27 127

KENWOOD

HI/FI STEREO COMPONENTS

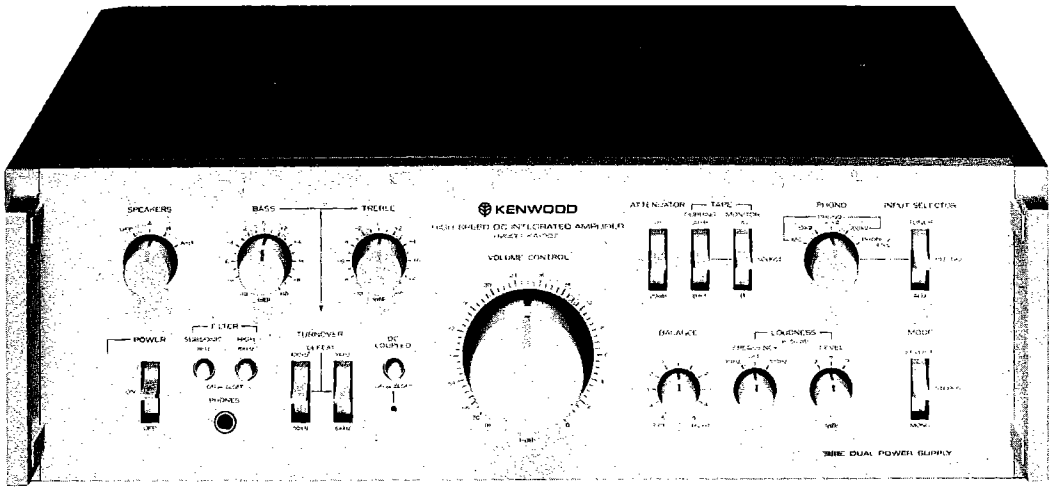
SERVICE MANUAL

KA-907
(KA-9077)

An item of adjustment is written in three languages — English, French 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.



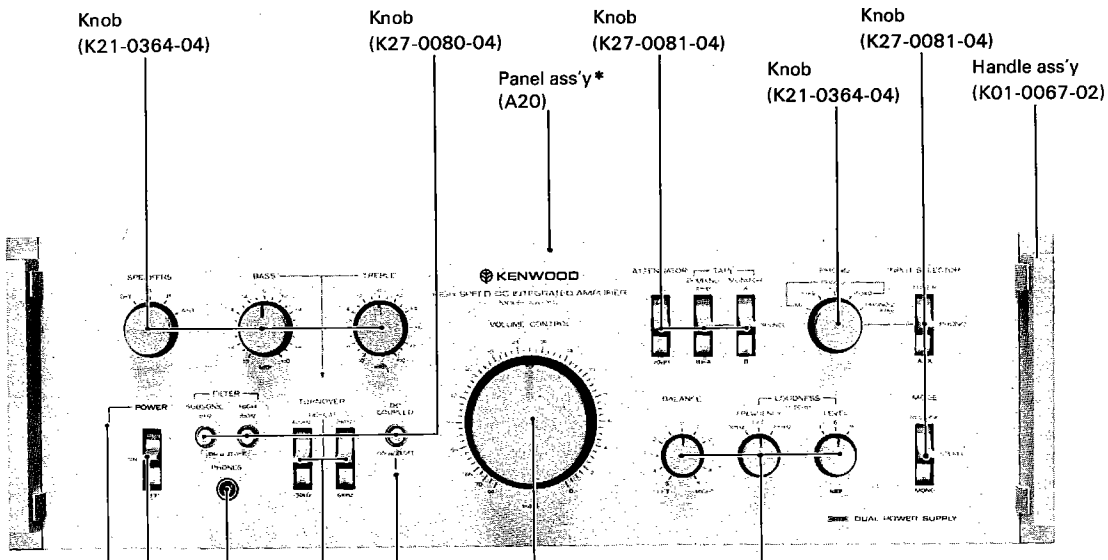
HIGH SPEED DC INTEGRATED AMPLIFIER

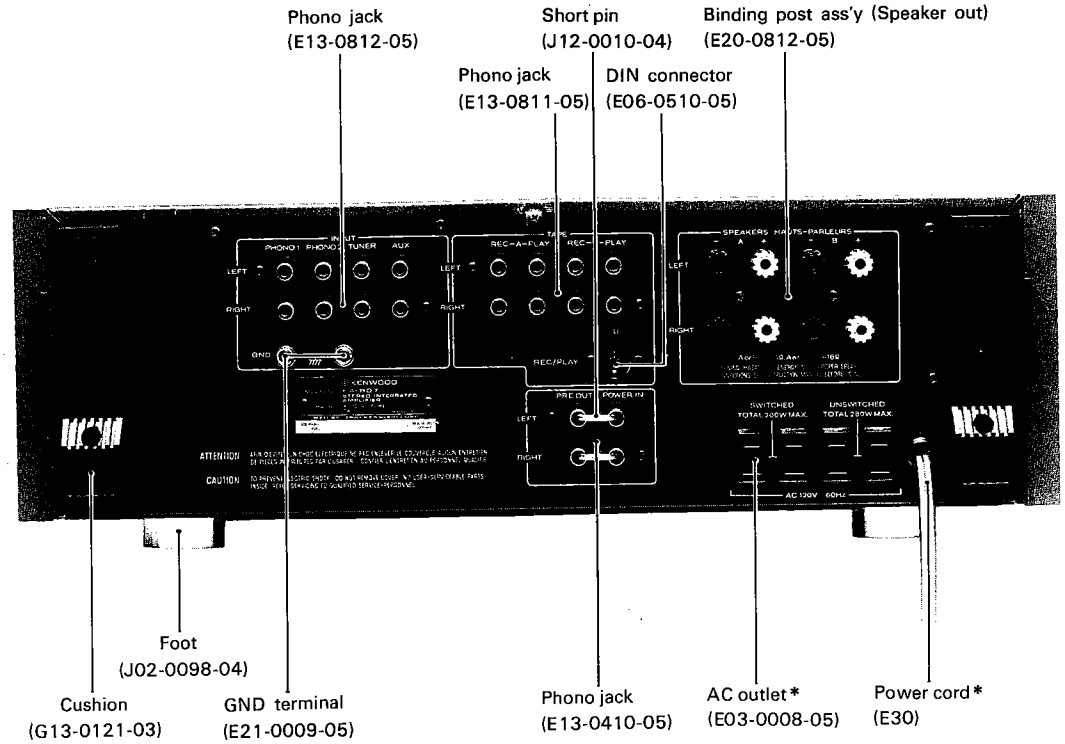
CONTENTS

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
Canada	P
PX	U
Australia	X
Europe	W
Scandinavia	L
England	T
South Africa	S
Other Areas	M
Audio Club (KA-9077)	H

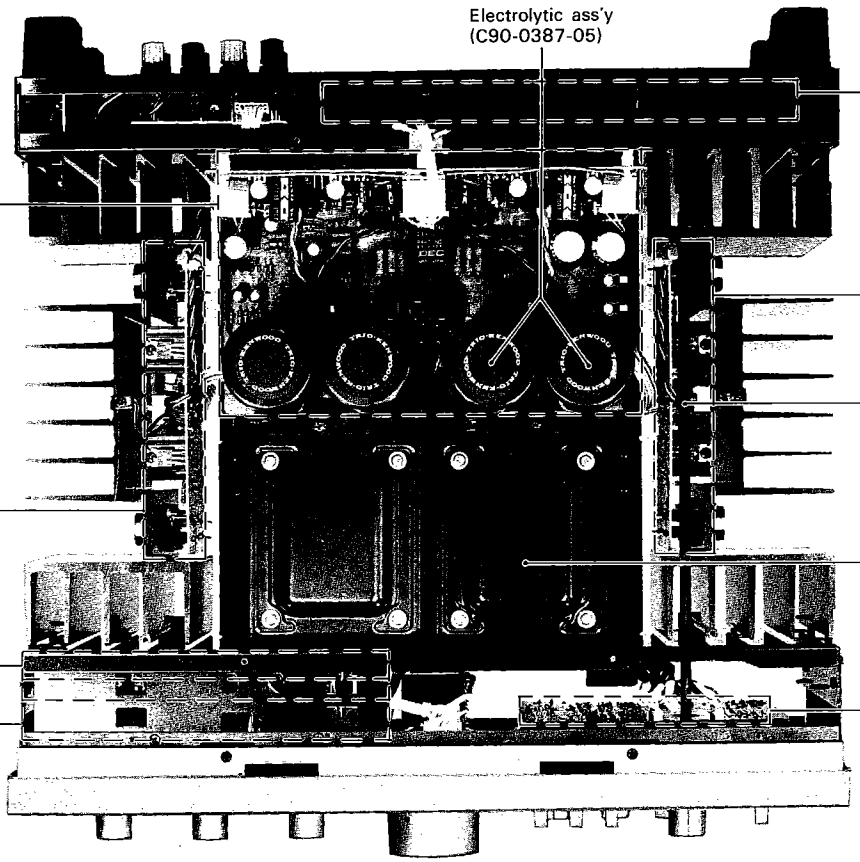
EXTERNAL VIEW

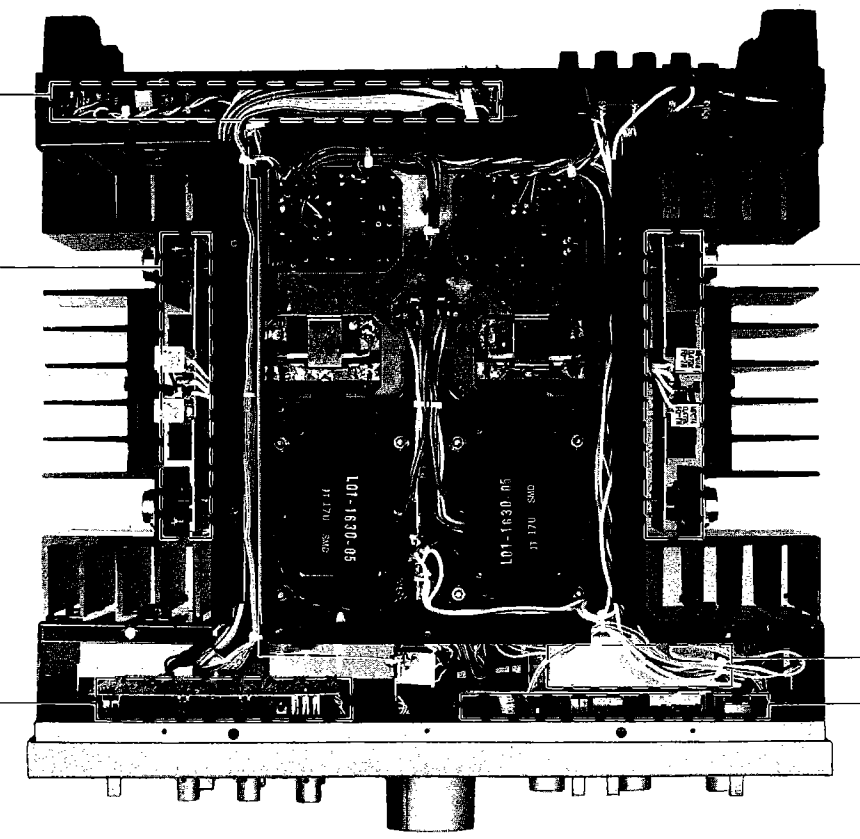




* Refer to Parts list.

