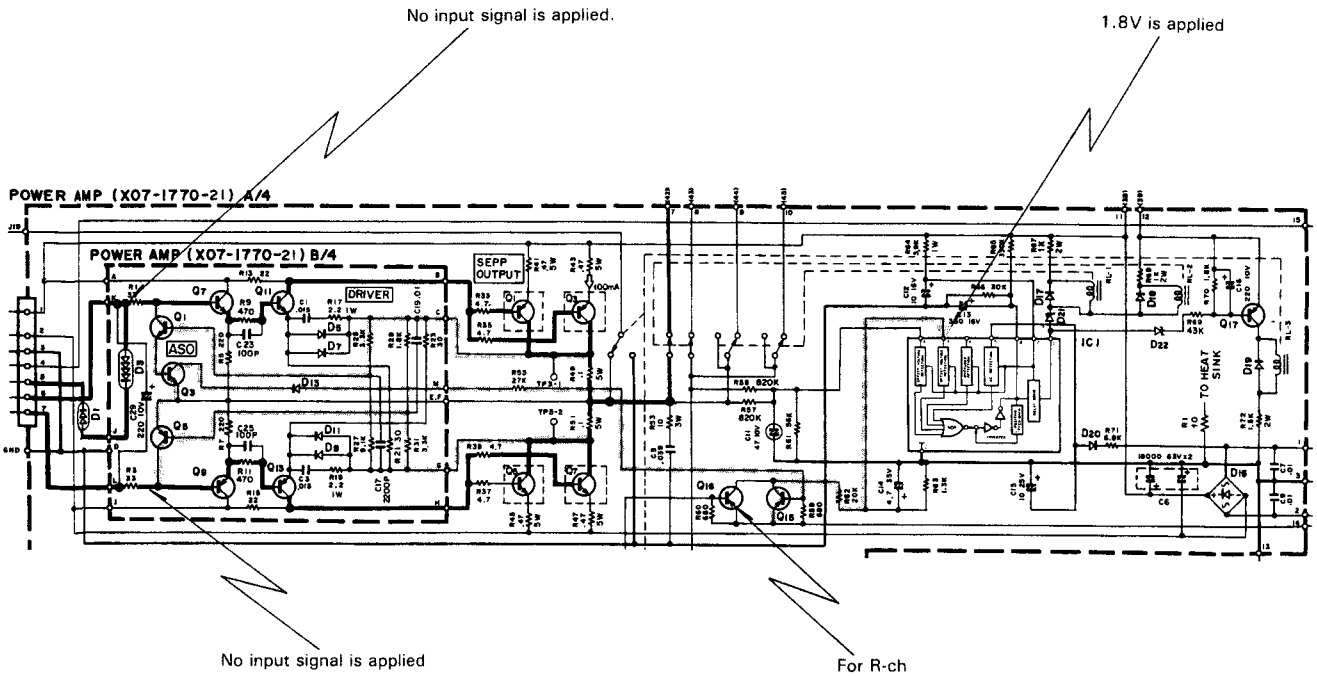
The cross-over distortion is generated because a class B push-pull amplifier uses the non-linear section of the input-output characteristic curve when input level is low.

L01A9f



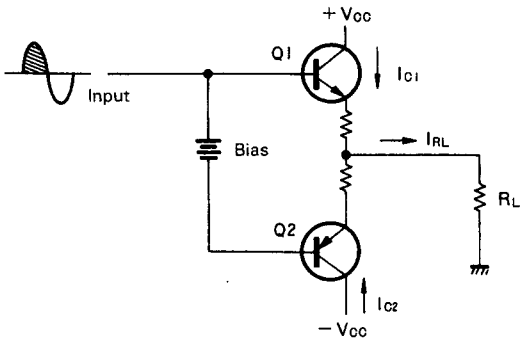
To reduce the cross-over distortion, the power transistors are appropriately biased so that the non-linear section is cancelled. Thus, the amplification is operated in close to class AB.

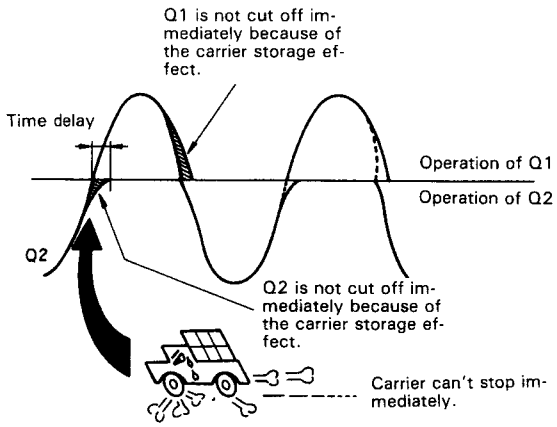
On the other hand, the switching distortion is generated because the switching ON/OFF timing of the SEPP transistors differs. The output stage of the power amplifier generally has SEPP connection.



<ASO Protection Circuit>

CIRCUIT DESCRIPTION

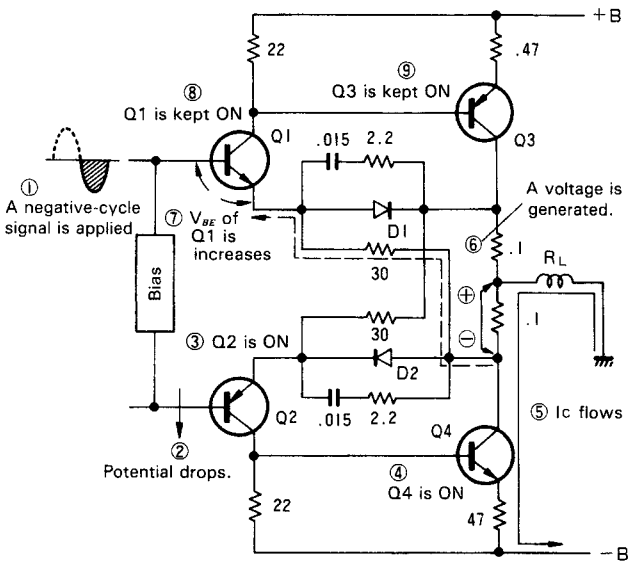




In the above figure, when such a sine wave signal is applied to the input, Q1 is ON and Q2 is OFF during the positive half period of the input signal, and during the negative half period Q1 is OFF and Q2 is ON. However, the output current is not switched smoothly when the input signal changes from positive to negative (or from negative to positive) because of the carrier storage effect.

When the input signal changes from negative to positive, Q1 is turned ON immediately but Q2 is not turned OFF because of the carrier storage effect. By the time Q2 is completely turned OFF, a fairly large current will already be flowing through Q1. This phenomina will be seen in the opposite transition.

To reduce distortion caused by the carrier storage effect, a certain amount of current is made to flow through the transistors even while they are nominally OFF. This type of amplifier is called the zero switching amplifier. The basic circuit of the output stage of the L-01A is shown in the following.



<Zero-switching circuit operation>

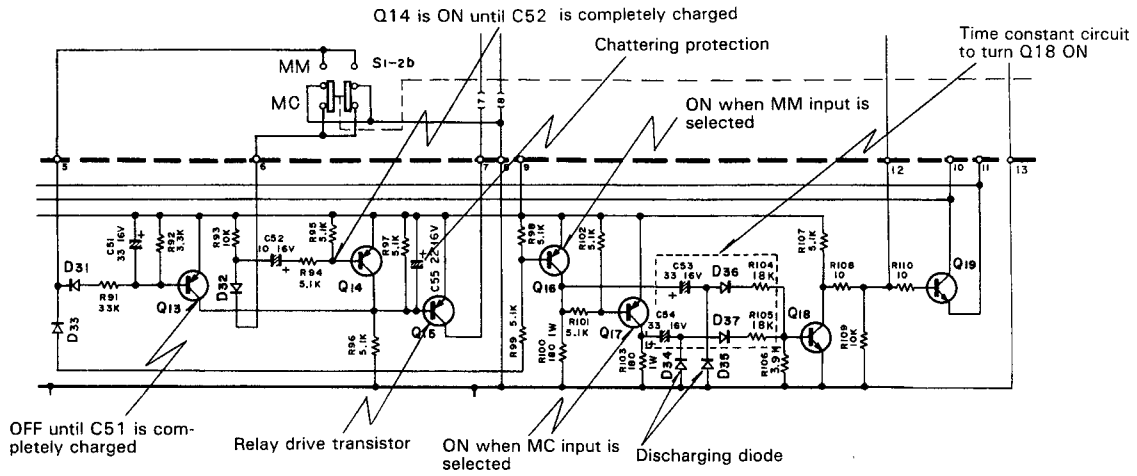
When a negative signal is applied to the input, Q2 and Q4 are deeply biased and the collector current of Q4 increases proportional to the input signal. At the same time, Q1 and Q3 will tent to go OFF. However, a voltage of $I_c \times R$ appears across the resitor 0.1Ω connected to the collector of Q4 and this voltage is applied to the emitter of Q1. Thus, V_{BE} of Q1 is increased and a small collector current flows through Q1. Therefore, a small current also flows through Q3. That is, Q1 and Q3 are maintained in the ON state when they would, if the circuit was of the conventional type, be OFF.

3. Relay Delay Circuit

This circuit prevents shock noise to be emitted when either MC or MM cartridge input is selected as well as when phono input is selected.

When the MC/MM switch is switched over, the MC/MM switching relay keeps the proceding condition for some time and the PHONO ON/OFF relay is kept OFF for a certain time.

CIRCUIT DESCRIPTION



<Relay Delay Circuit Operation>

When power is turned ON with the MC/MM switch set to MC, +B (about 9 V) is applied to the bases of Q13~15. Q13 and Q15 are turned OFF immediately, but Q14 is kept ON until C52 is fully charged. Since Q14 is ON, Q15 is OFF. When C52 is fully charged, Q14 is turned OFF and Q15 ON. When Q15 is ON, the MC/MM switching relay makes contact and the MC input is selected.

When power is turned ON with the MC/MM switch set to MM, Q13 is kept OFF until C51 is fully charged. Q14 is OFF and Q15 is OFF. When C51 is fully charged, Q13 is turned ON but Q15 is kept OFF. Therefore, the MC/MM switching relay breaks contact and the MM input is selected.

When switched from MC to MM, Q13 is OFF until C51 is fully charged. Q14 is turned OFF when switched and Q15 goes ON. When C51 is fully charged, Q15 is turned OFF and the relay breaks contact, resulting in MM input selection. The time delay depends on the time required for C51 to be charged.

When switched from MM to MC, Q13 is OFF at the time of switching. Q14 is ON until C52 is charged, and so Q15 is OFF. After a certain time, Q13 and Q14 are turned OFF and Q15 is turned ON.

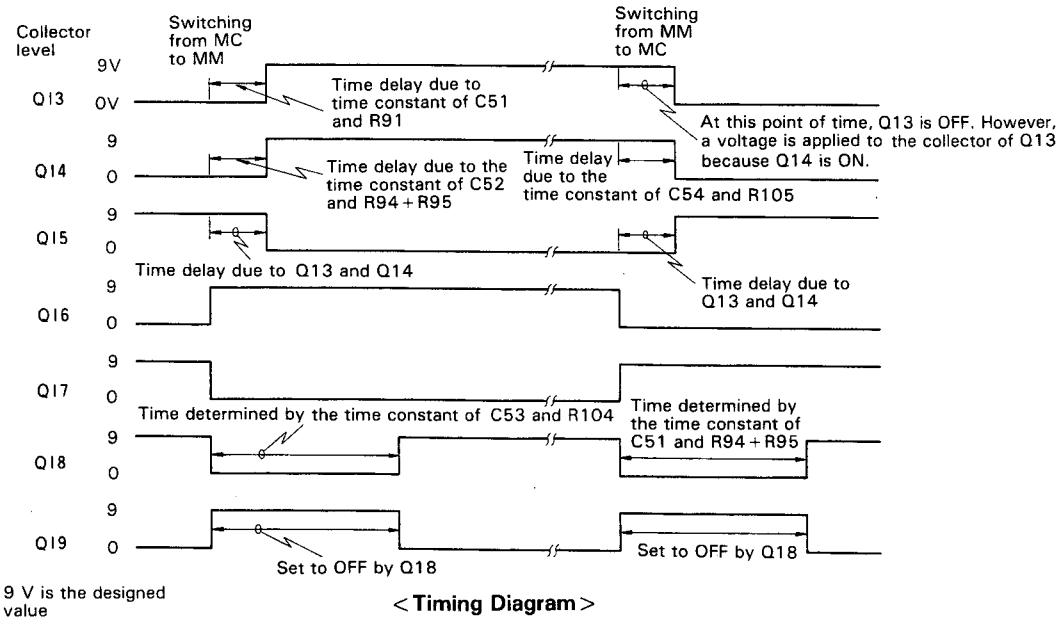
The MC/MM switch controls the PHONO relay, too, so that MC/MM switching noise is not output.

