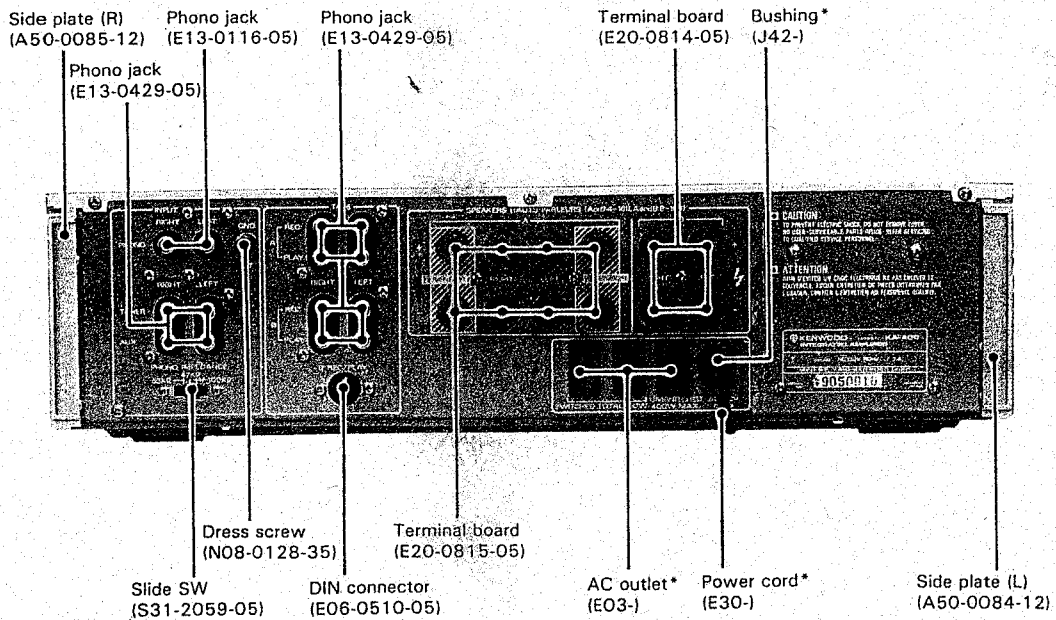
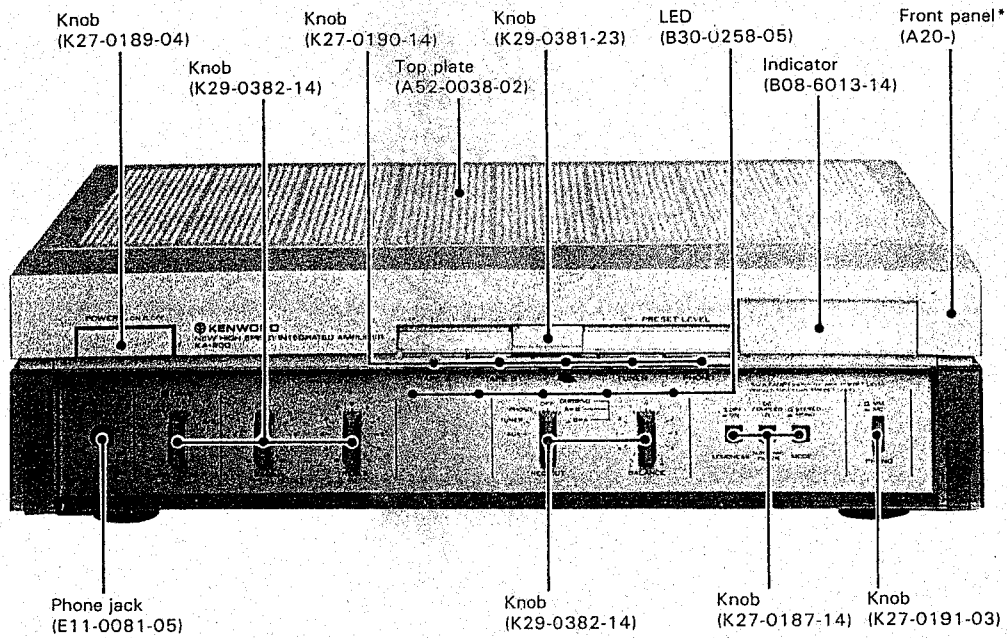