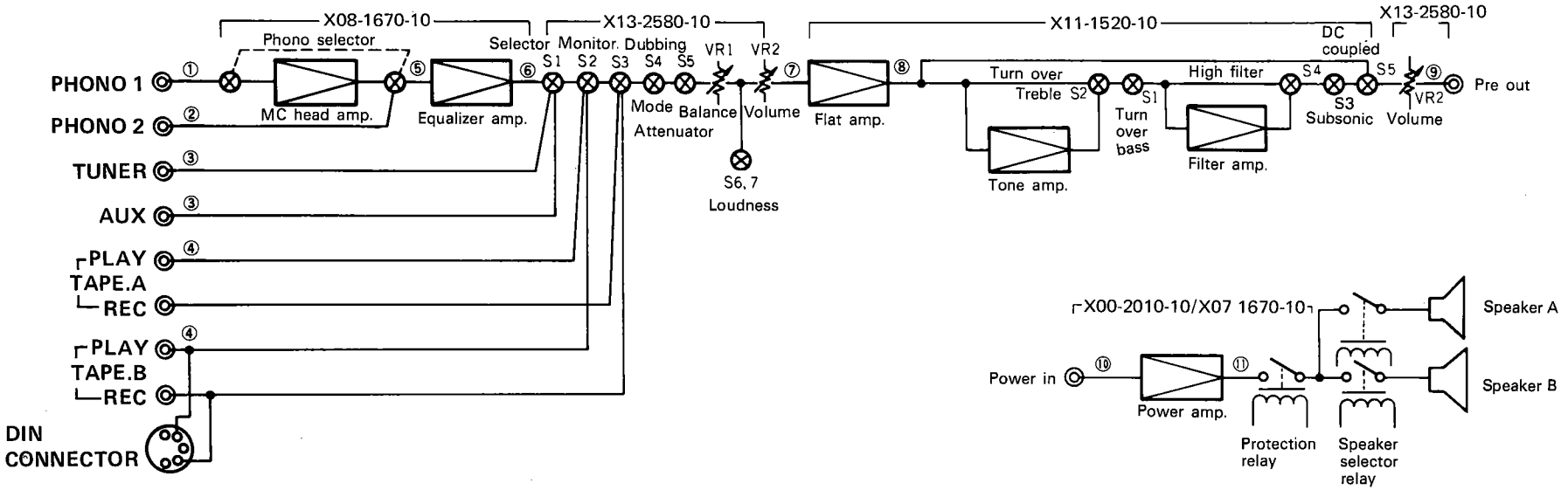
INTERNAL VIEW

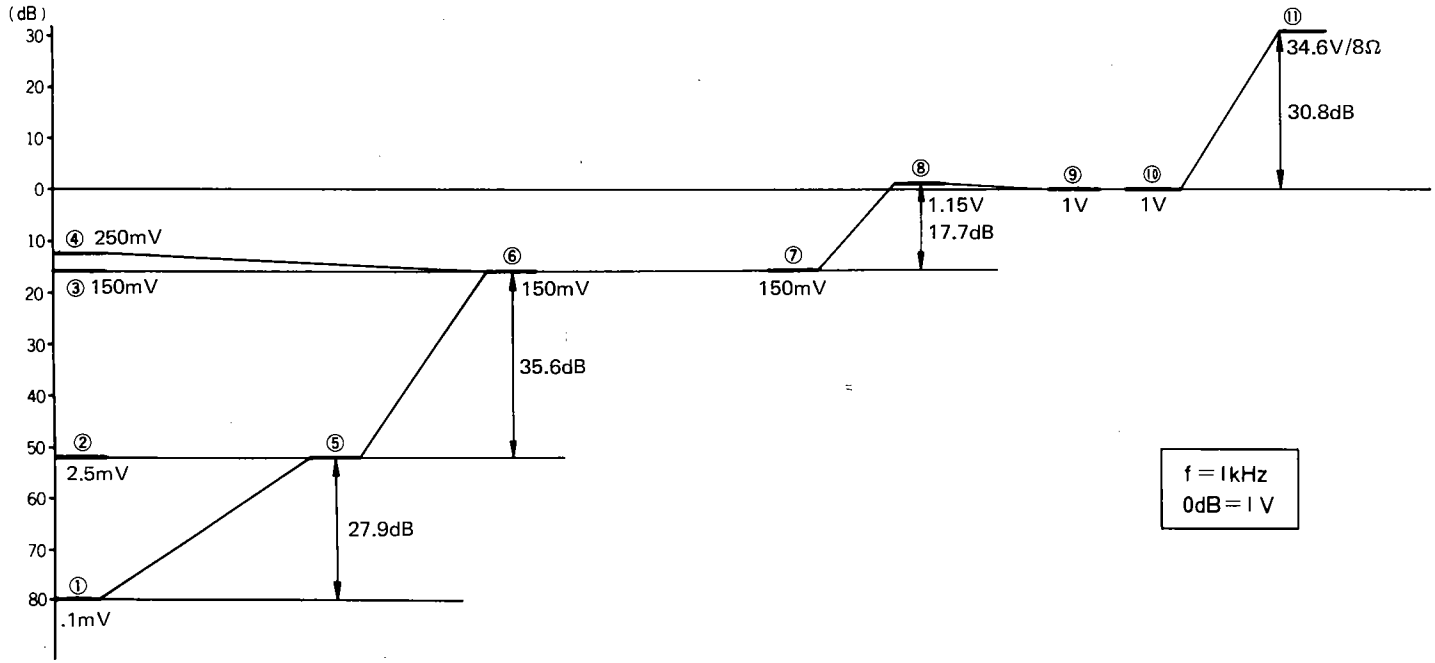




*Refer to parts list.

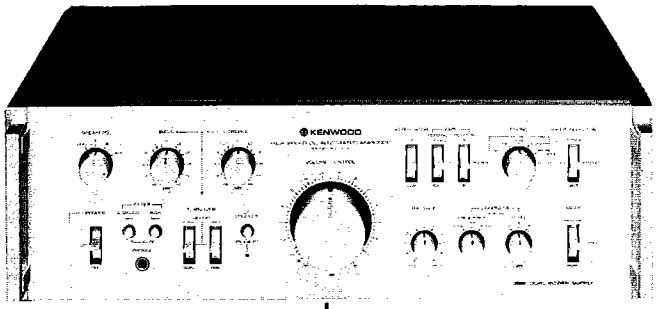
BLOCK/LEVEL DIAGRAM





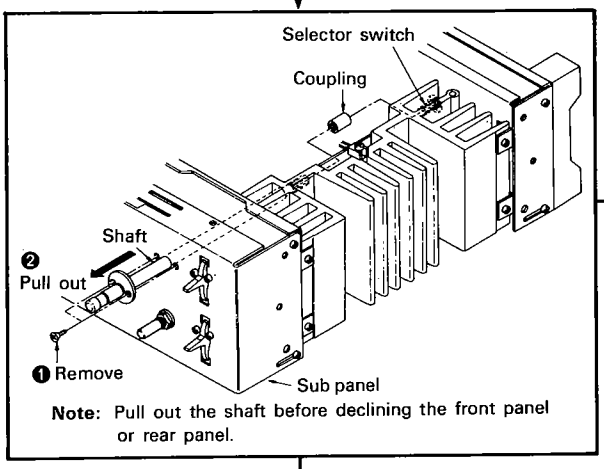
KA-907

DISASSEMBLY FOR REPAIR



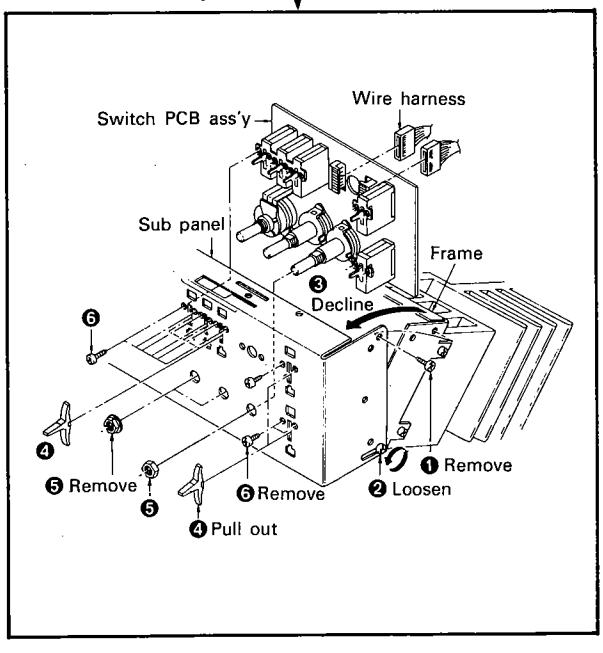
Remove the bottom plate and the case.
(Refer to EXPLODED VIEW)

Shaft

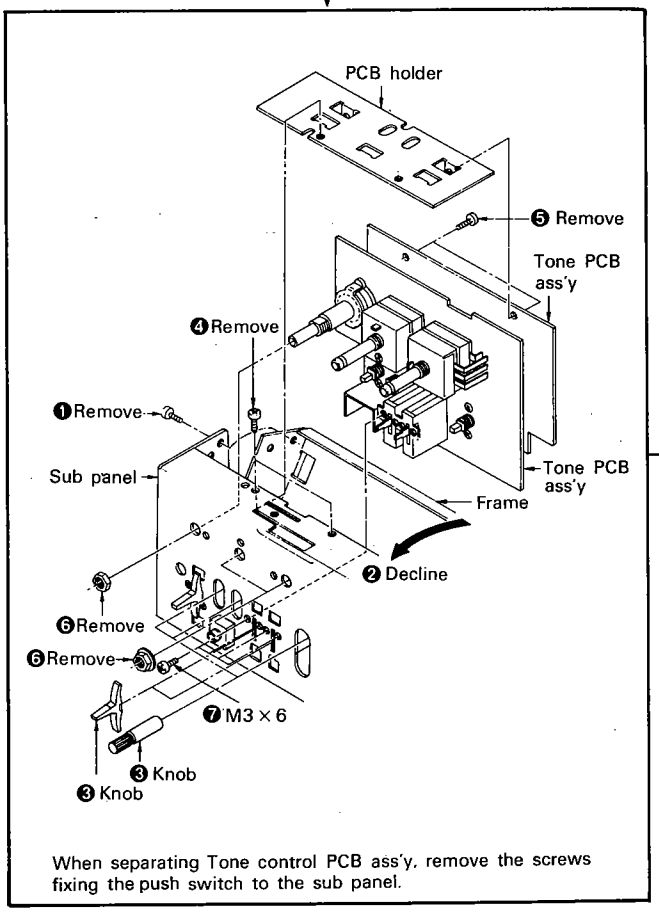


Note: Pull out the shaft before declining the front panel or rear panel.