When power is turned ON with MC selected, Q16 is OFF and Q17 is ON. When Q17 is ON, Q18 is ON until C54 is charged through the circuit, C54 → D37 → R105 → Q18 , and therefore, Q18 is ON and Q19 is OFF. Thus, the PHONO ON/OFF relay is turned OFF.

When C54 is fully charged, Q18 is turned OFF and Q19 is turned ON. Therefore, the relay is turned ON. That is, the relay is turned ON for a certain time after the MC/MM switching relay is switched over.

When MM is selected, Q16 is turned ON and a current flows through C35 → D36 → R104 → Q18. Thus, Q18 is kept ON for a certain time and the relay is kept OFF.

The time chart of the above operation is shown below.



9 V is the designed value

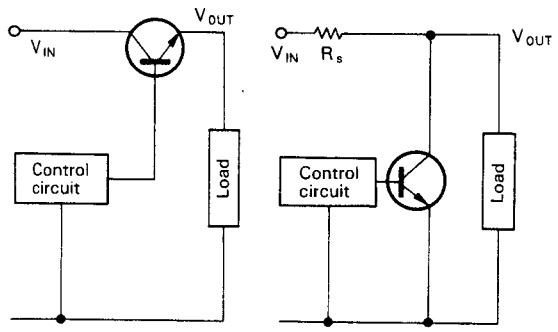
<Timing Diagram>

CIRCUIT DESCRIPTION

4. Shunt Type Regulator

A shunt type regulator is provided in the power supply of the preamplifier.

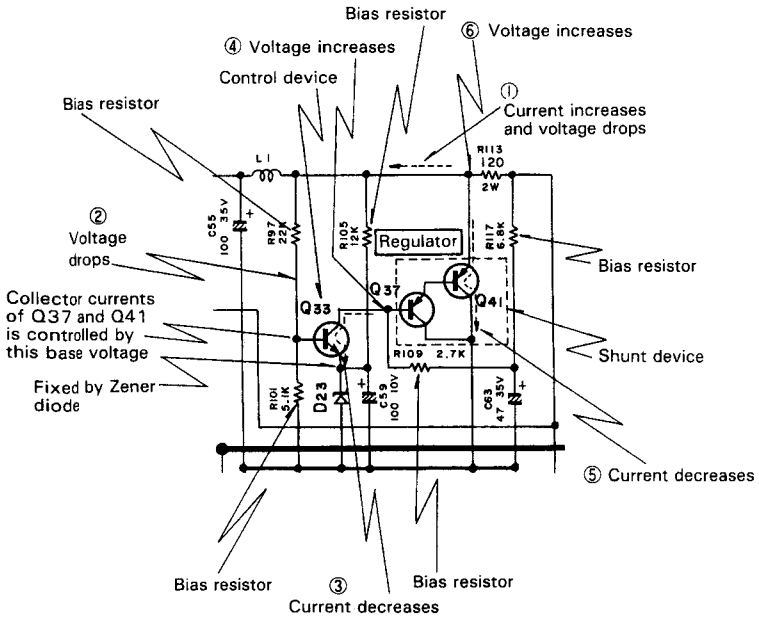
This shunt type regulator controls the output voltage by shunting the load current with a shunt device (transistor).



(a) Series path type regulator (b) Shunt type regulator

The one advantage of the shunt type regulator is that a high resistivity against overloads or short-circuited loads can be obtained by selecting the power consumption of the resistor (Rs in the schematic above) which is connected in series to the voltage source. However, the shunt device is connected in parallel with the load circuit and so a large current must be made to flow, resulting in a large power consumption and low efficiency.

The circuit operation is as follows. An appropriate bias is generally applied to the base of Q33 so that a certain current flows through Q37 and Q41. Therefore, V_{CE} of Q41 is kept constant.



<Shunt type regulator and its operation>

When the load current increases, the base voltage of Q33 drops, resulting in the collector current of Q33 decreasing. Then, the base voltage of Q37 increases and the collector current of Q37 decreases. Therefore, the collector current of Q41 decreases and V_{CE} of Q41 increases.

When the load current decreases, the base voltage of Q33 increases and the collector current of Q33 increases. Then, the collector currents of Q37 and Q41 increase. Thus, V_{CE} of Q41 drops.

L-01A

ADJUSTMENT / RÉGLAGES / ABGLEICH

PREAMP OFFSET VOLTAGE ADJUSTMENT

1. Disconnect the phono cord from the phono jacks.
2. Connect a DC voltmeter between the test point 1 and GND (2 and GND) of the Preamp (X08-1750-10).
3. Adjusting the trimming pot. VR1 (VR2), for 0V reading of the DC voltmeter.

POWER AMP OFFSET VOLTAGE ADJUSTMENT

1. Connect the DC voltmeter between the ⊕ and ⊖ speaker terminals. (TP5, 6)
2. Adjust the trimming pot VR1 (VR2) for a 0V reading of the DC voltmeter.

POWER AMP BIAS CURRENT ADJUSTMENT

1. Turn the volume control knob fully counterclockwise.
2. Connect the DC voltmeter between the collector of Q1 and of Q5. (TP3, 4)
3. Adjust the trimming pot. VR3 (VR4), of audio (X09-1380-10) for 20 mV reading of the voltmeter.

RÉGLAGE DE LA TENSION DE DÉCALAGE (OFFSET) EN SECTION PREAMPLI

1. Débrancher les câbles PHONO des prises jacks.
2. Brancher le voltmètre c.c. aux points d'alignement. 1 et GND (2 et GND), sur la plaque du circuit imprimé du préampli (X08-1750-10).
3. Régler le potentiomètre ajustable VR1 (VR2) de façon à ce que le voltmètre à C.C. indique 0V.

RÉGLAGE DE LA TENSION DE DÉCALAGE (OFFSET) EN SECTION AMPLI

1. Brancher le voltmètre à C.C. aux bornes de sortie ⊕ et ⊖ (TP5, 6).
2. Régler le potentiomètre ajustable VR1 (VR2) pour que la tension de sortie soit nulle.

RÉGLAGE DU COURANT DE POLARISATION

1. Tourner le bouton du commande de volume à fond dans le sens inverse de celui des aiguilles d'une montre.
2. Brancher le voltmètre à C.C. sur le collecteur de Q1 et Q5. (TP3, 4)
3. Régler le potentiomètre ajustable VR3 (VR4) de façon à ce que le voltmètre à C.C. indique 18 mV, sur la plaque du circuit imprimé de l'ampli. de puissance.

OFFSET-SPANNUNG DES VORVERSTÄRKERS

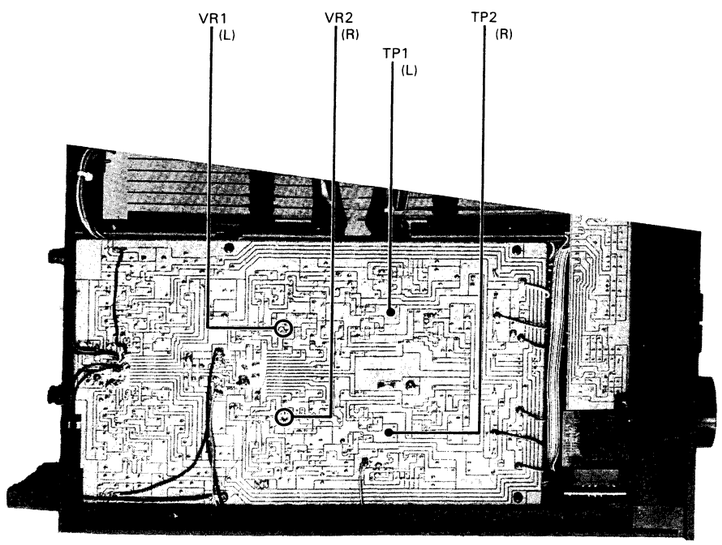
1. Die PHONO-Schnur aus den Buchsen PHONO MM order den Buchsen PHONO MC.
2. Den Gleichspannungsmesser zwischen dem Regulierungs-Punkt 1 und der Erde (2 und der Erde) des Vorverstärkers (X08-1750-10) anschließen.
3. Den halbeingebetteten Widerstand VR1 (VR2) so regulieren, daß die Gleichspannungsmesser-Ablesung 0V ist.

OFFSET-SPANNUNG DES ENDVERSTÄRKERS

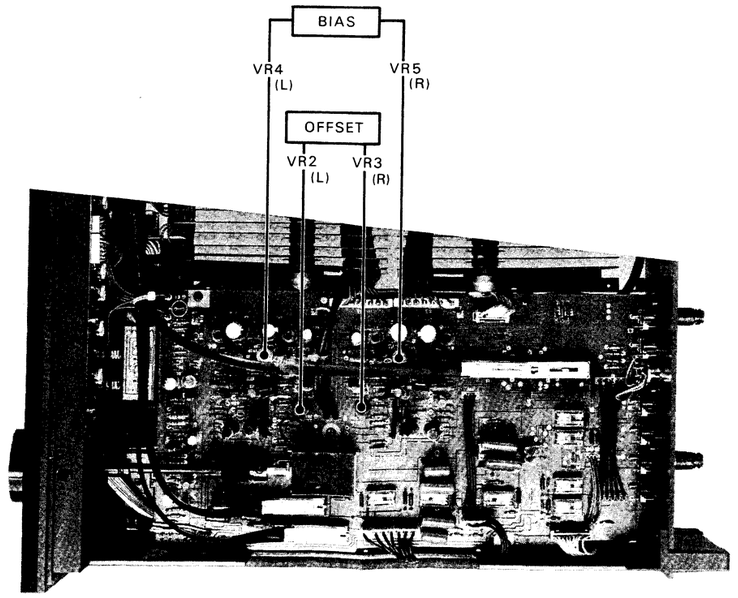
1. Den Gleichspannungsmesser zwischen der Regulierungs-Punkt ⊕ und ⊖ des Endverstärkers anschließen. (TP5, 6)
2. Den halbeingebetteten Widerstand VR (VR2) so regulieren, daß die Gleichspannungsmesser-Ablesung 0V ist.

LEERLAUFS

1. Den Lautstärkeregler (VOLUME) drehen um die Endstärker-Aufnahme auf Null zu reduzieren.
2. Den Gleichspannungsmesser zwischen der Emitter Elektrode von Q1 und der Elektrode von Q5. (TP3, 4)
3. Den halbeingebetteten Widerstand VR3 (VR4) so regulieren, daß die Gleichspannungsmesser-Ablesung 18 mV ist.



<PREAMP OFFSET ADJUSTMENT>



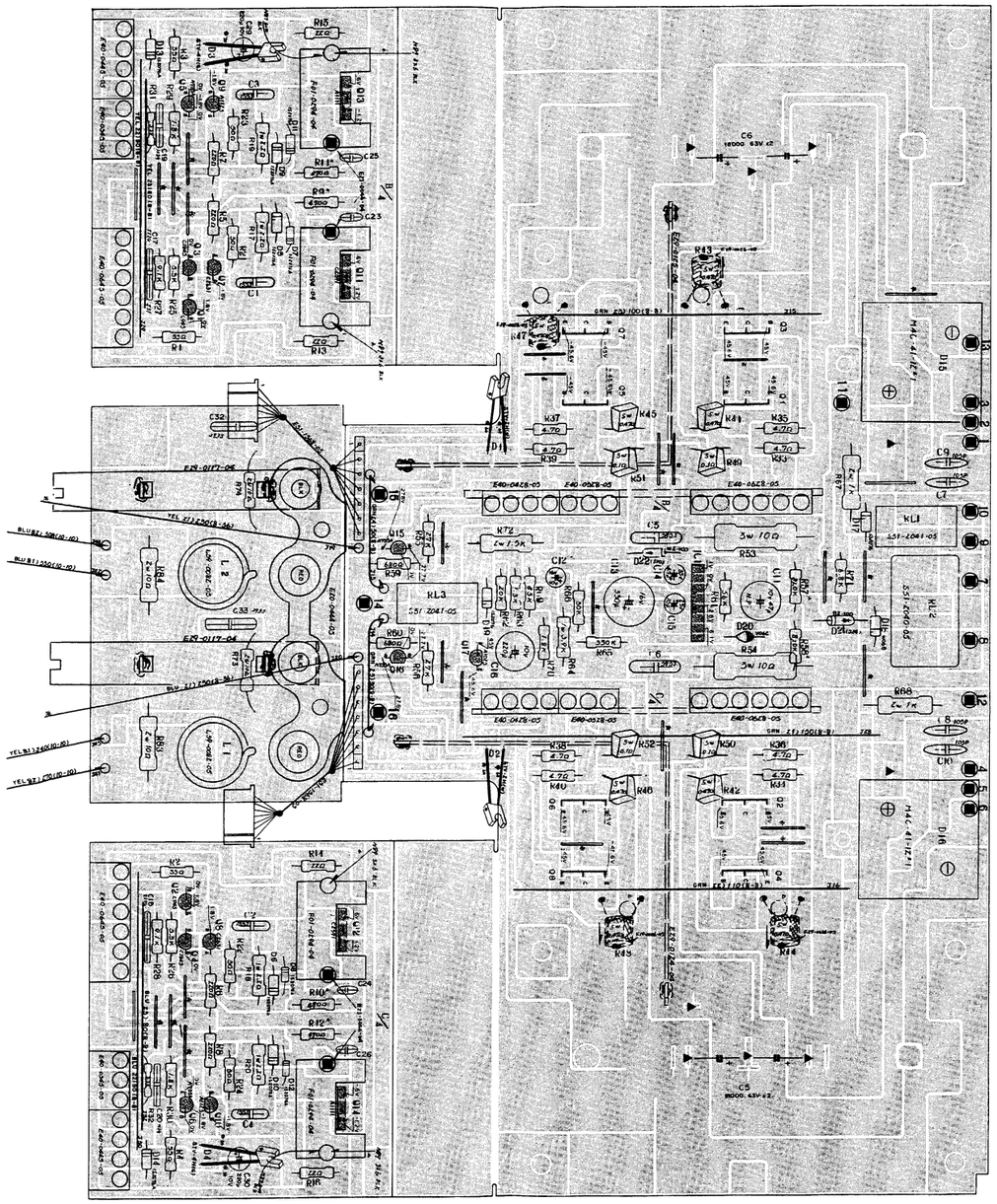
<POWER AMP OFFSET AND BIAS CURRENT ADJUSTMENT>