NEW HIGH SPEED INTEGRATED AMPLIFIER

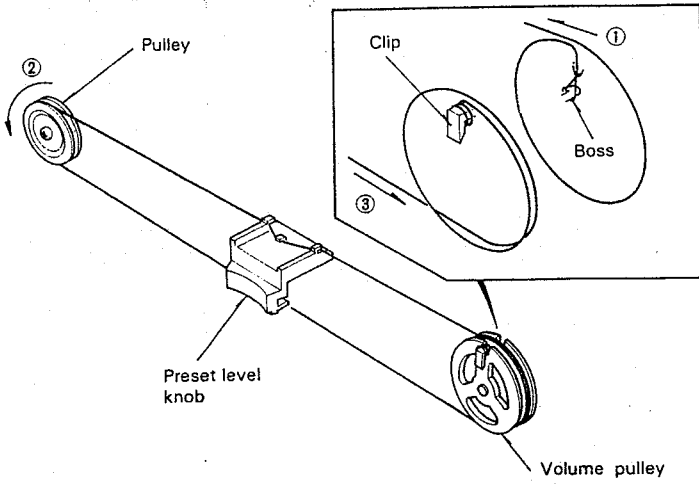
SERVICE MANUAL



*Refer to Parts List on page 12.

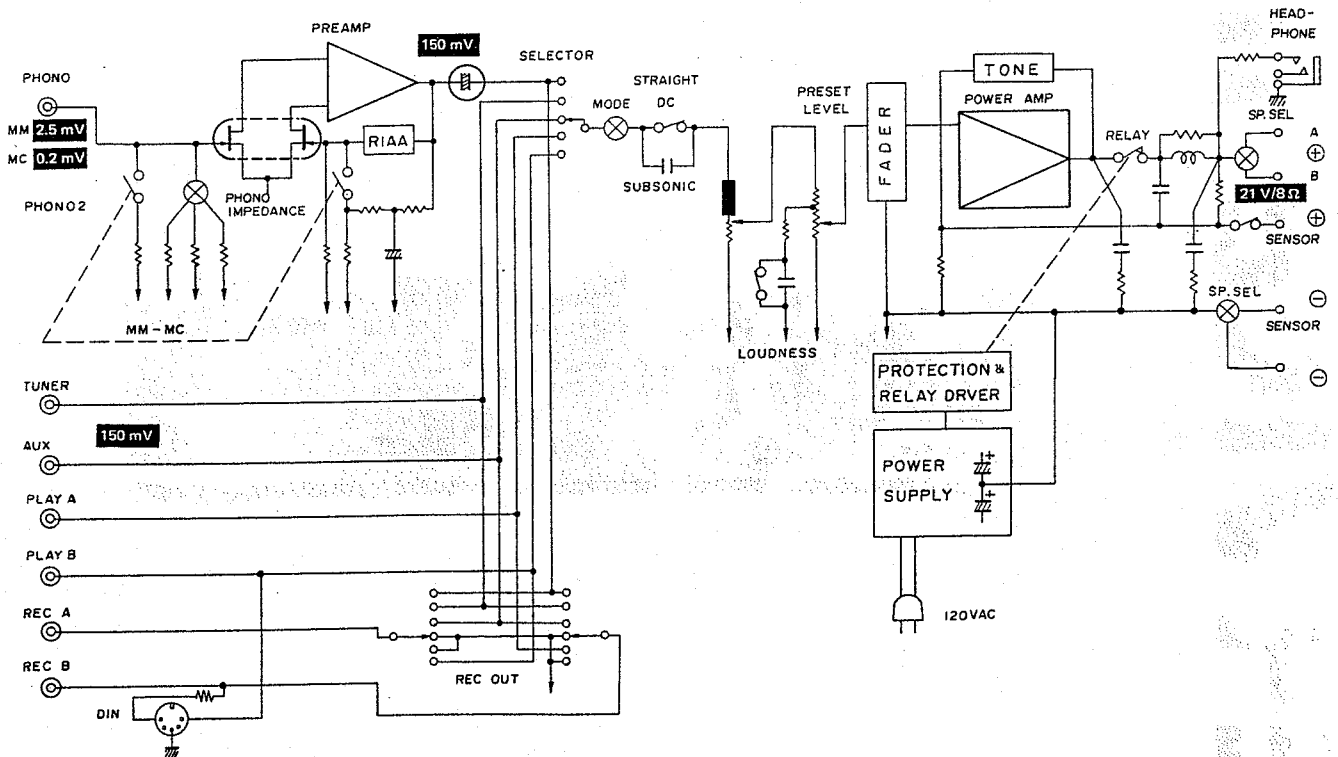
DIAL CORD STRINGING / BLOCK DIAGRAM

DIAL CORD STRINGING



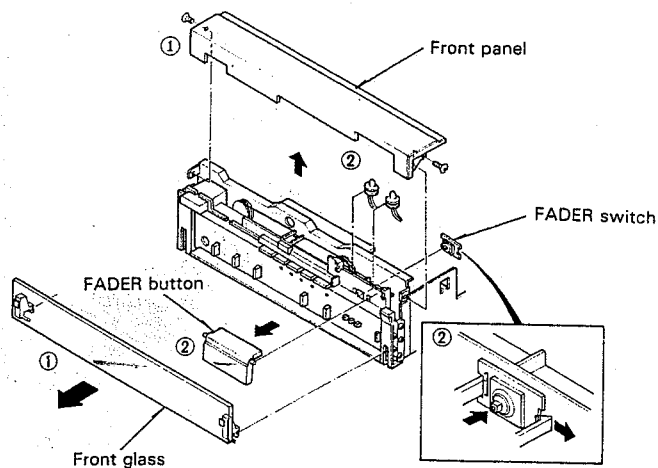
1. Tie the dial cord to the boss of volume pulley.
2. Set volume pulley to the volume shaft and turn it counterclockwise till it stops.
3. Dress the dial cord to volume pulley counterclockwise 1 turn starting from the upper side as shown (1).
4. Stretch and hook the dial cord to the pulley and dress it to the volume pulley from the lower side 1 and half turn (2 3)