Switch PCB ass'y



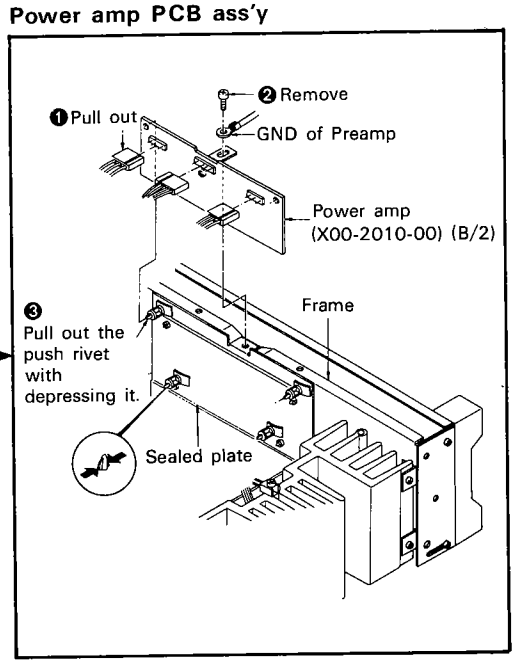
Tone control PCB ass'y



When separating Tone control PCB ass'y, remove the screws fixing the push switch to the sub panel.

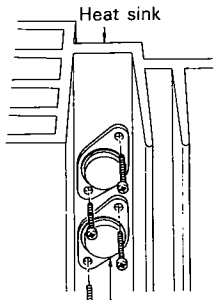
DISASSEMBLY FOR REPAIR

Power amp PCB ass'y

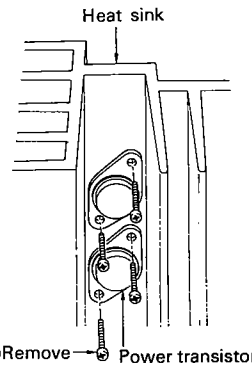


Power transistor

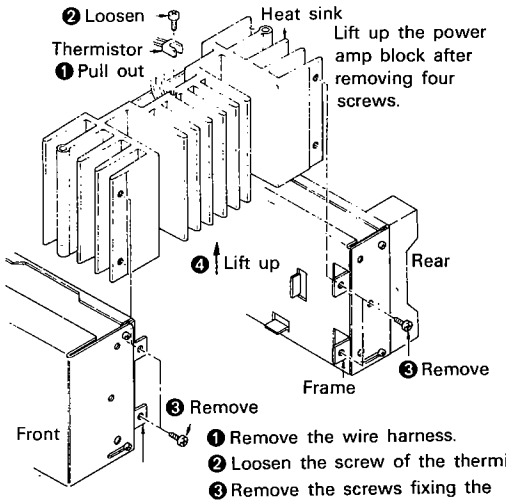
Remove the screws of the power transistor.



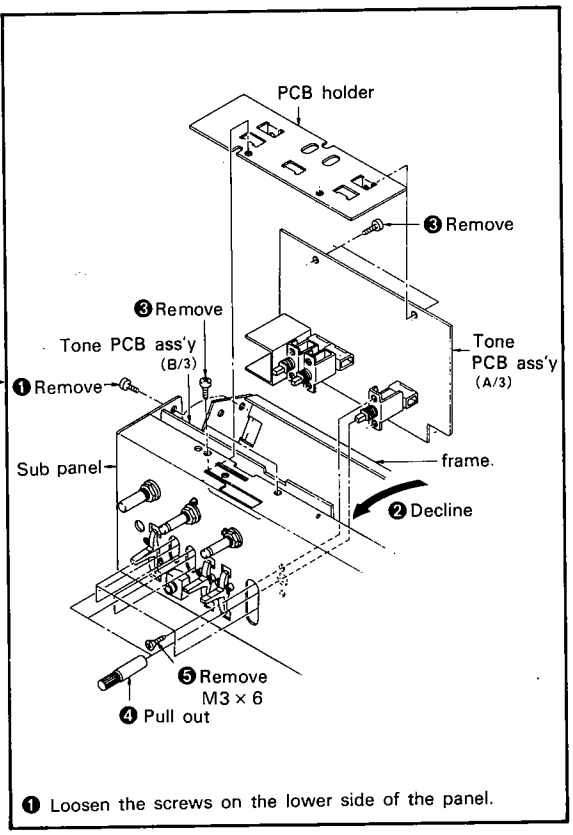
When separating PCB ass'y from the heat sink, remove the power transistors.



Power amp block

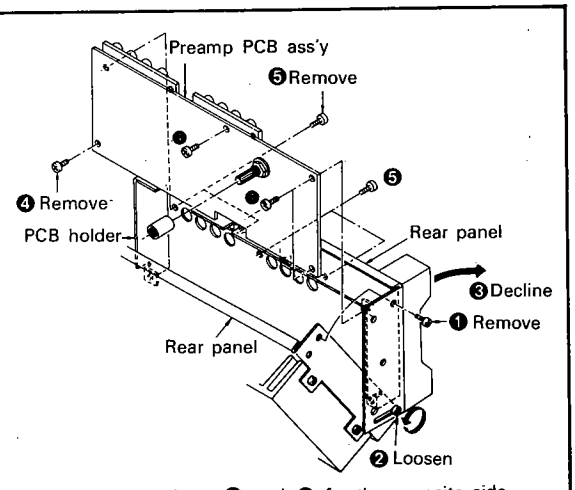


❶ Remove the wire harness.
❷ Loosen the screw of the thermistor.
❸ Remove the screws fixing the heat sink to the frame.
❹ Lift up the power amp block.



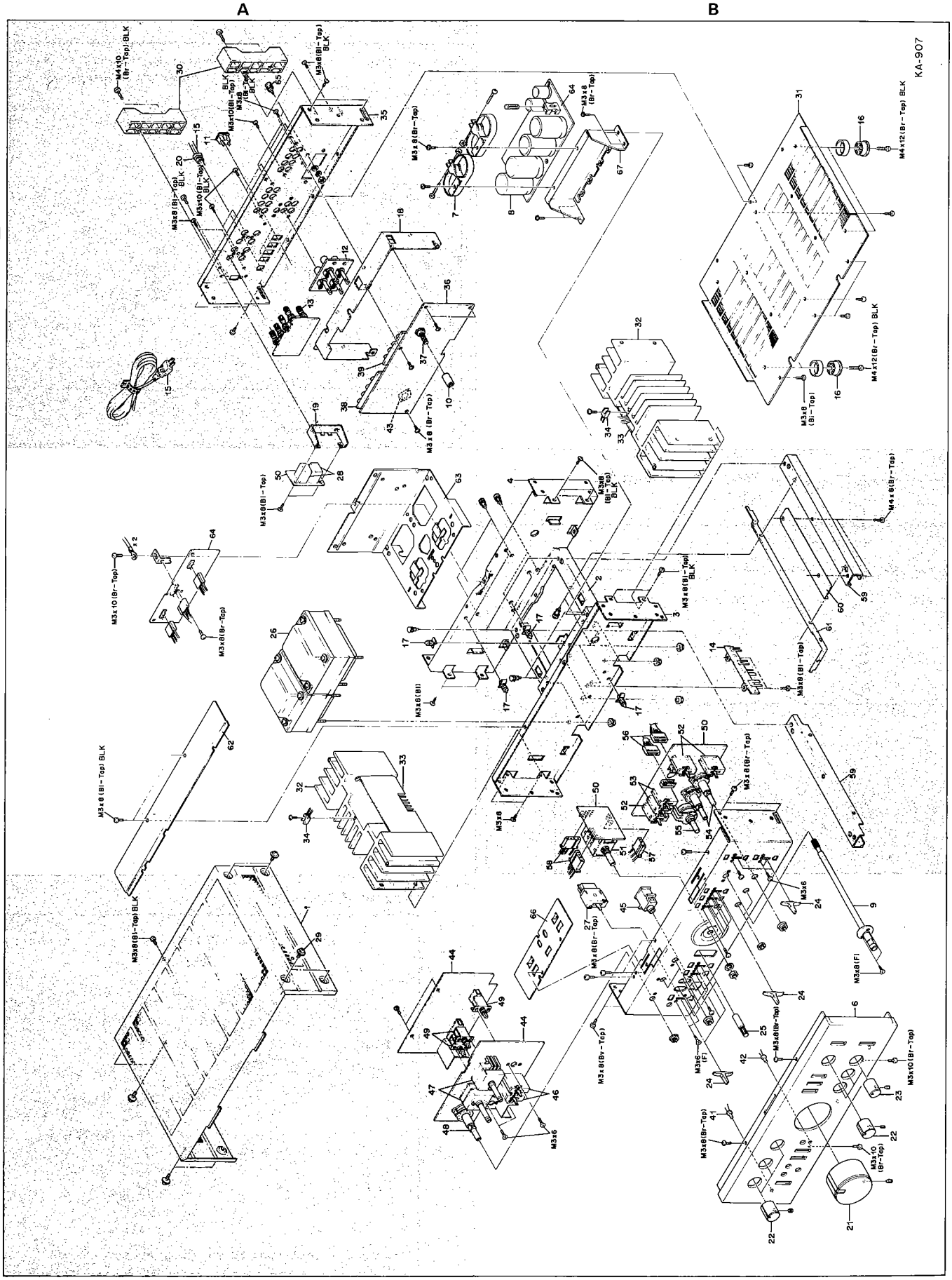
❶ Loosen the screws on the lower side of the panel.

Preamp PCB ass'y



Do the same procedures ❶ and ❷ for the opposite side.