KENW-00104 / DRUCK 1

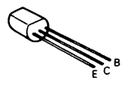
L-01A L-01A

PC BOARD

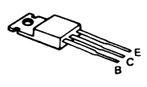
▼POWER AMP (X07-1770-21) (Components side view)



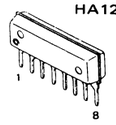
2SA733 2SC945
2SA1023 2SC1845
2SA1123 2SC2631



2SA1111
2SC2591



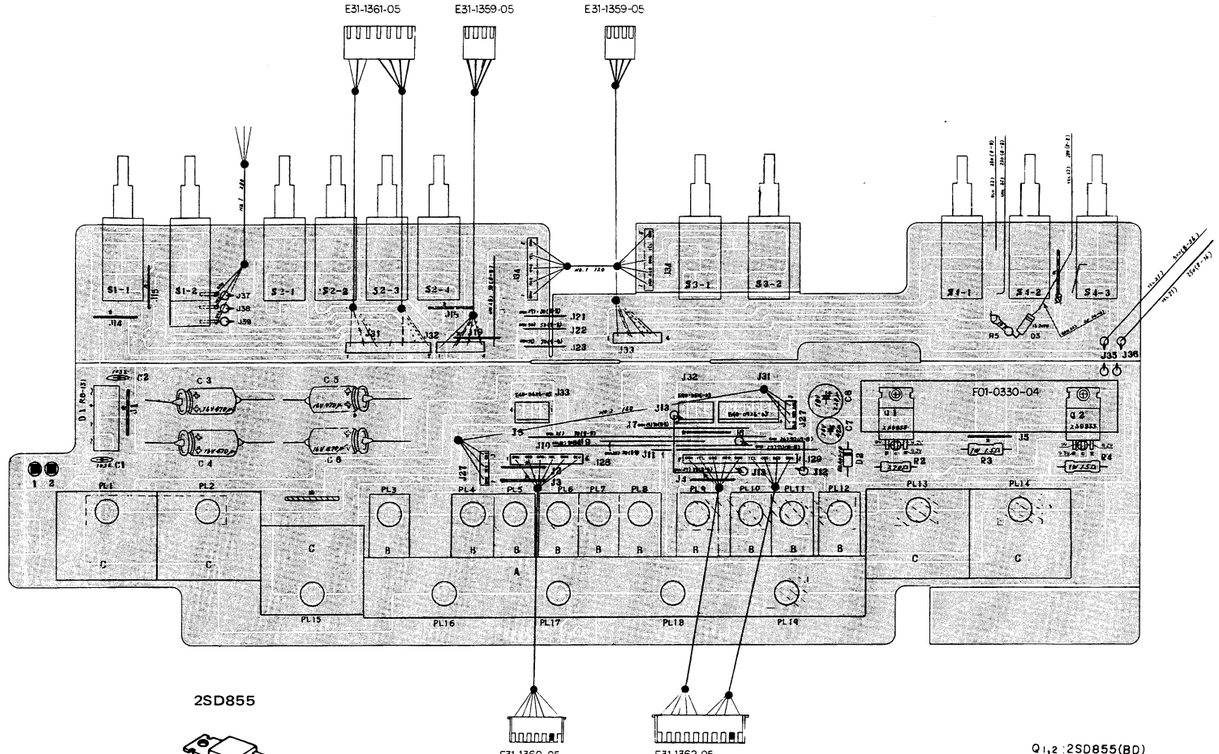
HA12002



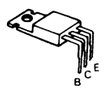
Q1,2 : 2SC945
Q3,4 : 2SC1845
Q5,6,15,16 : 2SA733A
Q7,8 : 2SC2631(Q,R,S)
Q9,10 : 2SA1123(Q,R,S)
Q11,12 : 2SC2591(Q,R)
Q13,14 : 2SA1111(Q,R)
Q17 : 2SA1023
IC1 : HA12002

D1,2 : STV-2H(W)
D3,4 : STV-4H(G)
D5~14 : 1S2076A
D15,16 : M4C-41-12※1
D17,19 : 1S2076
D18 : W06B
D20 : V06C
D21 : BZ-100
D22 : WZ-100

▼SWITCH (X13-2650-21) (Components side view)



2SD855

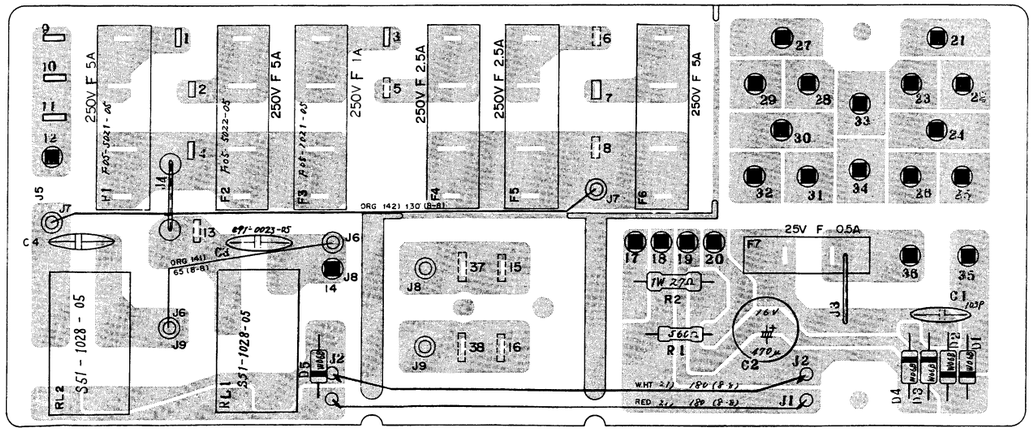


E31-1360-05

E31-1362-05

Q1,2 : 2SD855(BD)
D1 : RB-151
D2 : EQA01-10(S1)

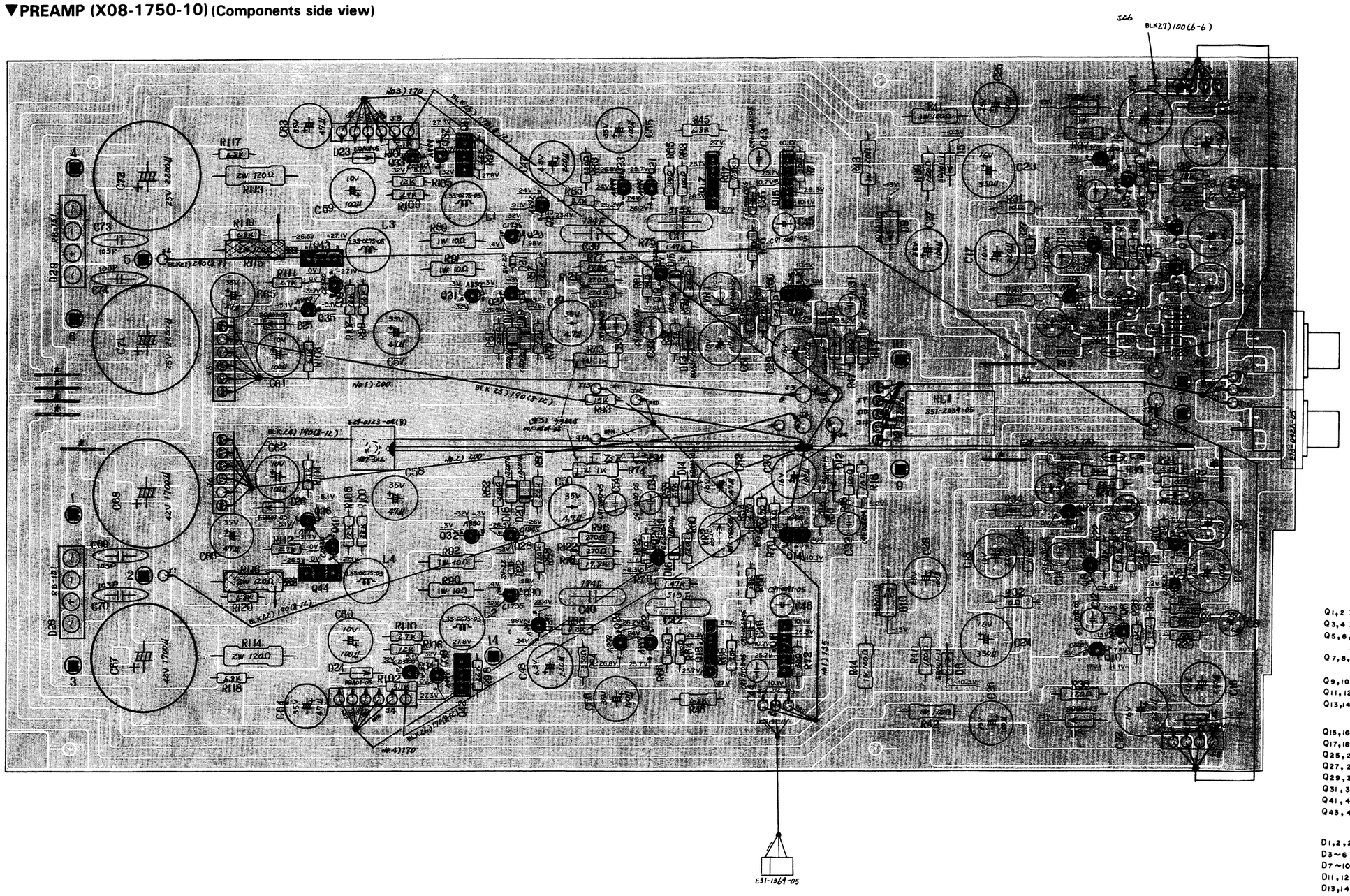
▼POWER SUPPLY (X00-2080-11) (Components side view)



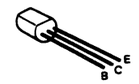
L-01A L-01A

PC BOARD

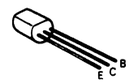
▼PREAMP (X08-1750-10) (Components side view)



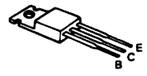
2SA850
2SC1735



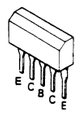
2SA992
2SA999
2SA1083
2SC945
2SC1845
2SC2003
2SC2320
2SC2545



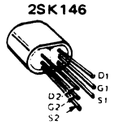
2SB724
2SD762



2SA995
2SC2291



2SK146



Q1,2 : 2SC2545(D.E)
Q3,4 : 2SA1083(D.E)
Q5,6,21~24,35~38
:2SA999(E.F)
Q7,8,19,20,33,34,39,40
:2SC2320(E.F)
Q9,10:2SC2003(M.L)
Q11,12:2SA954(M.L)
Q13,14 : 2SK146