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

☆: New parts

Ref. No.	Parts No.	Description	Remarks
1	A01-0348-02	Case	3A☆
2	—	Chassis	2B☆
3	—	Frame (Front)	2B☆
4	—	Frame (Rear)	2B☆
5	A20-1334-02	Panel ass'y **K, P, U, M, S, X, W, L**	3B☆
	A20-1335-02	Panel ass'y **H**	3B☆
	A20-1336-02	Panel ass'y **T**	3B☆
6	B01-0125-04	Panel escutcheon **K, P, U, M, S, X, W, L, T**	3B
	B01-0126-04	Panel escutcheon **H**	3B
7	—	Electrolytic cap holder	1A☆
8	C90-0380-05	Electrolytic cap. 18000μF 80WV	1B☆
9	D21-0452-03	Shaft	3B☆
10	D22-0034-04	Coupling	1A
11	E03-0008-05	AC outlet **K, P, U, M, H, S, X**	1A
12	E13-0410-05	Phono jack (Pre out-Power in)	1A
13	E20-0812-05	Binding post ass'y (Speaker out)	1A
14	—	PCB holder	2B
15	E30-0185-05	Power cord **X**	1A
	E30-0290-05	Power cord **K, P**	1A
	E30-0291-25	Power cord **U, M**	1A
	E30-0580-05	Power cord **H, W**	1A
	E30-0585-05	Power cord **L**	1A
	E30-0602-05	Power cord **S, T**	1A
16	J02-0098-04	Foot	1B
17	—	PCB holder	2A,2B
18	—	PCB holder	1A☆
19	—	PCB holder	1A☆
20	J41-0024-15	Power cord bushing **S, X, L, T**	1A
	J41-0033-05	Power cord bushing **H, W**	1A
	J42-0078-05	Power cord bushing **K, P, U, M**	1A
21	K21-0363-13	Knob (VOLUME)	3B☆
22	K21-0364-04	Knob (SELECTOR, TONE × 2, SPEAKER)	3B☆
23	K21-0365-04	Knob (BALANCE, LOUDNESS × 2)	3B☆
24	K27-0081-04	Knob (Lever switch)	3B☆
25	K27-0080-04	Knob (Push switch)	3B☆
26	L01-1631-05	Power transformer **K**	2A☆
	L01-1636-05	Power transformer **U, M, H, S, X**	2A☆
	L01-1637-05	Power transformer **P**	2A☆
	L01-1638-05	Power transformer **W, L, T**	2A☆
27	S33-2043-05	Power switch **K, P**	3B☆
	S33-2044-05	Power switch **W, L, T**	3B
	S33-2045-05	Power switch **U, M, H, S, X**	3B☆
28	S51-4034-05	Relay	2A
29	N08-0125-05	Dressed screw	3A
30	G13-0121-03	Cushion (Rear panel)	1A
31	—	Bottom plate	1B☆
32	—	Heat sink	1B, 2A☆
33	X07-1670-10	Power amp PCB ass'y	1B, 2A☆
34	V11-5100-10	Diode STV-4H (W)	1B,2A
35	—	Rear panel	1A☆
36	X08-1670-10	Preamp PCB ass'y	1A☆
37	S29-1115-05	Slide rotary switch	1A☆
38	E13-0811-05	Phono jack (8P, REC/P.B)	1A
39	E13-0812-05	Phono jack (8P, Phono, Tuner, Aux)	1A☆
40	—	—	
41	B30-0163-05	LED (Orange)	3B☆
42	B30-0164-05	LED (Green)	3B☆

Ref. No.	Parts No.	Description	Remarks
43	E06-0510-05	DIN connector	1A☆
44	X11-1520-10	Tone control PCB ass'y	3A, 3B☆
45	E11-0060-15	Headphone jack	3B
46	S33-4020-05	Lever switch (Turn over)	3B
47	R10-3002-05	Potentiometer (TONE)	3A☆
48	S01-1053-05	Rotary switch (SPEAKER)	3A☆
49	S40-4026-05	Push switch	3A, 3B☆
50	X13-2580-10	Switch PCB ass'y	2A, 2B☆
51	R11-9012-05	Potentiometer (VOLUME)	2B☆
52	S33-4020-05	Lever switch (SELECTOR, MODE, ATT)	2B☆
53	S33-4021-05	Lever switch (MONITOR, DUBBING)	2B☆
54	S01-1056-05	Rotary switch (LOUDNESS)	2B
55	R08-6002-05	Potentiometer (BALANCE)	2B☆
56	—	Pin ass'y (10P)	2B
57	—	Pin ass'y (3P)	2B
58	—	Pin ass'y (4P)	2B
59	—	Frame	2B☆
60	—	Shield plate	2B☆
61	—	Lead plate	2B☆
62	—	Shield plate	2A☆
63	—	Shield plate	2A☆
64	X00-2010-10	Power supply PCB ass'y **K, P**	2A, 1B☆
	X00-2010-61	Power supply PCB ass'y **W, L, T**	2A, 1B☆
	X00-2010-81	Power supply PCB ass'y **U, M, H, S, X**	2A, 1B☆
65	E21-0009-15	GND terminal	1A
66	—	PCB holder	3B☆
67	—	Electrolytic cap. holder	1B☆

CIRCUIT DESCRIPTION

MC HEAD AMPLIFIER

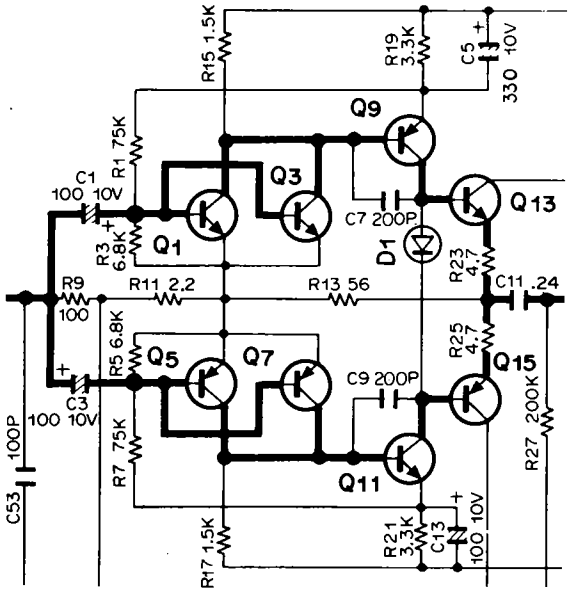


Fig. 1 MC Head Amplifier

The MC head amplifier consists of a three-stage, symmetrical complementary circuit, using low-noise transistors in the first stage.

An emitter follower circuit is used in the final stage so that the common emitter circuit in the second stage gives sufficient amplifier.

Negative feedback from the final stage emitter is applied to the first stage emitter, and the additional DC negative feedback from the second stage emitter is applied to the first stage base, which makes operation very stable.

The advantages of the complementary circuit are:

1. Although transistors Q1 and Q3, Q5 and Q7, and Q9 and Q11 are directly connected in series, these pairs of transistors can conduct as a paralled circuit for the output and input signals. Consequently the output impedance can be lowered and a higher output voltage can be obtained.
2. Push-pull operation reduces the distortion.
3. The circuit configuration makes the best use of the high S/N characteristics of the transistors.

POWER SAFETY INDICATOR CIRCUIT

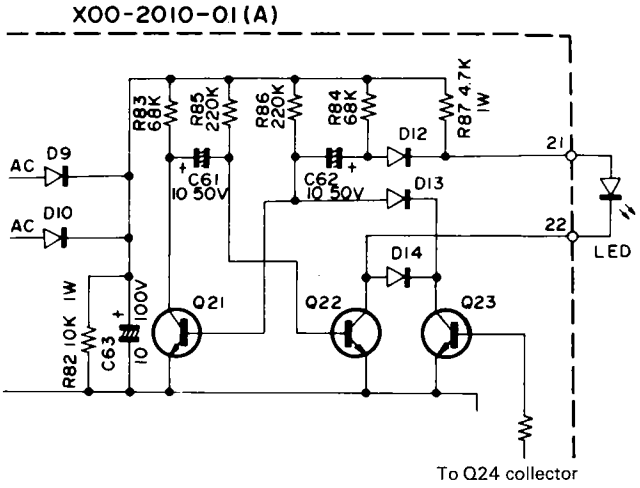


Fig. 2 Power safety indicator circuit

The LED flickers for about ten seconds after power-on and becomes constant by the protection relay being energized when all circuits in the KA-907 are stabilized, an astable multivibrator is used to flicker the LED.

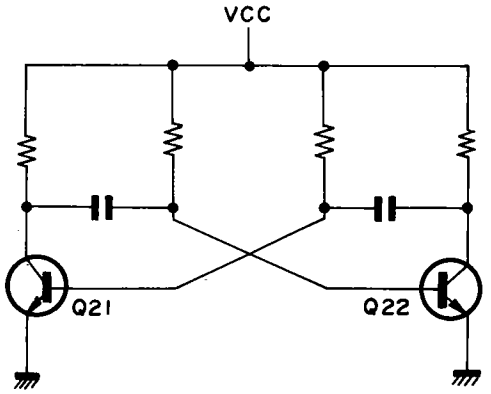


Fig. 3 Astable Multivibrator

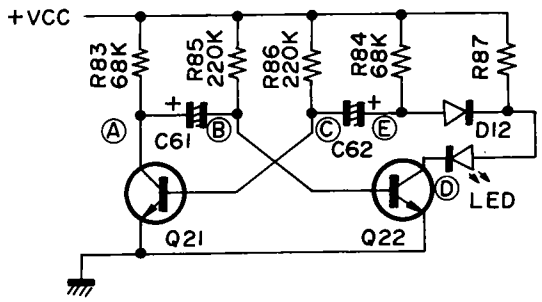
The astable multivibrator consists of two same transistors, Q21 and Q22. Strictly, characteristics of transistors are different.

When the circuit is energized, Q21 and Q22, both of the collector currents flow.

The collector current of either of two is larger than the other because of hFE difference or the like.

Assume the collector current of Q21 is larger than that of Q22.

CIRCUIT DESCRIPTION



Base current of Q21 flows. → Collector current of Q21 flows.
↓
Collector current of Q21 increases. → Collector voltage of Q21 drops.
↓
↑ Base current of Q21 increases. Base voltage of Q22 drops.
↓
↑ Collector voltage of Q22 increases. ← Collector current of Q22 decreases.