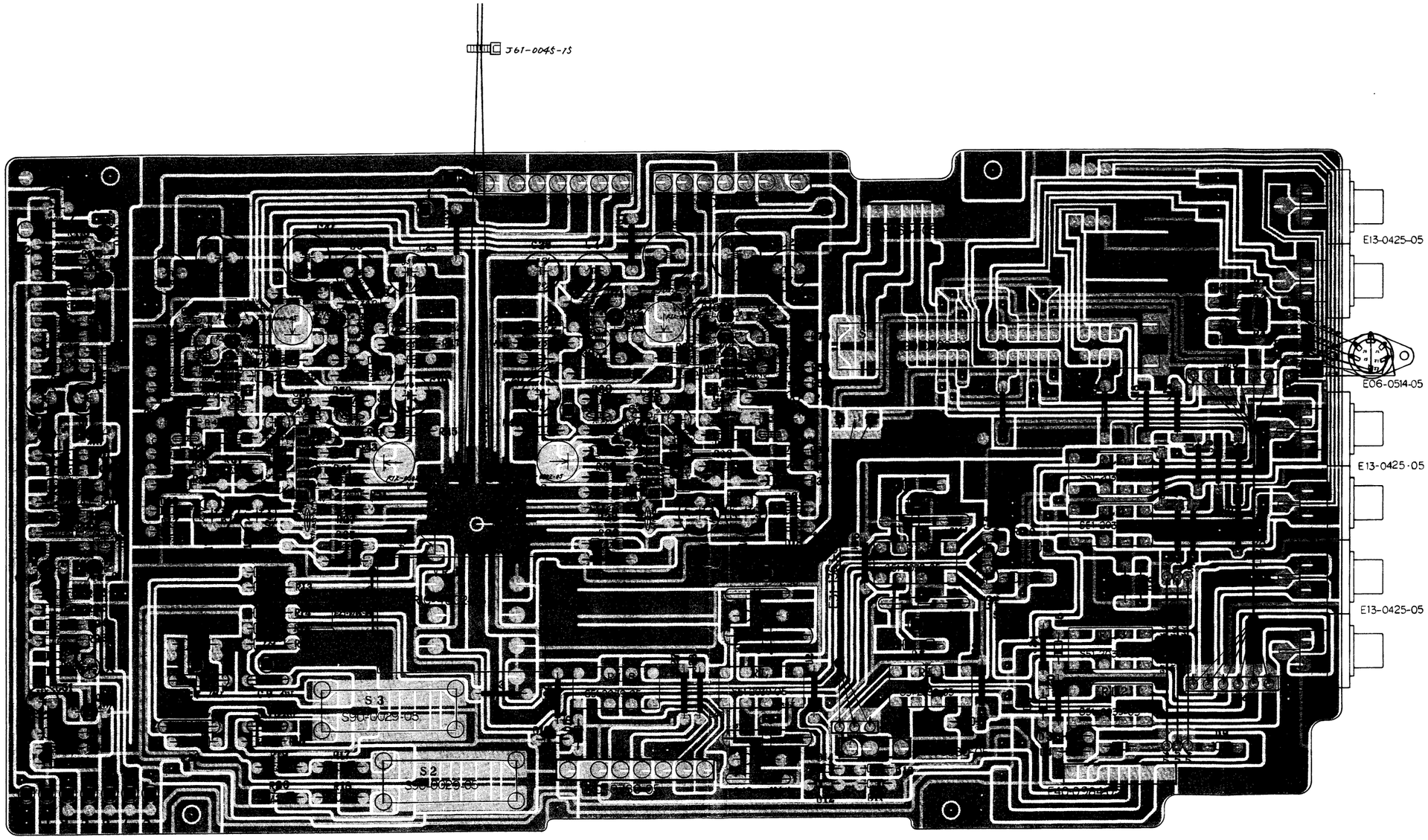
Q15,16 : 2SC2291(F.G)
Q17,18 : 2SA995(F.G)
Q25,26 :2SA992(F.E)
Q27,28 :2SC1845(F.E)
Q29,30 :2SC1735
Q31,32 :2SA850
Q41,42 :2SB724
Q43,44 :2SD762

D1,2,21,22 : SV-22
D3~6 : EQA01-11(R)
D7~10: EQB01-13
D11,12 :EQA01-15
D13,14 :EQA01-10(R)
D15~20,27: 1S2076
D23~26:EQA01-05(T2)
D28,29 :RB-151

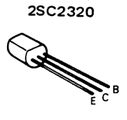
L-01A L-01A

PC BOARD

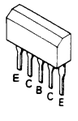
▼AUDIO (X09-1380-10) (Components side view)



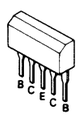
2SA1124
2SA999
2SC2632
2SC2320



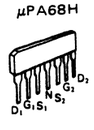
2SC2291



2SC2259



μPA68H



Q1,2 : 2SC2291(G,H)
Q3,4 : μPA68H(L,M)
Q5,6 : 2SC2259(G,H)
Q7~10 : 2SA1124(R,S)
Q11,12 : 2SC2632(R,S)
Q13~17 : 2SA999(E,F)
Q18,19 : 2SC2320(E,F)

D1,3~16,29~37 : 1S2076
D17,18 : WZ-240
D19,20 : WZ-197
D21,22 : XZ-051

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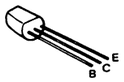
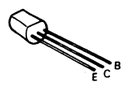
NEW SEPARATE

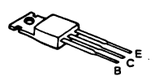
2SA850
2SC1735



2SA733 2SC945
2SA954 2SC1845
2SA992 2SC2003
2SA999 2SC2320
2SA1023 2SC2545
2SA1083 2SC2631
2SA1123 2SC2632
2SA1124

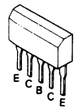


2SA1111
2SB724
2SC2591
2SD762

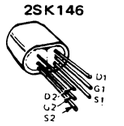


2SD855

2SA995
2SC2291

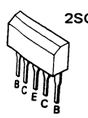


2SK146

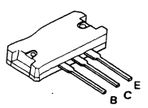


HA12002

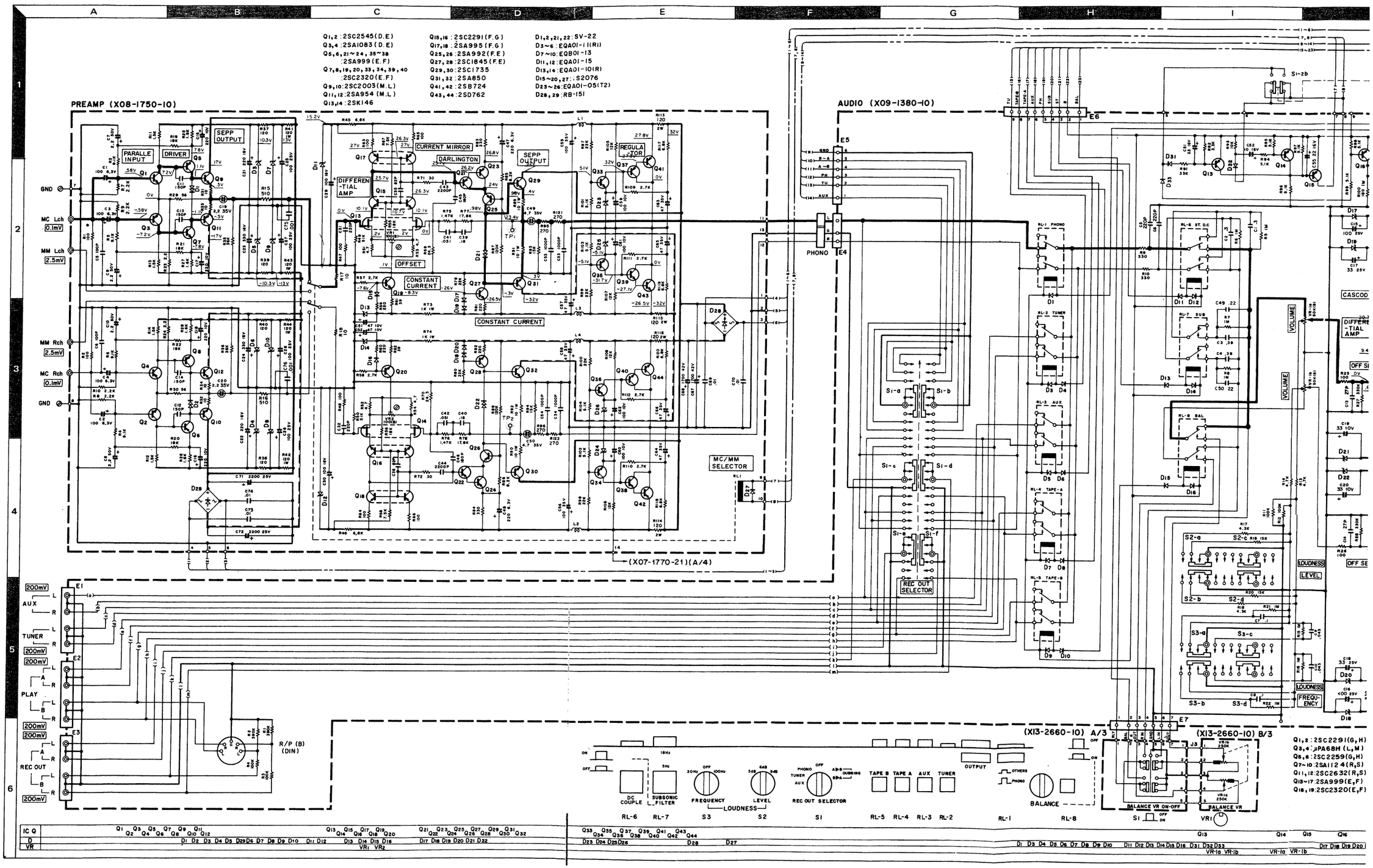
2SC2259



2SA1095
2SC2565

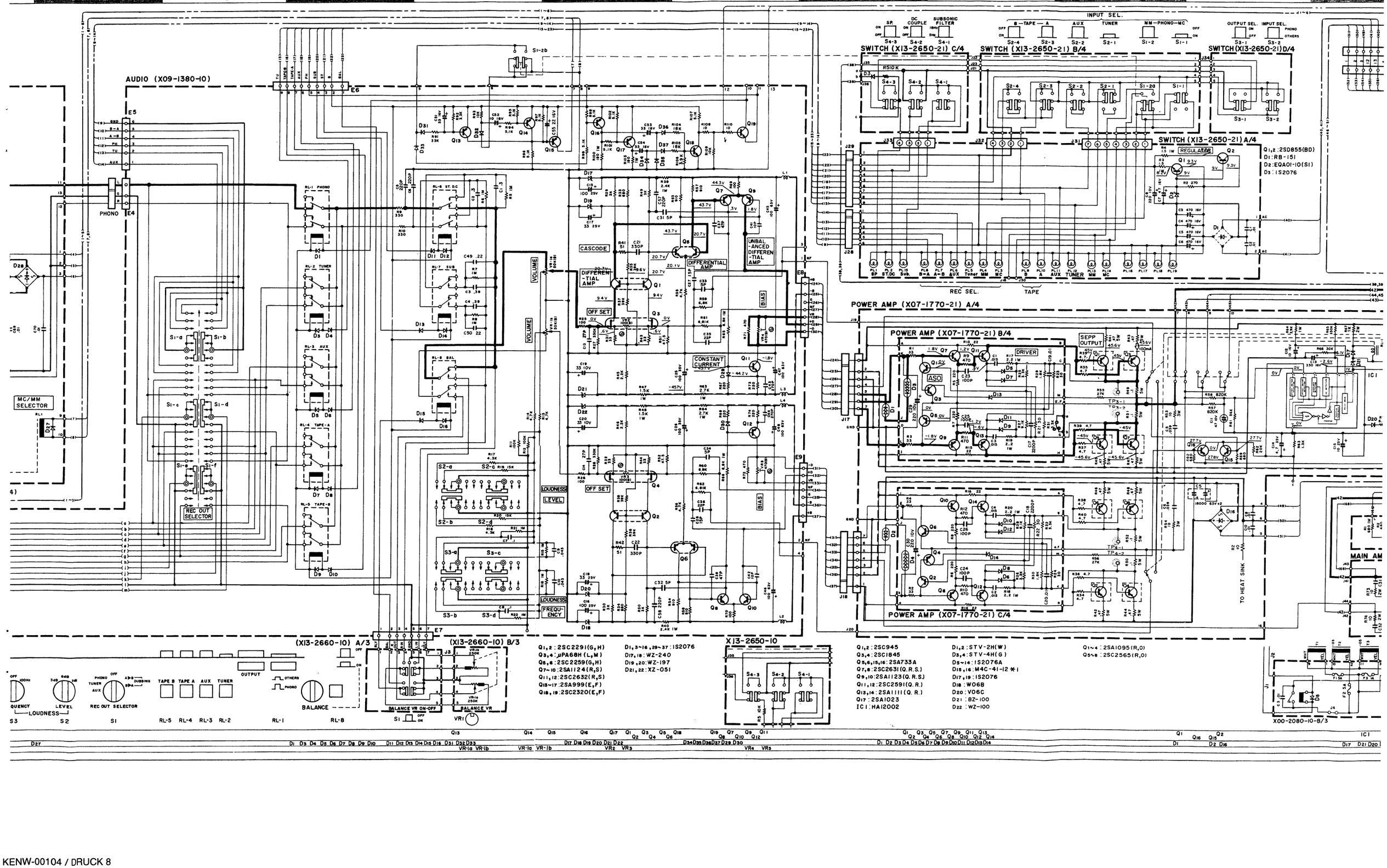


μPA68H

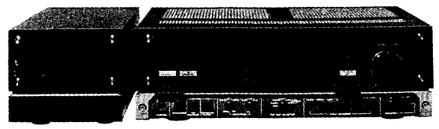


KENW-00104 / DRUCK 7

NEW SEPARATE AMPLIFIER



L-01A



SPECIFICATIONS

POWER OUTPUT

110 watts* per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.006% total harmonic distortion.