Fig. 4 Operation of Astable Multivibrator

Then, the voltage at (A) is lower than at (E). (Both voltages result from voltage drop across each collector load.)
These voltages are applied to (B) and (C) through C61 and C62, respectively. Since the base voltage of Q21 is higher than that of Q22, the collector current of Q21 further increases and that of Q22 further decreases, then stops flowing.
Then, Q21 is ON and Q22 is OFF. At this time, the voltage at each point is as follows: (A) = 0.1V, (B) = 0.1V, (C) = 0.7V, (D) = +Vcc. And C62 is charged at about Vcc.
Then, C61 is charged through R85, so voltage at (B) gradually increases. When the voltage at (B) reaches about 0.6V, the collector current of Q22 starts flowing, reducing the voltage at (E) by the voltage drop across R84. Voltage drop at (E) causes the voltage at (C), i.e., the base voltage of Q21, to drop through C62.
Then Q21 is cut off. C62 discharges through a path of (E) → R84 → R86 → (C), but it takes a certain time to complete discharge because of high resistance of R86 + R84. Therefore, C62 keeps the Vcc voltage for a few seconds after Q21 is cut off.

Since Q22 turns on, the voltage at (E) is lowered to about 2V by the voltage drop across R84. Since the potential difference between (C) and (E) is Vcc, the voltage at (C) is (2 − Vcc) ÷ −Vcc. (Refer to Fig. 5.)
At this time, the voltage at each point is as follows: A = +Vcc, (B) = 0.7V, (C) = +Vcc, (D) = 0.1V and (E) = 2V. The voltage at (E) is about 2V higher than at (D) by the forward voltage drop of LED and D12. Current energizing the LED mostly flows through R87.
Then, C62 is gradually charged and voltage at (C) increases from −Vcc. When the voltage at (C) reaches 0.6V, Q12 is turned on and Q22 is cut off, resulting in LED off. At this time, the voltage at each point is as follows: (A) = 0.1V, (B) = +Vcc, (C) = 0.7V, (D) = +Vcc and (E) = +Vcc.
The above procedures are repeated and the LED flickers. Waveform at each point is shown in the following chart.

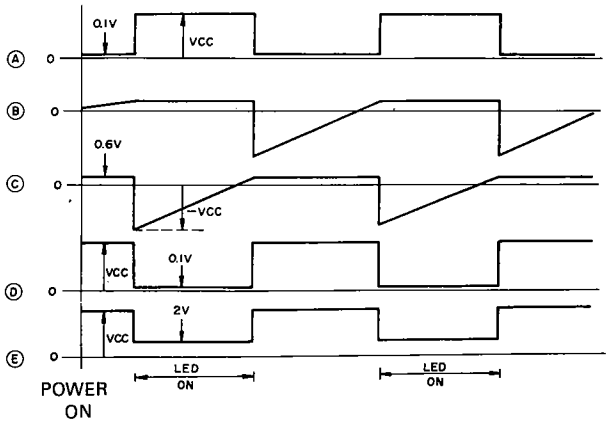


Fig. 6. Waveform at Each Point

After the circuit operation becomes stable, the protection relay is energized. The collector voltage of the relay drive transistor Q24 is fed to the base of Q23 through R73, causing Q23 to conduct. Q23 stops function of the multivibrator by means of D13 and D14, causing the LED keeping on lighting.

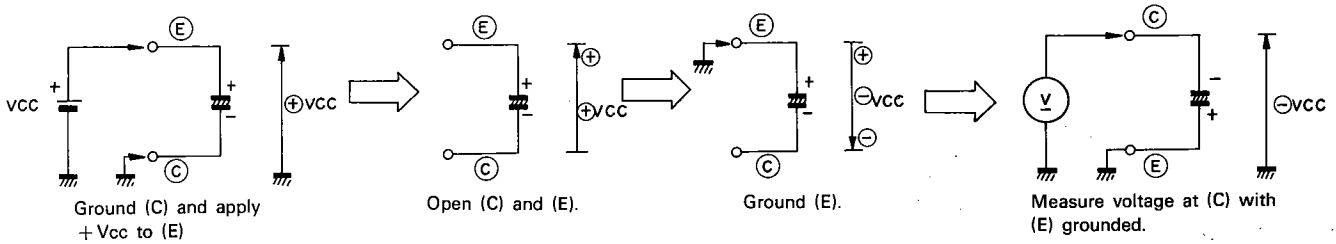


Fig. 5 Operation of C61 and C62

ADJUSTMENT

PREAMP OFFSET VOLTAGE ADJUSTMENT

1. Remove the rear panel and model name plate.
2. Connect a DC voltmeter between the adjusting point 14 and GND (13 and GND) of the Preamp (X08-1670-10).
3. Adjusting the trimming pot. VR1 (VR2), as shown in Fig. 1, for 0V reading of the DC voltmeter.

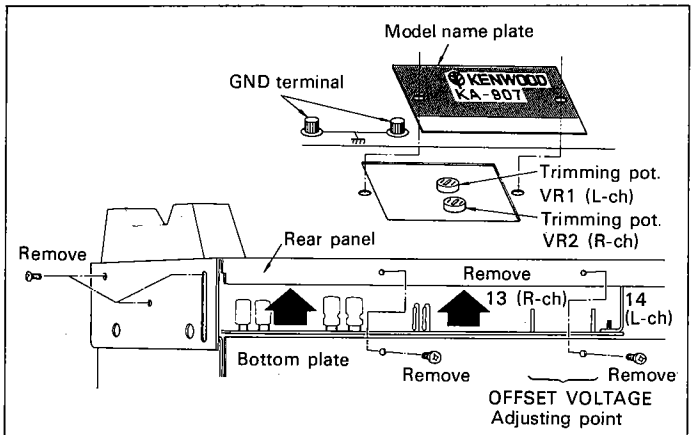


Fig. 1 Preamp offset voltage adjustment (Bottom view)

TONE CONTROL OFFSET VOLTAGE ADJUSTMENT

1. Connect the DC voltmeter between the adjusting point 15 and GND (17 and GND) of the Tone Control (X11-1520-10).
2. Adjust the trimming pot. VR4 (VR2) for a 0V reading of the DC voltmeter.

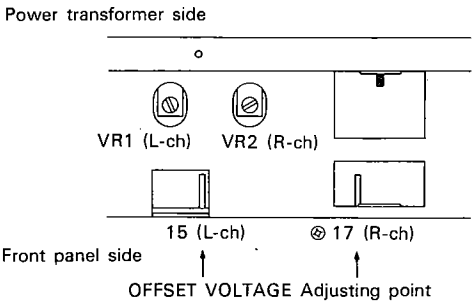


Fig. 2. Tone control offset voltage adjustment

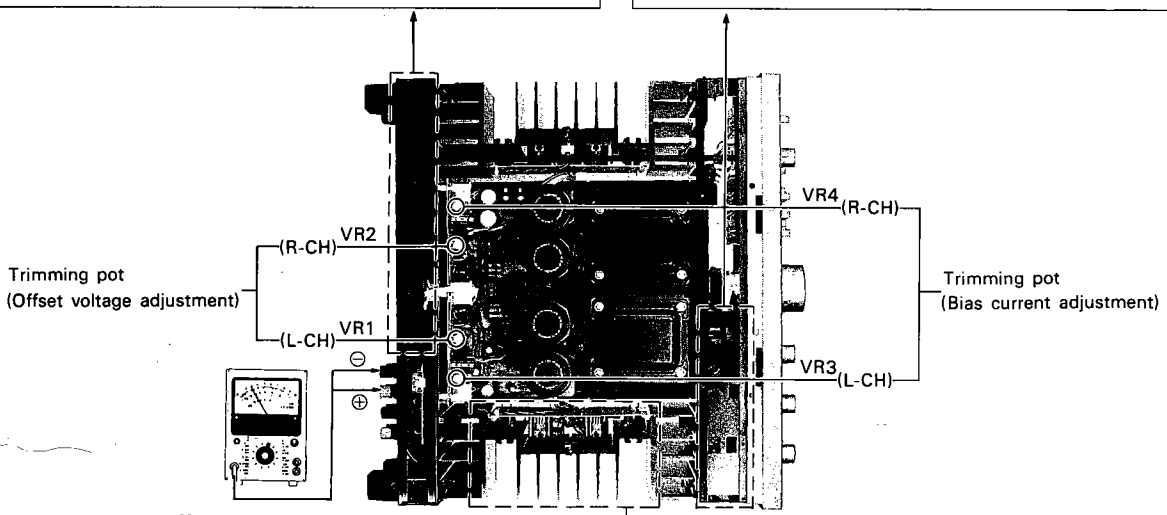


Fig. 3. POWER Amp offset voltage and Bias current adjustment

POWER AMP OFFSET VOLTAGE ADJUSTMENT

1. Connect the DC voltmeter between the ⊕ and ⊖ speaker terminals.
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 emitters of Q3 and of Q4, as shown in Fig. 4.
3. Adjust the trimming pot. VR3 (VR4), as shown in Fig. 3, for 20 mV reading of the voltmeter.

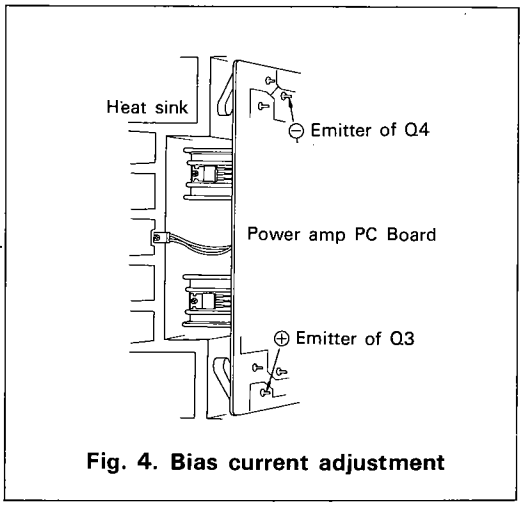


Fig. 4. Bias current adjustment

RÉGLAGES

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

1. Démonter le panneau arrière en dehors.
2. Brancher le voltmètre c.c. aux points d'alignement, 14 et GND (13 et GND), sur la plaque circuit imprimé du préampli (X08-1670-10).
3. Régler le potentiomètre ajustable VR1 (VR2) de façon à ce que le voltmètre c.c. indique 0V, comme le montre la figure 1.

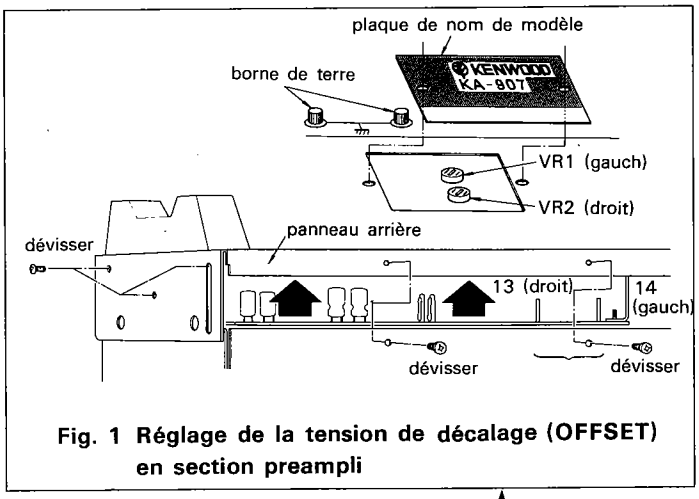


Fig. 1 Réglage de la tension de décalage (OFFSET) en section preampli

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

1. Brancher le voltmètre c.c. aux points d'alignement, 15 et GND (17 et GND), sur la plaque circuit imprimé de correction de timbre (X11-1520-10).
2. Régler le potentiomètre ajustable VR1 (VR2) de façon à ce que le voltmètre c.c. imdique 0V.

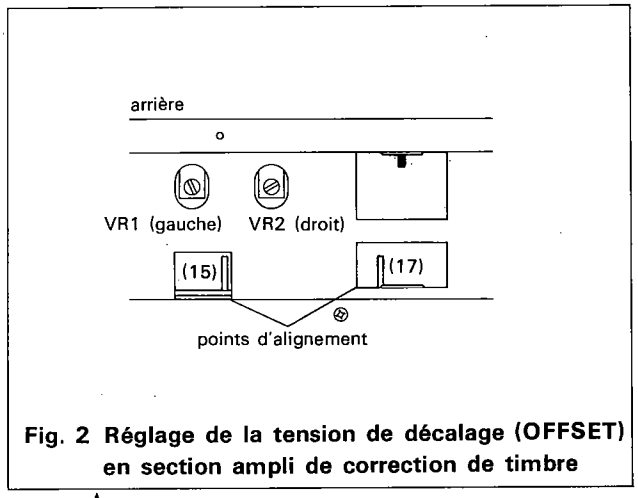


Fig. 2 Réglage de la tension de décalage (OFFSET) en section ampli de correction de timbre

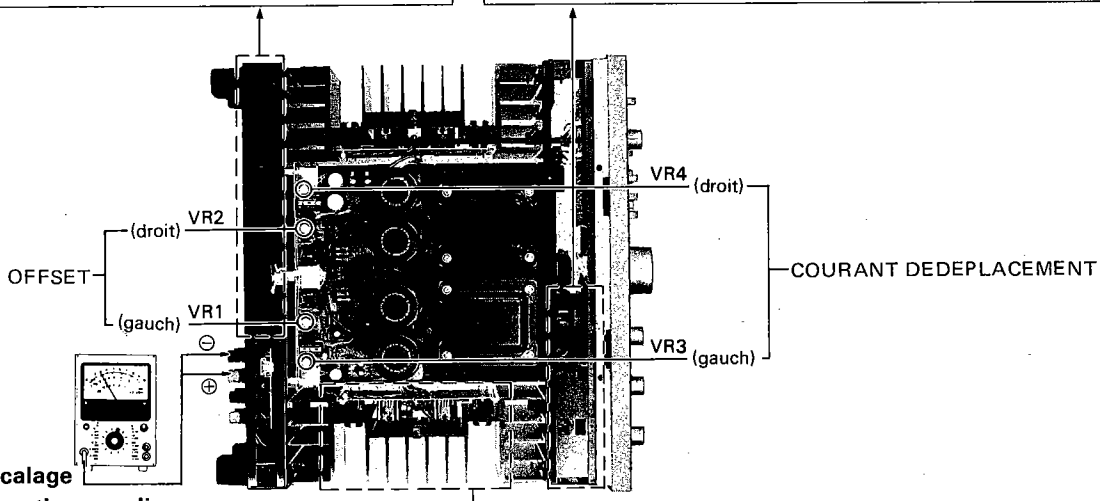


Fig. 3 Réglage de la tension de décalage (OFFSET) en section ampli

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

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

RÉGLAGE DU COURANT DE DEPLACEMENT

1. Touner le bouton de commande de volume à fond dans le sens invers de celui des aiguilles d'une montre.
2. Brancher le voltmètre c.c. sur l'émetteur de Q3 et Q4, comme le montre la figure 4.
3. Régler le potentiomètre ajustable VR3 (VR4) de façon à ce que le voltmètre c.c. indique 20 mV, comme le montre la figure 3.

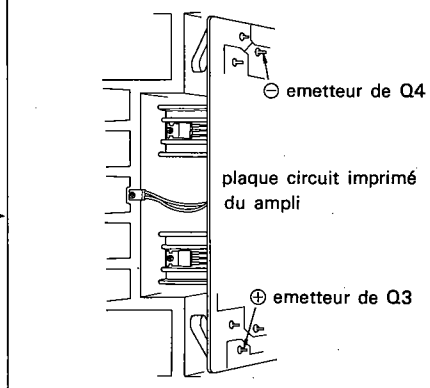


Fig. 4 Réglage du current de deplacement

ABGLEICH

OFFSET-SPANNUNG DES VORVERSTÄRKERS

1. Die Hinterseiteplatte und das Modell-Firmenschild neigen.
2. Den Gleichspannungsmesser zwischen dem Regulierungs-Punkt 14 und der Erde (13 und der Erde) des Vorverstärkers (X08-1670-10) anschließen.
3. Den halbeingebetteten Widerstand VR1 (VR2) so regulieren, daß die Gleichspannungsmesser-Ablesung 0V ist. (Abb. 1)

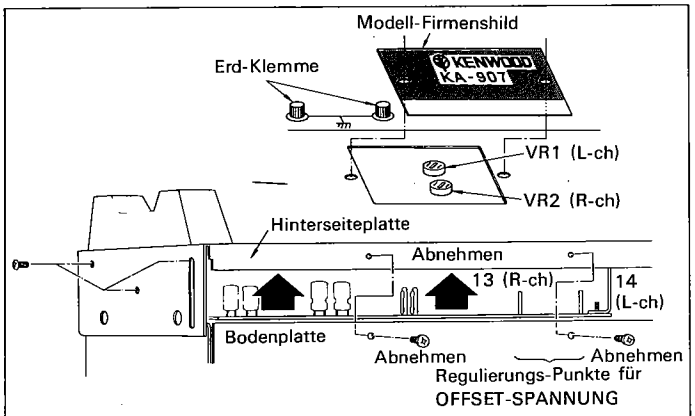


Abb. 1 OFFSET-SPANNUNG DES VORVERSTÄRKERS

OFFSET-SPANNUNG DES KLANGVERSTÄRKERS

1. Den Gleichspannungsmesser zwischen dem Regulierungs-Punkt 15 und der Erde (17 und der Erde) des Klangverstärkers (X11-1520-10) anschließen.
2. Den halbeingebetteten Widerstand VR1 (VR2) so regulieren, daß die Gleichspannungsmesser-Ablesung 0V ist.

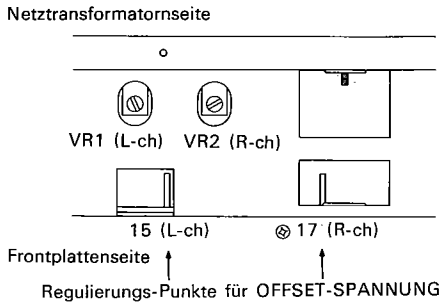
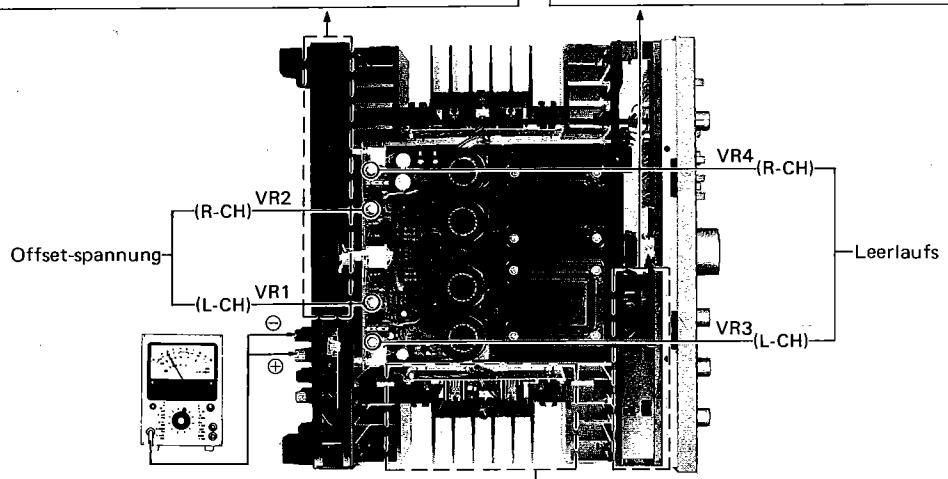


Abb. 2 OFFSET-SPANNUNG DES KLANGVERSTÄRKER



OFFSET-SPANNUNG DES ENDVERSTÄRKERS

1. Den Gleichspannungsmesser zwischen der Regulierungs-Punkt ⊕ und ⊖ des Endverstärkers anschließen.
2. Den halbeingebetteten Widerstand VR1 (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 Q3 und der Emitter-Elektrode von Q4. (Abb. 4)
3. Den halbeingebetteten Widerstand VR3 (VR4) so regulieren, daß die Gleichspannungsmesser-Ablesung 20 mV ist. (Abb. 3).