Both Channels Driven	120+120 watts 8 ohms at 1,000 Hz 170+170 watts 4 ohms at 1,000 Hz
Total Harmonic Distortion (20 Hz to 20,000 Hz)	
AUX input to SPEAKER output	0.006% at rated power into 8 ohms 0.006% at 1/2 rated power into 8 ohms
PHONO input to SPEAKER output	0.008% at rated power with VOLUME −20 dB
Intermodulation Distortion (60 Hz:7 kHz=4:1)	0.003% at rated power into 8 ohms
Damping Factor	1000, 1,000 Hz into 8 ohms
Transient Response	
Rise Time	0.7 μS
Slew Rate	±150 V/μS
Power Bandwidth	5 Hz to 100 kHz at 0.03% THD
Frequency Response (DC COUPLED at ON)	DC to 400 kHz, −3 dB
(DC COUPLED at OFF)	5 Hz or 18 Hz to 400 kHz, −3 dB
Speaker Impedance	Accepts 4 ohms to 16 ohms
Input Sensitivity/Impedance	
Phono (MM)	2.5 mV/50 kohms
Phono (MC)	0.1 mV/100 ohms
Tuner, Aux, Tape Play	200 mV/50 kohms
Signal to Noise Ratio (IHF, A)	
Phono (MM)	90 dB for 2.5 mV input 96 dB for 5.0 mV input 102 dB for 10 mV input
Phono (MC)	72 dB for 0.1 mV input
Tuner, AUX, Tape	112 dB for 200 mV input
Maximum Input Level for Phono (MM)	250 mV (RMS), THD 0.01% at 1,000 Hz
(MC)	9 mV (RMS), THD 0.01% at 1,000 Hz
Output Level/Impedance	
Tape REC (Pin)	200 mV/180 ohms
(DIN)	40 mV/80 kohms
Frequency Response for Phono	RIAA standard curve ±0.2 dB (20 Hz to 20,000 Hz)
Loudness Control (at −30 dB VOLUME Level)	+3 dB, +6 dB, +9 dB at 30 Hz and 100 Hz
Subsonic Filter (DC COUPLED at OFF)	6 dB/Oct at 5 Hz and 18 Hz

GENERAL

Power Consumption	5.5A UL/CSA 430 watts, Rated power at 8 ohms 115 watts, Non signal	
AC Outlet	Switched 2, Unswitched 1	
Dimensions	Amplifier (L-01A) W 440 mm (17-5/16") H 156 mm (6-5/32") D 452 mm (17-25/32")	Power Supply (L-01A-PS) W 170 mm (6-11/16") H 156 mm (6-5/32") D 403.5 mm (15-7/8")
Net Weight	9.5 kg (20.9 lb)	17.5 kg (38.5 lb)

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

DC voltages are measured by a VOM with 20 kΩ/V input impedance.

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INSTRUCTION FOR PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
14 3A	A20-1391-13	FRONT PANEL ASSY	*K
14 3A	A20-1417-13	FRONT PANEL ASSY	*T
15 3A	A21-0302-03	DRESSING PANEL	*J
15 3A	A21-0302-03	DRESSING PANEL	PU
15 3A	A21-0302-03	DRESSING PANEL	MX
C1 ,C2	C54-3310-39	CERAMIC 0.01UF P	ET
C1	C90-0145-05	POLYESTER 0.01UF AC125V	I
C1	C91-0023-05	CERAMIC 0.01UF AC250V	UM
C1	C91-0023-05	CERAMIC 0.01UF AC250V	HX
C1	C91-0025-05	CERAMIC 0.01UF AC125V	P

① Exploded view drawing No.
② Position in exploded view.
③ Symbol of new parts
④ Area to which parts are shipped. Example: A20-1390-13 is the part No. of FRONT PANEL ASS'Y for the "K" type products (for U.S.A.). When this column is blank, it means that the same type of parts (same parts No.) are used for the products shipped to all areas.
⑤ Reference No. in schematic diagram.
⑥ Abbreviation of "ceramic capacitor"

All capacitors and resistors are listed using abbreviations.
Abbreviations

* Abbreviations of capacitors (Parts No. with initial letter "C").

ELECTRO ..... Electrolytic capacitor
LL-ELEC ..... Low leak electrolytic capacitor
NP-ELEC ..... Non-pole electrolytic capacitor
MICA ..... Mica capacitor
POLYSTY ..... Polystyrene capacitor
MYLAR ..... Mylar capacitor
CERAMIC ..... Ceramic capacitor
TANTAL ..... Tantalum capacitor
MF ..... Metallized film capacitor
MP ..... Metallized paper capacitor
OIL ..... Oil capacitor

The unit "UF" is used in lieu of "μF"

* Abbreviations of resistors (Parts No. with initial letters "R").

RC ..... Carbon composition resistor
RD ..... Carbon film resistor
FL-PROOF RD ..... Flame-proof carbon film resistor
RW ..... Wire wound power resistor
FL-PROOF RS ..... Flame-proof metal oxide film resistor
RN ..... Metal film resistor
FUSE-RESIST ..... Resistor with fuse function
2B ..... Rated wattage 1/8W
2E ..... Rated wattage 1/4W
2H ..... Rated wattage 1/2W
3A ..... Rated wattage 1W
3D ..... Rated wattage 2W
3F ..... Rated wattage 3W
3G ..... Rated wattage 4W
3H ..... Rated wattage 5W

All resistor values are indicated with the unit (Ω) omitted.

* Abbreviations common to capacitors and resistors.

C ..... ±0.25pF (Used for capacitors only)
D ..... ±0.5pF (Used for capacitors only)
F ..... ±1%
G ..... ±2%
J ..... ±5%
K ..... ±10%
M ..... ±20%
Z ..... +80%, −20%(Used for capacitors only)
P ..... +100%, −0%(Used for capacitors only)

Resistors RD (carbon composition resistors) are not listed in the parts list. For values, refer to the schematic diagram.

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
L-01A AMPLIFIER UNIT			
1 1A	-	MESH PLATE (A)	
2 1B	-	MESH PLATE (B)	
3 3C	-	METALLIC FRAME(L)	
4 3C	-	METALLIC FRAME(R)	
5 2A	-	ESCUTCHEON	
6 2A	-	SUB PANEL (A)	
7 2B	-	SUB PANEL (B)	
8 1D	-	REAR PANEL	
9 2B	-	BOTTOM PLATE	
10 1C,3C	-	L SHAPED HARDWARE	
11 2B	-	MESH PLATE	
14 2C,2D	-	MOUNTING HARDWARE	
15 1B	A03-0248-01	WOODEN CABINET	*K
15 1B	A03-0251-01	WOODEN CABINET	PU
15 1B	A03-0251-01	WOODEN CABINET	MX
15 1B	A03-0251-01	WOODEN CABINET	TE
16 3A	A20-1551-03	FRONT PANEL	*K
16 3A	A20-1551-03	FRONT PANEL	PU
16 3A	A20-1551-03	FRONT PANEL	MX
16 3A	A20-1551-03	FRONT PANEL	E
16 3A	A20-1552-03	FRONT PANEL	T
17 2A	A21-0314-02	DRESSING PANEL	*
18 1C	A50-0074-02	SIDE PLATE (L)	*
19 3D	A50-0075-02	SIDE PLATE (R)	*
-	B46-0055-20	WARRANTY CARD	P
-	B46-0060-00	WARRANTY CARD	T
-	B46-0061-20	WARRANTY CARD	K
-	B46-0062-20	WARRANTY CARD	U
-	B46-0063-13	WARRANTY CARD	U
-	B46-0064-10	WARRANTY CARD	X
-	B50-3067-00	INSTRUCTION MANUAL	*K
-	B50-3067-00	INSTRUCTION MANUAL	U
-	B50-3068-00	INSTRUCTION MANUAL	PM
-	B50-3068-00	INSTRUCTION MANUAL	X
-	B50-3069-00	INSTRUCTION MANUAL	T
-	B50-3082-00	INSTRUCTION MANUAL	E
-	B59-0018-00	SERVICE STATIONS' LIST	U
20 3B	B07-0249-04	ESCUTCHEON	
21 2A	B08-0010-04	INDICATOR	*
22 3A	B10-0266-03	FRONT GLASS	
43 3A	B09-0015-04	CAP	*
C5 ,6	C90-0419-15	ELECTRO 18000UFX2 63WV	*
23 2B	D21-0455-05	SHAFT	*
24 2B,3D	D22-0036-04	COUPLING (A)	*
25 3D	D22-0037-04	COUPLING (B)	*
-	E14-0107-05	PHONO PLUG	
26 1D	E09-1603-05	RECTANGULAR PLUG 16P	
27 1D	E21-0011-05	GND TERMINAL	*
12 3D	F01-0331-15	HEAT SINK ASSY (L)	*
13 2D	F01-0332-15	HEAT SINK ASSY (R)	*
28 1C	G13-0122-05	CUSHION (L)	*
29 1D	G13-0123-05	CUSHION (R)	*
-	H01-3099-14	CARTON BOX	*T
-	H01-3102-14	CARTON BOX	E
-	H01-3150-04	CARTON BOX	KP
-	H01-3150-04	CARTON BOX	UM
-	H01-3150-04	CARTON BOX	X

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
-	H12-0073-03	PACKING FIXTURE	*
-	H12-0074-04	PACKING FIXTURE	*
-	H12-0075-04	PACKING FIXTURE	*
-	H20-0458-04	COVER	KP
-	H20-0458-04	COVER	UX
-	H20-0458-04	COVER	TE
-	H20-0459-04	COVER	M
-	H25-0029-04	BAG	
-	H25-0078-04	BAG	
-	H40-0004-04	ANTI-RUST PAPER	
30 3B	J02-0098-04	FOOT	
31 3A	K21-0381-04	KNOB(VOLUME)	*
32 2B	K21-0382-04	KNOB(LOUD,REC,BALANCE)	*
33 2B	K27-0114-03	KNOB(OUTPUT,INPUT)	*
34 2B	K27-0115-03	KNOB(POWER)	*
35 2A,2B	K27-0116-04	KNOB(PUSHBUTTON)X5	*
36 2B	K27-0117-04	KNOB(SELECTOR,BALANCE)	*
37 1B	N09-0323-04	SCREW	
38 3A	N09-0324-04	SCREW	
38 3A	N30-4008-45	PAN HEAD MACHINE SCREW	
39 1A	N09-0291-05	SCREW	
40 2C,2D	N09-0326-05	SCREW	*
41 1D	N09-0327-05	SCREW	
42 3B,1D	N14-0115-05	NUT	
43 3A	N14-0124-04	SPECIAL NUT	
44 2D	S90-0032-05	REMOTE SWITCH SHAFT	*
45 2D	S90-0033-05	REMOTE SWITCH SHAFT	*
S1	S40-2103-15	PUSH SWITCH FIG46	*
Q1 -4	V01-1095-10	2SA1095(R,O) FIG47	*
Q5 -8	V03-2565-10	2SC2565(R,O) FIG48	*
-	W01-0077-15	WRENCH	
-	W01-0090-05	CLEANING CLOTH	
49 1C,2D	X07-1770-10	POWER AMP PCB ASSY	*T
49 1C,2D	X07-1770-10	POWER AMP PCB ASSY	E
49 1C,2D	X07-1770-21	POWER AMP PCB ASSY	KP
49 1C,2D	X07-1770-21	POWER AMP PCB ASSY	UM
49 1C,2D	X07-1770-21	POWER AMP PCB ASSY	X
50 3D	X08-1750-10	PRE AMP PCB ASSY	*
51 2D	X09-1380-10	AUDIO AMP PCB ASSY	*
52 2A,1B	X13-2650-10	SWITCH PCB ASSY	*T
52 2A,1B	X13-2650-10	SWITCH PCB ASSY	E
52 2A,1B	X13-2650-21	SWITCH PCB ASSY	KP
52 2A,1B	X13-2650-21	SWITCH PCB ASSY	UM
52 2A,1B	X13-2650-21	SWITCH PCB ASSY	X
53 2B	X13-2660-10	SUB PCB ASSY	*
POWER AMP (X07-1770-xx)			
C1 -4	C49-2015-35	POLYSTY 0.015UF J	
C5 ,6	C49-2039-35	POLYSTY 0.039UF J	
C7 -10	C54-2710-39	CERAMIC 0.01UF P	
C11	C90-0458-05	ELECTRO 47UF 10WV	
C12	C24-1210-61	ELECTRO 10UF 16WV	
C13	C25-1233-77	ELECTRO 330UF 16WV	
C14	C24-1747-51	ELECTRO 4.7UF 35WV	
C15	C24-1410-61	ELECTRO 10UF 25WV	
C16	C24-1022-71	ELECTRO 220UF 10WV	
C17 ,18	C49-2022-25	POLYSTY 2200PF J	
C19 ,20	C49-2010-34	MYLAR 0.01UF G	
C23 -26	C71-1710-15	CERAMIC 100PF J	
C29 ,30	C90-0451-05	ELECTRO 220UF 10WV	