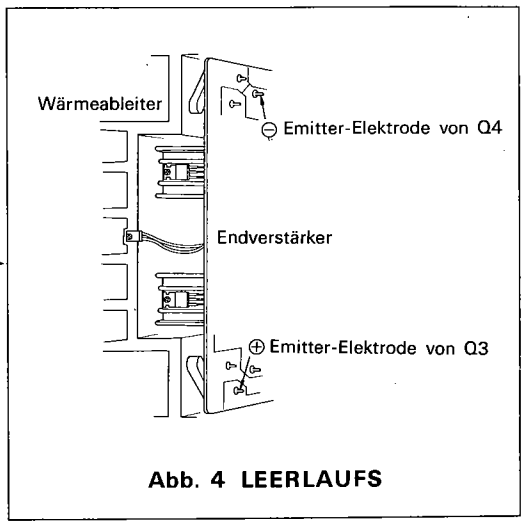
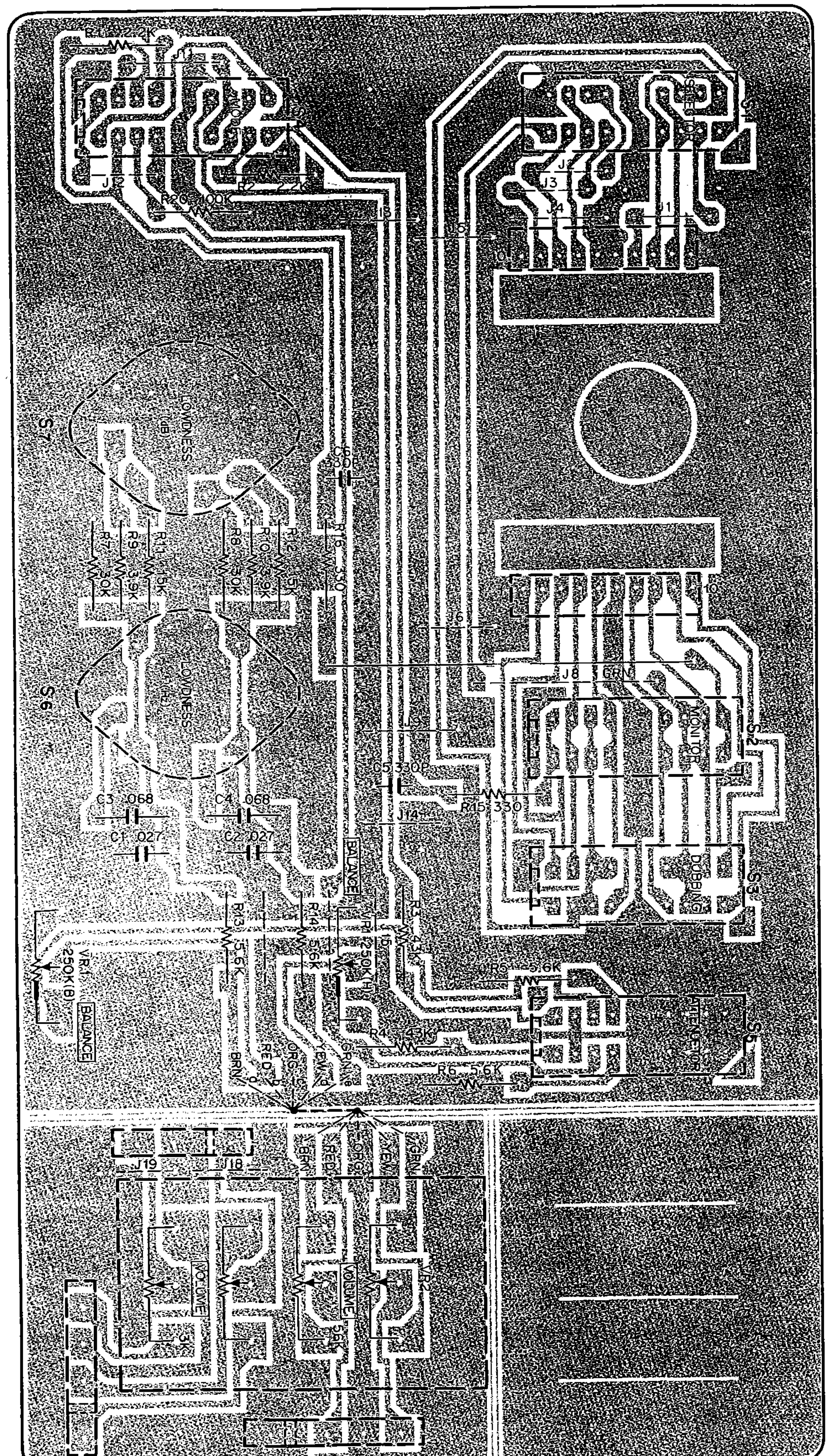


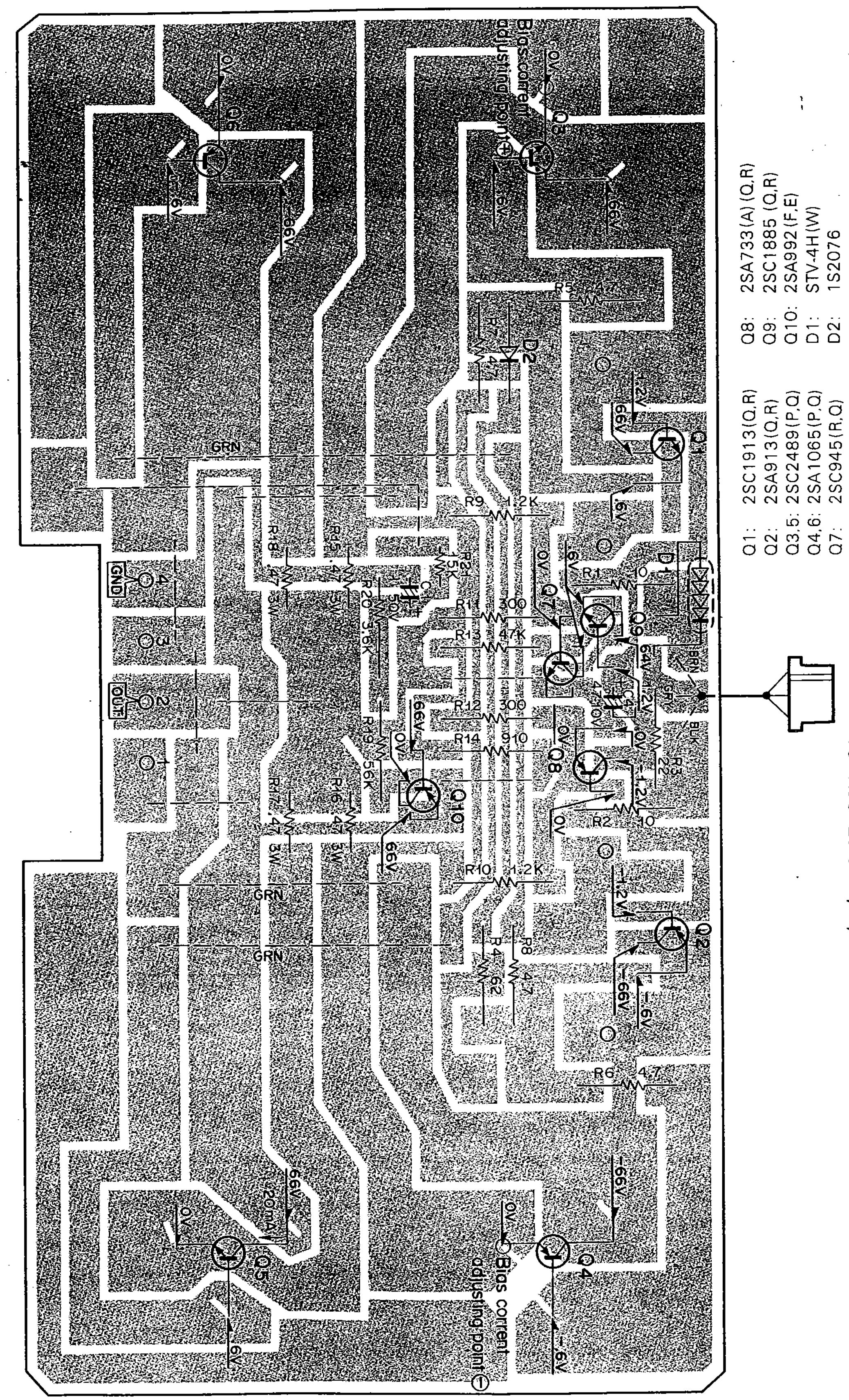
Abb. 4 LEERLAUFS

PC BOARD

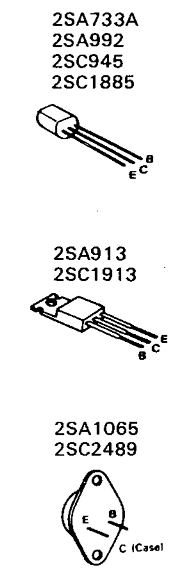
SWITCH PCB ASS'Y (X13-2580-10) (Foil side)



POWER AMP PCB ASS'Y (X07-1670-10) (Foil side)



Q1:	2SC1913(Q,R)	Q8:	2SA733(A)(Q,R)
Q2:	2SA913(Q,R)	Q9:	2SC1885 (Q,R)
Q3,5:	2SC2489(P,Q)	Q10:	2SA992(F,E)
Q4,6:	2SA1065(P,Q)	D1:	STV-4H(W)
Q7:	2SC945(R,Q)	D2:	1S2076



PARTS LIST

PARTS LIST

	Re-marks
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
1/4W	
2W	
R)	
,P)	
,P)	
F)	☆
Q,P)	
,P)	

	Re-marks

Ref. No.	Parts No.	Description	Re-marks
VR1	R08-6002-05	Potentiometer 250kΩ (BH)(BALANCE)	☆
VR2	R11-9012-05	Potentiometer 56kΩ, 3kΩ (VOLUME)	☆
R13,14	R48-2256-25	RN 5.6kΩ ±5% 1/4W	
R15,16	R48-2233-15	RN 330Ω ±5% 1/4W	
S1	S33-4020-05	Lever switch (SELECTOR)	
S2,3	S33-4021-05	Lever switch (MONITOR, DUBBING)	
S4,5	S33-4020-05	Lever switch (MODE, ATT.)	
S6,7	S01-1056-05	Rotary switch (LOUDNESS)	

TONE CONTROL PCB ASS'Y (X11-1520-10)