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規
C31 ,32	C49-2039-35	POLYSTY 0.039UF
101 1D	E20-0444-05	SPEAKER TERMINAL
L1 ,2	L39-0082-05	COIL
R1 -4	R43-1233-05	FL-PROOF RD33
R5 -8	R43-1222-15	FL-PROOF RD220
R9 -12	R43-1247-15	FL-PROOF RD470
R13 -16	R43-1222-05	FL-PROOF RD22
R17 -20	R47-5422-95	FL-PROOF RS2.2
R21 -24	R43-1230-05	FL-PROOF RD30
R33 -40	R43-1247-95	FL-PROOF RD4.7
R41 -48	R92-0203-05	METAL 0.47
R49 -52	R92-0202-05	METAL 0.1
R53 ,54	R47-5610-05	FL-PROOF RS10
R64	R47-5439-25	FL-PROOF RS3.9K
R67 ,68	R47-5510-25	FL-PROOF RS1K
R72	R47-5515-25	FL-PROOF RS1.5K
R73 ,74	R47-5510-05	FL-PROOF RS10
R83 ,84	R47-5510-05	FL-PROOF RS10
-	S59-1048-05	THERMAL SWITCH
-	S59-1048-05	THERMAL SWITCH
-	S59-1048-05	THERMAL SWITCH
RL1	S51-2041-05	RELAY
RL2	S51-2040-05	RELAY
RL3	S51-2041-05	RELAY
D1 ,2	V11-5100-80	STV-2H(W)
D3 ,4	V11-5100-40	STV-4H(G)
D5 -14	V11-0273-05	1S2076A
D15 ,16	V11-2101-20	M4C-41-12*1
D17	V11-0271-05	1S2076
D18	V11-0295-05	W06B
D19	V11-0271-05	1S2076
D20	V11-0200-05	V06C
D21	V11-9727-05	BZ-100
D22	V11-0247-05	WZ-100
IC1	V30-0291-10	HA12002
Q1 ,2	V03-0297-05	2SC945
Q3 ,4	V03-1845-00	2SC1845
Q5 ,6	V01-0733-90	2SA733(A)
Q7 ,8	V03-2631-10	2SC2631(Q,R,S)
Q9 ,10	V01-1123-10	2SA1123(Q,R,S)
Q11 ,12	V03-2591-10	2SC2591(Q,R) FIG102
Q13 ,14	V01-1111-10	2SA1111(Q,R) FIG103
Q15 ,16	V01-0733-90	2SA733(A)
Q17	V01-1023-00	2SA1023
PREAMP (X08-1750-10)		
C1 -4	C90-0452-05	ELECTRO 100UF 6.
C5 ,6	C91-0062-05	POLYSTY 100PF K
C7 -10	C90-0461-05	ELECTRO 2.2UF 50
C11 -14	C91-0090-05	POLYSTY 150PF J
C15 -18	C90-0451-05	ELECTRO 220UF 10
C19 ,20	C90-0463-05	ELECTRO 2.2UF 35
C21 ,22	C90-0407-05	ELECTOR 220UF 16
C23 ,24	C90-0462-05	ELECTRO 330UF 16
C25 -28	C90-0400-05	ELECTRO 100UF 25
C29 ,30	C90-0442-05	ELECTRO 100UF 16
C31 ,32	C91-0092-05	POLYSTY 220PF J
C33 ,34	C91-0100-05	POLYSTY 1000PF J
C35 ,36	C91-0061-05	POLYSTY 82PF K
C39 ,40	C49-2018-43	POLYSTY 0.18UF J
C41 ,42	C49-2051-33	POLYSTY 0.051UF J

KENW-00104 / DRUCK 10

L-01A L-01A

PARTS LIST

PARTS LIST

ption / 規 格	Re-marks 備考
)	
)	
E(L)	
E(R)	
)	
)	
WARE	
WARE	
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T	PU
T	MX
T	TE
	*K
	PU
	MX
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	P
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NUAL	*K
NUAL	U
NUAL	PM
NUAL	X
NUAL	T
NUAL	E
NS' LIST	U
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FX2 63WV	*
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JG 16P	*
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(L)	*
(R)	*
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	*T
	E
	KP
	UM
	X

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Re-marks 備考
-	H12-0073-03	PACKING FIXTURE	*
-	H12-0074-04	PACKING FIXTURE	*
-	H12-0075-04	PACKING FIXTURE	*
-	H20-0458-04	COVER	KP
-	H20-0458-04	COVER	UX
-	H20-0458-04	COVER	TE
-	H20-0459-04	COVER	M
-	H25-0029-04	BAG	
-	H25-0078-04	BAG	
-	H40-0004-04	ANTI-RUST PAPER	
30 3B	J02-0098-04	FOOT	
31 3A	K21-0381-04	KNOB(VOLUME)	*
32 2B	K21-0382-04	KNOB(LOUD,REC,BALANCE)	*
33 2B	K27-0114-03	KNOB(OUTPUT,INPUT)	*
34 2B	K27-0115-03	KNOB(POWER)	*
35 2A,2B	K27-0116-04	KNOB(PUSHBUTTON)X5	*
36 2B	K27-0117-04	KNOB(SELECTOR,BALANCE)	*
37 1B	N09-0323-04	SCREW	
38 3A	N09-0324-04	SCREW	
38 3A	N30-4008-45	PAN HEAD MACHINE SCREW	
39 1A	N09-0291-05	SCREW	
40 2C,2D	N09-0326-05	SCREW	*
41 1D	N09-0327-05	SCREW	
42 3B,1D	N14-0115-05	NUT	
43 3A	N14-0124-04	SPECIAL NUT	
44 2D	S90-0032-05	REMOTE SWITCH SHAFT	*
45 2D	S90-0033-05	REMOTE SWITCH SHAFT	*
S1	S40-2103-15	PUSH SWITCH FIG46	*
Q1 -4	V01-1095-10	2SA1095(R,O) FIG47	*
Q5 -8	V03-2565-10	2SC2565(R,O) FIG48	*
-	W01-0077-15	WRENCH	
-	W01-0090-05	CLEANING CLOTH	
49 1C,2D	X07-1770-10	POWER AMP PCB ASSY	*T
49 1C,2D	X07-1770-10	POWER AMP PCB ASSY	E
49 1C,2D	X07-1770-21	POWER AMP PCB ASSY	KP
49 1C,2D	X07-1770-21	POWER AMP PCB ASSY	UM
49 1C,2D	X07-1770-21	POWER AMP PCB ASSY	X
50 3D	X08-1750-10	PRE AMP PCB ASSY	*
51 2D	X09-1380-10	AUDIO AMP PCB ASSY	*
52 2A,1B	X13-2650-10	SWITCH PCB ASSY	*T
52 2A,1B	X13-2650-10	SWITCH PCB ASSY	E
52 2A,1B	X13-2650-21	SWITCH PCB ASSY	KP
52 2A,1B	X13-2650-21	SWITCH PCB ASSY	UM
52 2A,1B	X13-2650-21	SWITCH PCB ASSY	X
53 2B	X13-2660-10	SUB PCB ASSY	*

POWER AMP (X07-1770-xx)

C1 -4	C49-2015-35	POLYSTY 0.015UF J	
C5 ,6	C49-2039-35	POLYSTY 0.039UF J	
C7 -10	C54-2710-39	CERAMIC 0.01UF P	
C11	C90-0458-05	ELECTRO 47UF 10WV	
C12	C24-1210-61	ELECTRO 10UF 16WV	
C13	C25-1233-77	ELECTRO 330UF 16WV	
C14	C24-1747-51	ELECTRO 4.7UF 35WV	
C15	C24-1410-61	ELECTRO 10UF 25WV	
C16	C24-1022-71	ELECTRO 220UF 10WV	
C17 ,18	C49-2022-25	POLYSTY 2200PF J	
C19 ,20	C49-2010-34	MYLAR 0.01UF G	
C23 -26	C71-1710-15	CERAMIC 100PF J	
C29 ,30	C90-0451-05	ELECTRO 220UF 10WV	

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Re-marks 備考
C31 ,32	C49-2039-35	POLYSTY 0.039UF J	
101 1D	E20-0444-05	SPEAKER TERMINAL	*
L1 ,2	L39-0082-05	COIL	
R1 -4	R43-1233-05	FL-PROOF RD33 J 2E	
R5 -8	R43-1222-15	FL-PROOF RD220 J 2E	
R9 -12	R43-1247-15	FL-PROOF RD470 J 2E	
R13 -16	R43-1222-05	FL-PROOF RD22 J 2E	
R17 -20	R47-5422-95	FL-PROOF RS2,2 J 3A	
R21 -24	R43-1230-05	FL-PROOF RD30 J 2E	
R33 -40	R43-1247-95	FL-PROOF RD4,7 J 2E	
R41 -48	R92-0203-05	METAL 0,47 K 3H	
R49 -52	R92-0202-05	METAL 0,1 K 3H	
R53 ,54	R47-5610-05	FL-PROOF RS10 J 3F	
R64	R47-5439-25	FL-PROOF RS3,9K J 3A	
R67 ,68	R47-5510-25	FL-PROOF RS1K J 3D	
R72	R47-5515-25	FL-PROOF RS1,5K J 3D	
R73 ,74	R47-5510-05	FL-PROOF RS10 J 3D	
R83 ,84	R47-5510-05	FL-PROOF RS10 J 3D	
-	S59-1048-05	THERMAL SWITCH	KP
-	S59-1048-05	THERMAL SWITCH	UM
-	S59-1048-05	THERMAL SWITCH	X
RL1	S51-2041-05	RELAY	*
RL2	S51-2040-05	RELAY	
RL3	S51-2041-05	RELAY	*
D1 ,2	V11-5100-80	STV-2H(W)	
D3 ,4	V11-5100-40	STV-4H(G)	
D5 -14	V11-0273-05	1S2076A	
D15 ,16	V11-2101-20	M4C-41-12*1	
D17	V11-0271-05	1S2076	
D18	V11-0295-05	W06B	
D19	V11-0271-05	1S2076	
D20	V11-0200-05	V06C	
D21	V11-9727-05	BZ-100	
D22	V11-0247-05	WZ-100	
IC1	V30-0291-10	HA12002	
Q1 ,2	V03-0297-05	2SC945	
Q3 ,4	V03-1845-00	2SC1845	
Q5 ,6	V01-0733-90	2SA733(A)	
Q7 ,8	V03-2631-10	2SC2631(Q,R,S)	*
Q9 ,10	V01-1123-10	2SA1123(Q,R,S)	*
Q11 ,12	V03-2591-10	2SC2591(Q,R) FIG102	*
Q13 ,14	V01-1111-10	2SA1111(Q,R) FIG103	
Q15 ,16	V01-0733-90	2SA733(A)	
Q17	V01-1023-00	2SA1023	

PREAMP (X08-1750-10)

C1 -4	C90-0452-05	ELECTRO 100UF 6.3WV	*
C5 ,6	C91-0062-05	POLYSTY 100PF K	
C7 -10	C90-0461-05	ELECTRO 2.2UF 50WV	*
C11 -14	C91-0090-05	POLYSTY 150PF J	*
C15 -18	C90-0451-05	ELECTRO 220UF 10WV	*
C19 ,20	C90-0463-05	ELECTRO 2.2UF 35WV	*
C21 ,22	C90-0407-05	ELECTOR 220UF 16WV	
C23 ,24	C90-0462-05	ELECTRO 330UF 16WV	*
C25 -28	C90-0400-05	ELECTRO 100UF 25WV	
C29 ,30	C90-0442-05	ELECTRO 100UF 16WV	
C31 ,32	C91-0092-05	POLYSTY 220PF J	*
C33 ,34	C91-0100-05	POLYSTY 1000PF J	*
C35 ,36	C91-0061-05	POLYSTY 82PF K	
C39 ,40	C49-2018-43	POLYSTY 0.18UF J	
C41 ,42	C49-2051-33	POLYSTY 0.051UF J	

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Re-marks 備考
C43 ,44	C91-0103-05	POLYSTY 2200PF J	
C45 ,46	C91-0091-05	POLYSTY 180PF J	*
C47 ,48	C90-0450-05	ELECTRO 220UF 6,3WV	*
C49 ,50	C90-0454-05	ELECTRO 4,7UF 35WV	*
C51 ,52	C90-0460-05	ELECTRO 47UF 10WV	*
C53 ,54	C91-0100-05	POLYSTY 1000PF J	*
C55 ,56	C90-0397-05	ELECTRO 100UF 35WV	*
C57 ,58	C90-0456-05	ELECTRO 47UF 35WV	*
C59 -62	C90-0425-05	ELECTRO 100UF 10WV	
C63 -66	C90-0456-05	ELECTRO 47UF 35WV	*
C67 ,68	C90-0449-05	ELECTRO 1700UF 42WV	*
C69 ,70	C54-2710-39	CERAMIC 0,01UF P	
C71 ,72	C90-0420-05	ELECTRO 2200UF 25WV	
C73 ,74	C54-2710-39	CERAMIC 0,01UF P	
C75 ,76	C91-0100-05	POLYSTY 1000PF J	*
201 3D	E13-0426-05	PHONO JACK	*
L1 -4	L33-0275-05	CHOCK COIL	
R1 ,2	R48-2210-15	RN 100 J 2E	
R15 ,16	R48-6251-15	RN 510 J 2E	
R17 ,18	R48-2210-05	RN 10 J 2E	
R29 ,30	R48-6256-05	RN 56 J 2E	
R31 -34	R43-1210-05	FL-PROOF RD10 J 2E	
R35 ,36	R48-2236-35	RN 36K J 2E	
R37 -40	R43-1212-15	FL-PROOF RD120 J 2E	
R41 -44	R47-5412-15	FL-PROOF RS120 J 3A	
R45 ,46	R43-1268-25	FL-PROOF RD6,8K J 2E	
R49 ,50	R48-2251-35	RN 51K J 2E	
R69 ,70	R48-2243-93	RN 24,3 F 2E	
R73 ,74	R47-5410-25	FL-PROOF RS1K J 3A	
R75 ,76	R48-2147-13	RN 1,47K F 2E	
R77 ,78	R48-2178-23	RN 17,8K F 2E	
R89 -92	R47-5410-05	FL-PROOF RS10 J 3A	
R93 ,94	R48-2215-35	RN 15K J 2E	
R95 ,96	R48-6227-15	RN 270 J 2E	
R113-116	R47-5512-15	FL-PROOF RS120 J 3D	
R121,122	R48-6227-15	RN 270 J 2E	
VR1 ,2	R12-0502-05	TRIMMING POT 100 OFFSET	
RL1	S51-2039-05	RELAY	
D1 ,2	V11-2200-10	SV-22	
D3 -6	V11-7101-60	EQA01-11(R1)	
D7 -10	V11-9994-05	EQB01-13	
D11 ,12	V11-0375-05	EQA01-15	
D13 ,14	V11-7101-50	EQA01-10(R)	
D15 -20	V11-0271-05	1S2076	
D21 ,22	V11-2200-10	SV-22	
D23 -26	V11-7101-40	EQA01-05(T2)	
D27	V11-0271-05	1S2076	
D28 ,29	V11-5100-60	RB-151	
Q1 ,2	V03-2545-10	2SC2545(D,E)	*
Q3 ,4	V01-1083-10	2SA1083(D,E)	*
Q5 ,6	V01-0999-10	2SA999(E,F)	
Q7 ,8	V03-2320-10	2SC2320(E,F)	
Q9 ,10	V03-2003-20	2SC2003(M,L)	
Q11 ,12	V01-0954-20	2SA954(M,L)	
Q13 ,14	V09-0141-00	2SK146	
Q15 ,16	V03-2291-20	2SC2291(F,G)	
Q17 ,18	V01-0995-10	2SA995(F,G)	
Q19 ,20	V03-2320-10	2SC2320(E,F)	
Q21 -24	V01-0999-10	2SA999(E,F)	
Q25 ,26	V01-0992-10	2SA992(F,E)	

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格
Q27 ,28	V03-1845-10	2SC1845(F,E)
Q29 ,30	V03-0452-05	2SC1735
Q31 ,32	V01-0173-05	2SA850
Q33 ,34	V03-2320-10	2SC2320(E,F)
Q35 -38	V01-0999-10	2SA999(E,F)
Q39 ,40	V03-2320-10	2SC2320(E,F)
Q41 ,42	V02-0724-00	2SB724
Q43 ,44	V04-0762-00	2SD762

AUDIO (X09-1380-10)

C1 ,2	C49-2030-45	POLYSTY 0.3UF J
C3 ,4	C49-2039-45	POLYSTY 0.39UF J
C5 ,6	C91-0092-05	POLYSTY 220PF J
C7 ,8	C49-2010-45	POLYSTY 0.1UF J
C9 ,10	C49-2043-35	POLYSTY 0.043UF J
C13 ,14	C91-0055-05	POLYSTY 27PF K
C15 ,16	C90-0429-05	ELECTRO 100UF 25WV
C17 ,18	C90-0459-05	ELECTRO 33UF 25WV
C19 ,20	C90-0464-05	ELECTRO 33UF 10WV
C21 ,22	C91-0094-05	POLYSTY 330PF J
C25 ,26	C90-0397-05	ELECTRO 100UF 35WV
C27 ,28	C91-0052-05	POLYSTY 15PF K
C31 ,32	C91-0048-05	POLYSTY 5PF F
C33 ,34	C71-1705-01	CERAMIC 5PF C
C35 ,36	C91-0054-05	POLYSTY 22PF K
C37 ,38	C91-0058-05	POLYSTY 47PF K
C41 ,42	C91-0050-05	POLYSTY 10PF K
C43 ,44	C91-0093-05	POLYSTY 270PF J
C45 -48	C90-0432-05	ELECTRO 100UF 63WV
C49 ,50	C49-2022-45	MYLAR 0,22UF J
C51 -54	C25-1433-67	LL-ELEC 33UF 16WV
C52	C25-1210-67	LL-ELEC 10UF 16WV
C55	C25-1222-67	LL-ELEC 22UF 16WV
C57 ,58	C91-0092-05	POLYSTY 220PF J
301 1D	E06-0514-05	DIN CONNECTOR
302 2D	E13-0425-05	PHONO JACK
L1 -4	L33-0275-05	CHOCK COIL
R1 ,2	R48-2239-45	RN 390K J 2E
R3 ,4	R48-6210-45	RN 100K J 2E
R9 ,10	R48-2233-15	RN 330 J 2E
R11 ,12	R48-6210-45	RN 100K J 2E
R13 ,14	R48-6247-23	RN 4,7K J 2E
R17 ,18	R48-6243-25	RN 4,3K J 2E
R19 ,20	R48-2215-35	RN 15K J 2E
R25 ,26	R48-2210-15	RN 100 J 2E
R27 ,28	R48-2233-45	RN 330K J 2E
R29 ,30	R48-2230-25	RN 3K J 2E
R31 ,32	R48-6233-05	RN 33 J 2E
R33 ,34	R48-6268-15	RN 680 J 2E
R35 -38	R48-6239-35	RN 39K J 2E
R39 ,40	R47-5424-25	FL-PROOF RS2,4K J 3A
R41 ,42	R48-2251-05	RN 51 J 2E
R43 ,44	R48-6233-05	RN 33 J 2E
R45 ,46	R48-2222-25	RN 2,2K J 2E
R47 ,48	R47-1415-25	FL-PROOF RS1,5K J 3A
R49 ,50	R48-2230-25	RN 3K J 2E
R51 ,52	R48-2475-93	RN 47,5 F 2E
R55 ,56	R43-1247-25	FL-PROOF RD4,7K J 2E
R61 ,62	R48-2681-13	RN 6,81K F 2E
R63 ,64	R47-5427-25	FL-PROOF RS2,7K J 3A
R65 ,66	R47-5468-25	FL-PROOF RS6,8K J 3A
R67 ,68	R43-1222-15	FL-PROOF RD220 J 2E

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
C43 ,44	C91-0103-05	POLYSTY 2200PF J	
C45 ,46	C91-0091-05	POLYSTY 180PF J	*
C47 ,48	C90-0450-05	ELECTRO 220UF 6,3WV	*
C49 ,50	C90-0454-05	ELECTRO 4.7UF 35WV	*
C51 ,52	C90-0460-05	ELECTRO 47UF 10WV	*
C53 ,54	C91-0100-05	POLYSTY 1000PF J	*
C55 ,56	C90-0397-05	ELECTRO 100UF 35WV	*
C57 ,58	C90-0456-05	ELECTRO 47UF 35WV	*
C59 -62	C90-0425-05	ELECTRO 100UF 10WV	
C63 -66	C90-0456-05	ELECTRO 47UF 35WV	*
C67 ,68	C90-0449-05	ELECTRO 1700UF 42WV	*
C69 ,70	C54-2710-39	CERAMIC 0.01UF P	
C71 ,72	C90-0420-05	ELECTRO 2200UF 25WV	
C73 ,74	C54-2710-39	CERAMIC 0.01UF P	
C75 ,76	C91-0100-05	POLYSTY 1000PF J	*
201 3D	E13-0426-05	PHONO JACK	*
L1 -4	L33-0275-05	CHOCK COIL	
R1 ,2	R48-2210-15	RN 100 J 2E	
R15 ,16	R48-6251-15	RN 510 J 2E	
R17 ,18	R48-2210-05	RN 10 J 2E	
R29 ,30	R48-6256-05	RN 56 J 2E	
R31 -34	R43-1210-05	FL-PROOF RD10 J 2E	
R35 ,36	R48-2236-35	RN 36K J 2E	
R37 -40	R43-1212-15	FL-PROOF RD120 J 2E	
R41 -44	R47-5412-15	FL-PROOF RS120 J 3A	
R45 ,46	R43-1268-25	FL-PROOF RD6,8K J 2E	
R49 ,50	R48-2251-35	RN 51K J 2E	
R69 ,70	R48-2243-93	RN 24,3 F 2E	
R73 ,74	R47-5410-25	FL-PROOF RS1K J 3A	
R75 ,76	R48-2147-13	RN 1,47K F 2E	
R77 ,78	R48-2178-23	RN 17,8K F 2E	
R89 -92	R47-5410-05	FL-PROOF RS10 J 3A	
R93 ,94	R48-2215-35	RN 15K J 2E	
R95 ,96	R48-6227-15	RN 270 J 2E	
R113-116	R47-5512-15	FL-PROOF RS120 J 3D	
R121,122	R48-6227-15	RN 270 J 2E	
VR1 ,2	R12-0502-05	TRIMMING POT 100 OFFSET	
RL1	S51-2039-05	RELAY	
D1 ,2	V11-2200-10	SV-22	
D3 -6	V11-7101-60	EQA01-11(R1)	
D7 -10	V11-9994-05	EQB01-13	
D11 ,12	V11-0375-05	EQA01-15	
D13 ,14	V11-7101-50	EQA01-10(R)	
D15 -20	V11-0271-05	1S2076	
D21 ,22	V11-2200-10	SV-22	
D23 -26	V11-7101-40	EQA01-05(T2)	
D27	V11-0271-05	1S2076	
D28 ,29	V11-5100-60	RB-151	
Q1 ,2	V03-2545-10	2SC2545(D,E)	*
Q3 ,4	V01-1083-10	2SA1083(D,E)	*
Q5 ,6	V01-0999-10	2SA999(E,F)	
Q7 ,8	V03-2320-10	2SC2320(E,F)	
Q9 ,10	V03-2003-20	2SC2003(M,L)	
Q11 ,12	V01-0954-20	2SA954(M,L)	
Q13 ,14	V09-0141-00	2SK146	
Q15 ,16	V03-2291-20	2SC2291(F,G)	
Q17 ,18	V01-0995-10	2SA995(F,G)	
Q19 ,20	V03-2320-10	2SC2320(E,F)	
Q21 -24	V01-0999-10	2SA999(E,F)	
Q25 ,26	V01-0992-10	2SA992(F,E)	
Q27 ,28	V03-1845-10	2SC1845(F,E)	
Q29 ,30	V03-0452-05	2SC1735	
Q31 ,32	V01-0173-05	2SA850	
Q33 ,34	V03-2320-10	2SC2320(E,F)	
Q35 -38	V01-0999-10	2SA999(E,F)	
Q39 ,40	V03-2320-10	2SC2320(E,F)	
Q41 ,42	V02-0724-00	2SB724	
Q43 ,44	V04-0762-00	2SD762	
AUDIO (X09-1380-10)			
C1 ,2	C49-2030-45	POLYSTY 0.3UF J	
C3 ,4	C49-2039-45	POLYSTY 0.39UF J	
C5 ,6	C91-0092-05	POLYSTY 220PF J	*
C7 ,8	C49-2010-45	POLYSTY 0.1UF J	
C9 ,10	C49-2043-35	POLYSTY 0.043UF J	
C13 ,14	C91-0055-05	POLYSTY 27PF K	
C15 ,16	C90-0429-05	ELECTRO 100UF 25WV	
C17 ,18	C90-0459-05	ELECTRO 33UF 25WV	*
C19 ,20	C90-0464-05	ELECTRO 33UF 10WV	*
C21 ,22	C91-0094-05	POLYSTY 330PF J	*
C25 ,26	C90-0397-05	ELECTRO 100UF 35WV	
C27 ,28	C91-0052-05	POLYSTY 15PF K	
C31 ,32	C91-0048-05	POLYSTY 5PF F	*
C33 ,34	C71-1705-01	CERAMIC 5PF C	
C35 ,36	C91-0054-05	POLYSTY 22PF K	
C37 ,38	C91-0058-05	POLYSTY 47PF K	
C41 ,42	C91-0050-05	POLYSTY 10PF K	
C43 ,44	C91-0093-05	POLYSTY 270PF J	*
C45 -48	C90-0432-05	ELECTRO 100UF 63WV	*
C49 ,50	C49-2022-45	MYLAR 0,22UF J	
C51 -54	C25-1433-67	LL-ELEC 33UF 16WV	
C52	C25-1210-67	LL-ELEC 10UF 16WV	
C55	C25-1222-67	LL-ELEC 22UF 16WV	
C57 ,58	C91-0092-05	POLYSTY 220PF J	*
301 1D	E06-0514-05	DIN CONNECTOR	*
302 2D	E13-0425-05	PHONO JACK	*
L1 -4	L33-0275-05	CHOCK COIL	
R1 ,2	R48-2239-45	RN 390K J 2E	
R3 ,4	R48-6210-45	RN 100K J 2E	
R9 ,10	R48-2233-15	RN 330 J 2E	
R11 ,12	R48-6210-45	RN 100K J 2E	
R13 ,14	R48-6247-23	RN 4,7K J 2E	
R17 ,18	R48-6243-25	RN 4,3K J 2E	
R19 ,20	R48-2215-35	RN 15K J 2E	
R25 ,26	R48-2210-15	RN 100 J 2E	
R27 ,28	R48-2233-45	RN 330K J 2E	
R29 ,30	R48-2230-25	RN 3K J 2E	
R31 ,32	R48-6233-05	RN 33 J 2E	
R33 ,34	R48-6268-15	RN 680 J 2E	
R35 -38	R48-6239-35	RN 39K J 2E	
R39 ,40	R47-5424-25	FL-PROOF RS2,4K J 3A	
R41 ,42	R48-2251-05	RN 51 J 2E	
R43 ,44	R48-6233-05	RN 33 J 2E	
R45 ,46	R48-2222-25	RN 2,2K J 2E	
R47 ,48	R47-1415-25	FL-PROOF RS1,5K J 3A	
R49 ,50	R48-2230-25	RN 3K J 2E	
R51 ,52	R48-2475-93	RN 47,5 F 2E	
R55 ,56	R43-1247-25	FL-PROOF RD4,7K J 2E	
R61 ,62	R48-2681-13	RN 6,81K F 2E	
R63 ,64	R47-5427-25	FL-PROOF RS2,7K J 3A	
R65 ,66	R47-5468-25	FL-PROOF RS6,8K J 3A	
R67 ,68	R43-1222-15	FL-PROOF RD220 J 2E	
R69 ,70	R43-1210-15	FL-PROOF RD100 J 2E	
R71 ,72	R43-1247-15	FL-PROOF RD470 J 2E	
R73 ,74	R43-1222-15	FL-PROOF RD220 J 2E	
R100	R47-5418-15	FL-PROOF RS180 J 3A	
R103	R47-5418-15	FL-PROOF RS180 J 3A	
VR1	R10-4002-05	POTENTIOMETER VOLUME	*
VR2 ,3	R12-0502-05	TRIMMING POT. OFFSET	
VR4 ,5	R12-0003-05	TRIMMING POT. BIAS	
RL1 -4	S51-2039-05	RELAY	
S1	S90-0028-05	SLIDE SWITCH FIG303	*
S2 ,3	S90-0029-05	SLIDE SWITCH FIG304	*
D1	V11-0271-05	1S2076	
D3 -16	V11-0271-05	1S2076	
D17 ,18	V11-0287-05	WZ-240	
D19 ,20	V11-4100-30	WZ-197	
D21 ,22	V11-4103-60	XZ-051	
D29 -37	V11-0271-05	1S2076	
Q1 ,2	V03-2291-10	2SC2291(G,H)	
Q3 ,4	V09-0145-30	UPA68H(L,M)	
Q5 ,6	V03-2259-10	2SC2259(G,H)	
Q7 -10	V01-1124-10	2SA1124(R,S)	*
Q11 ,12	V03-2632-10	2SC2632(R,S)	*
Q13 -17	V01-0999-10	2SA999(E,F)	
Q18 ,19	V03-2320-10	2SC2320(E,F)	
SWITCH (X13-2650-xx)			
PL1 -8	B30-0219-05	LAMP(12V,0.08A) FIG406	*
PL9 -12	B30-0211-05	LAMP(12V,0.04A) FIG401	*
PL13-15	B30-0219-05	LAMP(12V,0.08A) FIG406	*
PL16-19	B30-0211-05	LAMP(12V,0.04A) FIG401	*
C1 ,2	C55-1710-38	CERAMIC 0.01UF Z	
C3 -6	C22-1247-71	ELECTRO 470UF 16WV	
C7	C24-1247-61	ELECTRO 47UF 16WV	
C8	C24-1022-71	ELECTRO 220UF 10WV	
R2	R43-1227-15	FL-PROOF RD270 J 2E	
R3 ,4	R47-1415-95	RS 1,5 J 3A	
S1	S42-2027-15	PUSH SWITCH FIG402	*
S2	S42-4012-05	PUSH SWITCH FIG403	*
S3	S42-2028-05	PUSH SWITCH FIG404	*
S4	S42-3034-05	PUSH SWITCH FIG405	*
D1	V11-5100-60	RB-151	
D2	V11-7101-30	EQA01-10(S1)	
D3	V11-0271-05	1S2076	KP
D3	V11-0271-05	1S2076	UM
D3	V11-0271-05	1S2076	X
Q1 ,2	V04-0855-10	2SD855(BD)	
SUB (X13-2660-10)			
501 1B	E11-0074-05	PHONE JACK	
R1 ,2	R47-5468-15	FL-PROOF RS680 J 3A	
VR1 502	R10-6001-05	POTENTIOMETER BALANCE	*
S1 503	S40-4029-05	PUSH SWITCH	*