Ref. No.	Parts No.	Description	Re-marks
C1,2	C24-1433-61	Electrolytic 33μF 25WV	
C3,4	C91-0065-05	Polystyrene 8pF ±5%	
C5,6	C24-0822-71	Electrolytic 220μF 6.3WV	
C7,8	C91-0039-05	Metal film 0.1μF ±5%	
C9,10	C47-1718-25	Polystyrene 1800pF ±5%	
C11,12	C47-1715-15	Polystyrene 150pF ±5%	
C13,14	C91-0053-05	Polystyrene 18pF ±5%	
C15,16	C47-1712-15	Polystyrene 120pF ±5%	
C17,18	C24-1747-51	Electrolytic 4.7μF 50WV	
C19,20	C71-1727-05	Ceramic 27pF ±5%	
C21,22	C46-1768-25	Mylar 0.0068μF ±5%	
C23,24	C46-1733-25	Mylar 0.0033μF ±5%	
C25,26	C25-1710-57	Electrolytic 1μF 50WV	
C27,28	C71-1715-05	Ceramic 15pF ±5%	
C29,30	C25-1447-67	Electrolytic 47μF 25WV	
C31~34	C26-1433-57	NP-Electrolytic 3.3μF 25WV	
C35,36	C47-1712-25	Polystyrene 1200pF ±5%	
C41,42	C26-1422-67	NP-Electrolytic 22μF 25WV	
C43,44	C26-1447-67	NP-Electrolytic 47μF 25WV	
C45,46	C46-1733-45	Mylar 0.33μF ±5%	
C47~50	C46-1782-25	Mylar 0.0082μF ±5%	
C51~54	C25-1710-57	Electrolytic 1μF 50WV	
C55,56	C71-1722-05	Ceramic 22pF ±5%	
C57,58	C71-1710-02	Ceramic 10pF ±0.5pF	
C59~62	C24-1410-71	Electrolytic 100μF 25WV	
C63,64	C25-1447-67	Electrolytic 47μF 25WV	
C65~68	C46-1733-45	Mylar 0.33μF ±5%	
C69,70	C90-0409-05	Electrolytic 1000μF 35WV	☆
C71,72	C24-1410-71	Electrolytic 100μF 25WV	
C73,74	C71-1710-15	Ceramic 100pF ±5%	
C75	C24-1022-71	Electrolytic 220μF 10WV	
C76	C24-1433-61	Electrolytic 33μF 25WV	
C77	C24-1233-61	Electrolytic 33μF 16WV	
C78,79	C24-1433-71	Electrolytic 330μF 25WV	
C80,81	C24-1410-71	Electrolytic 100μF 25WV	
—	E11-0060-05	Headphone jack	
VR1,2	R12-0071-05	Trimming potentiometer 100Ω(B)	
VR3,4	R10-3002-05	Potentiometer 10kΩ(B) (TONE)	
R1,2	R48-2210-05	RN 10kΩ ±5% 1/4W	
R5,6	R43-1215-25	FP-RD 1.5kΩ ±5% 1/4W	
R9~12	R48-2215-05	RN 15Ω ±5% 1/4W	
R21,22	R48-2212-25	RN 1.2kΩ ±5% 1/4W	
R23~26	R48-2247-15	RN 470Ω ±5% 1/4W	
R27,28	R48-2247-25	RN 4.7kΩ ±5% 1/4W	
R29,30	R48-6275-05	RN 75Ω ±5% 1/4W	

Ref. No.	Parts No.	Description	Re-marks
R31,32	R48-6210-25	RN 1kΩ ±5% 1/4W	
R33,34	R48-6268-15	RN 680Ω ±5% 1/4W	
R37,38	R43-1212-15	FP-RD 120Ω ±5% 1/4W	
R39~42	R43-1210-15	FP-RD 100Ω ±5% 1/4W	
R47~50	R43-1222-05	FP-RD 22Ω ±5% 1/4W	
R63,64	R48-2210-15	RN 100Ω ±5% 1/4W	
R67,68	R48-2210-15	RN 100Ω ±5% 1/4W	
R109,110	R48-2210-15	RN 100Ω ±5% 1/4W	
R111,112	R43-1268-15	FP-RD 680Ω ±5% 1/4W	
R113,114	R43-1213-25	FP-RD 1.3kΩ ±5% 1/4W	
R119	R43-1218-25	FP-RD 1.8kΩ ±5% 1/4W	
R120,121	R47-5439-05	FP-RS 39Ω ±5% 1W	
R122~127	R47-5439-15	FP-RS 390Ω ±5% 1W	
S1,2	S33-4020-05	Lever switch (Turn over)	
S3~5	S40-4026-05	Push switch (Subsonic, DC, high-filter)	☆
S6	S01-1053-05	Rotary switch (Speaker)	☆
Q1,2	V09-0137-50	FET 2SK150A (GR,BL)	
Q3,4	V03-2291-20	Transistor 2SC2291 (F,G)	
Q5,6	V01-0995-10	Transistor 2SA995 (F,G)	☆
Q7,8	V03-2291-20	Transistor 2SC2291 (F,G)	
Q9,10	V01-0979-20	Transistor 2SA979 (G,H)	☆
Q11,12	V03-0270-05	Transistor 2SC945 (R,Q)	
Q13,14	V03-1904-10	Transistor 2SC1904 (V)	
Q15,16	V01-0209-05	Transistor 2SA899 (V)	
Q17	V03-0270-05	Transistor 2SC945 (R,Q)	
Q18	V01-0733-30	Transistor 2SA733 (A) (R,Q)	
Q19	V04-0330-20	Transistor 2SD330 (E,F)	
Q20	V02-0514-20	Transistor 2SB514 (E,F)	
D1,2	V11-0344-05	Zener diode WZ-140	
D3,4	V11-2200-10	Diode SV-22	
D5,6	V11-0271-05	Diode 1S2076	
D7,8	V11-0416-05	Zener diode EQA01-24	
D9	V11-0243-05	Zener diode WZ-061	
IC1~4	V30-0264-10	IC HA1457	

POWER SUPPLY PCB ASS'Y (X00-2010-10, -60, -80)

Ref. No.	Parts No.	Description	Re-marks
C1,2	C91-0062-05	Polystyrene 100pF ±5%	
C3,4	C91-0058-05	Polystyrene 47pF ±5%	
C5,6	C24-1410-71	Electrolytic 100μF 25WV	
C7,8	C24-1447-61	Electrolytic 47μF 25WV	
C9,10	C91-0062-05	Polystyrene 100pF ±5%	
C11,12	C47-1739-25	Polystyrene 0.0039μF ±5%	
C13,14	C26-1447-67	NP-Electrolytic 47μF 25WV	
C15,16	C24-0833-71	Electrolytic 330μF 6.3WV	
C17,18	C24-1410-71	Electrolytic 100μF 25WV	
C19,20	C24-2010-51	Electrolytic 1μF 100WV	
C21,22	C49-2010-35	Film 0.01μF ±5%	
C23~26	C24-2010-71	Electrolytic 100μF 100WV	
C27,28	C71-1705-01	Ceramic 5pF ±0.25pF	
C29,30	C71-1747-05	Ceramic 47pF ±5%	
C31,32	C71-1733-05	Ceramic 33pF ±5%	
C33,34	C71-1703-01	Ceramic 3pF ±0.5pF	

Ref. No.	Parts No.	Description	Re-marks
C35,36	C91-0047-05	Polystyrene 3pF ±5%	
C37,38	C71-1722-15	Ceramic 220pF ±5%	
C41,42	C91-0050-05	Polystyrene 10pF ±5%	
C47,48	C71-1747-05	Ceramic 47pF ±5%	
C51,52	C49-2047-35	Film 0.047μF ±5%	
C53~56	C91-0039-05	Metal film 0.1μF ±5%	
C57	C26-1447-67	NP-Electrolytic 47μF 25WV	
C58,59	C24-1210-61	Electrolytic 10μF 16WV	
C60	C25-1222-77	Electrolytic 220μF 16WV	
C61,62	C24-1710-61	Electrolytic 10μF 50WV	
C63	C24-2010-61	Electrolytic 10μF 100WV	
C65,66	C49-2010-35	Film 0.01μF ±5%	
C67,78	C90-0381-05	Electrolytic 2200μF 35WV	☆
C69,70	C24-6522-71	Electrolytic 220μF 35WV	
F1~4	F05-5021-05	Fuse (5A) **K,P**	
F1~4	F05-5022-05	Fuse (5A) **U,M,H,S,X**	
F1~4	F05-5024-05	Fuse (5A) **W,L,T**	
F5,6	F05-2021-05	Fuse (2A) **K,P**	
F5,6	F05-2023-05	Fuse (2A) **U,M,H,S,X**	
F5,6	F05-2029-05	Fuse (2A) **W,L,T**	
—	J13-0058-05	Fuse holder × 3	
L1~4	L33-0275-05	Choke Coil	
L5,6	L39-0082-05	Phase compensate coil	
VR1~4	R12-0501-05	Trimming potentiometer 100Ω(B)	
RL	S51-4034-05	Relay	
R1~4	R48-2247-15	RN 470Ω ±5% 1/4W	
R5,6	R48-2256-35	RN 56kΩ ±5% 1/4W	
R7,8	R48-2239-15	RN 390Ω ±5% 1/4W	
R31~34	R47-5533-25	FP-RS 3.3kΩ ±5% 2W	
R35~38	R47-5468-15	FP-RS 680Ω ±5% 1W	
R39,40	R43-1233-25	FP-RD 3.3kΩ ±5% 1/4W	
R41,42	R47-5482-05	FP-RS 82Ω ±5% 1W	
R43~46	R47-5433-25	FP-RS 3.3kΩ ±5% 1W	
R47~50	R47-5418-15	FP-RS 180Ω ±5% 1W	
R51~54	R48-6227-35	RN 27kΩ ±5% 1/4W	
R61,62	R47-5447-95	FP-RS 4.7Ω ±5% 1W	
R63~68	R47-5515-05	FP-RS 15Ω ±5% 2W	
R75	R47-5468-25	FP-RS 6.8kΩ ±5% 1W	
R76	R43-1210-25	FP-RD 1kΩ ±5% 1/4W	
R77	R47-5447-25	FP-RS 4.7kΩ ±5% 1W	
R79~81	R47-5436-25	FP-RS 3.6kΩ ±5% 1W	
R82	R47-5410-35	FP-RS 10kΩ ±5% 1W	
R87	R47-5447-25	FP-RS 4.7kΩ ±5% 1W	
R88,89	R47-5582-15	FP-RS 820Ω ±5% 2W	
Q1,2	V09-0129-10	FET 2SK109 (D,E)	
Q3~6	V09-0122-80	FET 2SK68A (L,M)	
Q7~10	V03-1845-10	Transistor 2SC1845 (F,E)	
Q11~14	V03-1775-00	Transistor 2SC1775	
Q15~18	V01-1125-10	Transistor 2SA1125 (R,S)	☆
Q19,20	V03-2633-10	Transistor 2SC2633 (R,S)	☆
Q21~23	V03-1845-10	Transistor 2SC1845 (F,E)	
Q24	V01-0173-05	Transistor 2SA850	
D1,2	V11-0416-05	Zener diode EQA01-24	
D3,4	V11-0254-05	Zener diode YZ-140	
D5,6	V11-0416-05	Zener diode EQA01-24	
D7,8	V11-0271-05	Diode 1S2076	
D9~11	V11-0295-05	Diode W06B	

Ref. No.	Parts No.	Description	Re-marks
D12~14	V11-0273-05	Diode 1S2076A	
D15	V11-0386-05	Zener diode EQA01-20	
D16~20	V11-0295-05	Diode W06B	
D21,22	V11-2101-20	Diode M4C-41-12 *1	
D23,24	V11-4103-60	Zener diode XZ-051	
IC1	V30-0291-10	IC HA12002	

KA-907

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