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
L-01A POWER SUPPLY UNIT			
1 3A	-	SUB PANEL	
2 2A	-	MOUNTING HARDWARE(D)	
3 3B	-	MAIN CHASSIS	
4 1B	-	REAR PANEL	
5 2B	-	BOTTOM PLATE	
6 1B	-	ESCUTCHEON	
7 1B	-	RECTANGULAR PLUG	
8 1A	-	REINFORCING HARDWARE	
9 2B	-	MOUNTING HARDWARE(A)	
10 1B	-	MOUNTING HARDWARE(B)	
11 1B	-	MOUNTING HARDWARE(C)	
12 3B	-	SPACER	
13 1A	A03-0252-02	WOODEN CABINET	*
14 3A	A20-1549-04	PANEL	*
15 2A,3B	A50-0073-02	SIDE PLATE	
16 3A	B10-0259-03	FRONT GLASS	*
17 2A	B30-0210-05	LED	*
31 3A	B09-0015-04	CAP	
C1	C91-0023-05	CERAMIC 0.01UF AC250V	UM
C1	C91-0023-05	CERAMIC 0.01UF AC250V	XH
C1	C91-0079-05	CERAMIC 0.01UF AC125V	KP
18 1B	E03-0013-05	AC OUTLET	KU
18 1B	E03-0013-05	AC OUTLET	MX
18 1B	E03-0013-05	AC OUTLET	H
18 1B	E03-0014-05	AC OUTLET	P
19 1B	E30-0185-05	POWER CORD	X
19 1B	E30-0290-05	POWER CORD	KP
19 1B	E30-0291-05	POWER CORD	UM
19 1B	E30-0291-05	POWER CORD	H
19 1B	E30-0580-05	POWER CORD	E
19 1B	E30-0587-05	POWER CORD	T
20 1B	E30-0634-00	16P CORD WITH CONNECTOR	*
-	H01-3103-04	CARTON BOX	*
-	H12-0076-03	PACKING FIXTURE	*
-	H12-0077-03	PACKING FIXTURE	*
-	H12-0078-04	PACKING FIXTURE	*
-	H20-0460-04	COVER	
-	H39-0015-05	PACKING PARTS	
-	H40-0004-04	ANTI-RUST PAPER	M
21 3B	J02-0104-04	FOOT	
22 2A	J19-0509-04	LED HOLDER	
23 2B	J19-0514-05	PC SUPPORT	
24 1B	J41-0024-15	BUSHING	X
24 1B	J41-0033-05	BUSHING	KP
24 1B	J41-0033-05	BUSHING	TE
24 1B	J42-0078-05	BUSHING	UM
24 1B	J42-0078-05	BUSHING	H
25 2B	L01-1951-05	POWER TRANSFORMER	*K
25 2B	L01-1951-05	POWER TRANSFORMER	P
25 2B	L01-1952-05	POWER TRANSFORMER	T
25 2B	L01-1955-05	POWER TRANSFORMER	UM
25 2B	L01-1955-05	POWER TRANSFORMER	XH
25 2B	L01-1956-05	POWER TRANSFORMER	E
26 2A	L01-1961-05	POWER TRANSFORMER	*K
26 2A	L01-1961-05	POWER TRANSFORMER	P
26 2A	L01-1962-05	POWER TRANSFORMER	T
26 2A	L01-1965-05	POWER TRANSFORMER	UM

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
26 2A	L01-1965-05	POWER TRANSFORMER	XH
26 2A	L01-1966-05	POWER TRANSFORMER	E
27 3A	L01-1971-05	POWER TRANSFORMER	*K
27 3A	L01-1972-05	POWER TRANSFORMER	T
27 3A	L01-1975-05	POWER TRANSFORMER	UM
27 3A	L01-1975-05	POWER TRANSFORMER	XH
27 3A	L01-1976-05	POWER TRANSFORMER	E
27 3A	L01-1977-05	POWER TRANSFORMER	P
28 1A	N09-0323-04	SCREW	
29 3A	N09-0324-04	SCREW	
29 3A	N30-4008-45	PAN HEAD MACHINE SCREW	
30 3B	N09-0328-05	SCREW	
31 3A	N14-0124-04	SPECIAL NUT	
33 1B	S31-2050-05	SLIDE SWITCH	UM
33 1B	S31-2050-05	SLIDE SWITCH	XE
33 1B	S31-2050-05	SLIDE SWITCH	H
32 1B	X00-2080-11	POWER SUPPLY PCB ASSY	*K
32 1B	X00-2080-11	POWER SUPPLY PCB ASSY	P
32 1B	X00-2080-51	POWER SUPPLY PCB ASSY	T
32 1B	X00-2080-81	POWER SUPPLY PCB ASSY	UM
32 1B	X00-2080-81	POWER SUPPLY PCB ASSY	XH
32 1B	X00-2082-71	POWER SUPPLY PCB ASSY	E
POWER SUPPLY (X00-2080-xx)			
C1	C54-2710-39	CERAMIC 0.01UF P	
C2	C24-1247-71	ELECTRO 470UF 16WV	
C3 ,4	C54-2710-39	CERAMIC 0.01UF P	T
C3	C54-2710-39	CERAMIC 0.01UF P	E
C3	C91-0023-05	CERAMIC 0.01UF AC250V	UM
C3	C91-0023-05	CERAMIC 0.01UF AC250V	XH
C3 ,4	C91-0079-05	CERAMIC 0.01UF AC125V	KP
F1	F05-5021-05	FUSE(5A)	KP
F1 ,2	F05-5022-05	FUSE(5A)	UM
F1 ,2	F05-5022-05	FUSE(5A)	XH
F1 ,2	F05-5024-05	FUSE(5A)	E
F3	F05-1021-05	FUSE(1A)	KP
F3	F05-1023-05	FUSE(1A)	UM
F3	F05-1023-05	FUSE(1A)	XH
F3	F06-1021-05	FUSE(1A)	E
F4 ,5	F05-2521-05	FUSE(2.5A)	UM
F4 ,5	F05-2521-05	FUSE(2.5A)	XH
F4 ,5	F05-2528-05	FUSE(2.5A)	TE
F6	F05-5013-05	FUSE(0.5A)	UM
F6	F05-5013-05	FUSE(0.5A)	XH
F6 ,7	F05-5015-05	FUSE(0.5A)	TE
F6	F05-5021-05	FUSE(5A)	KP
101 1B	J13-0054-05	FUSE HOLDER	TE
101 1B	J13-0055-05	FUSE HOLDER X6	KP
101 1B	J13-0055-05	FUSE HOLDER X12	UM
101 1B	J13-0055-05	FUSE HOLDER X6	T
105 1B	J13-0055-05	FUSE HOLDER X12	XH
105 1B	J13-0055-05	FUSE HOLDER X12	E
R2	R47-5427-05	FL-PROOF RS27 J 3A	
RL1	S51-1027-05	RELAY	*U
RL1	S51-1027-05	RELAY	MX
RL1	S51-1027-05	RELAY	HE
RL1 ,2	S51-1027-05	RELAY	T
RL1 ,2	S51-1028-05	RELAY	*K
RL1 ,2	S51-1028-05	RELAY	P
D1 -5	V11-0295-05	W06B	

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

Region	Code
U.S.A.	K
Canade	P
PX	U
Australia	X
Europe & Scandinavia	E
England	T
South Africa	S
Other Areas	M
Audio Club	H

There is no plan for producing units of S type.