5. Be sure to wind the end of the dial cord firmly to the clip of the volume pulley, so that it is tightly stretched.
5. Make sure that volume pulley is fully turned counterclockwise and fix the preset level knob by adhesive. Check that the groove of the preset level knob aligns with the 0 mark on the panel.

BLOCK DIAGRAM

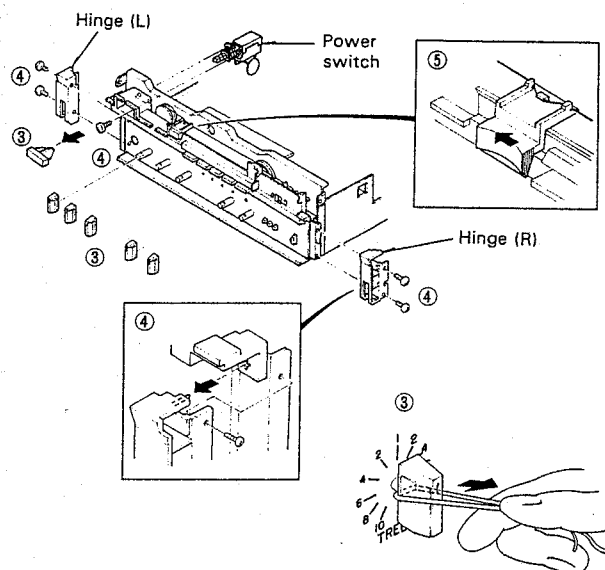


DISASSEMBLY FOR REPAIR

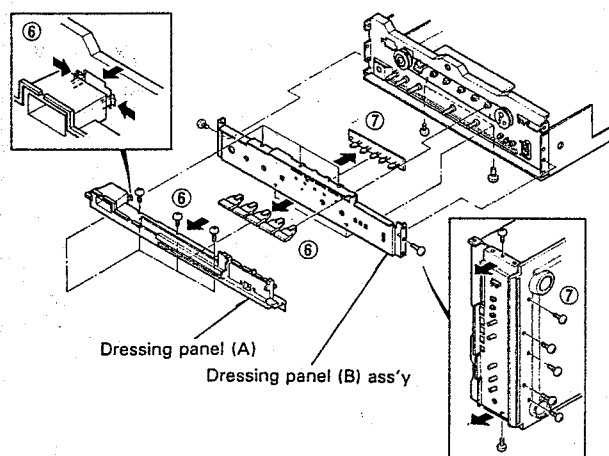
- ① Remove side plate, top plate, panel and the front-glass.
- ② Remove FADER button (parts name: Indicator) and FADER lamp. Now, you can remove the FADER switch (S4) pc board by spreading the claws outward and pushing the switch from the front.



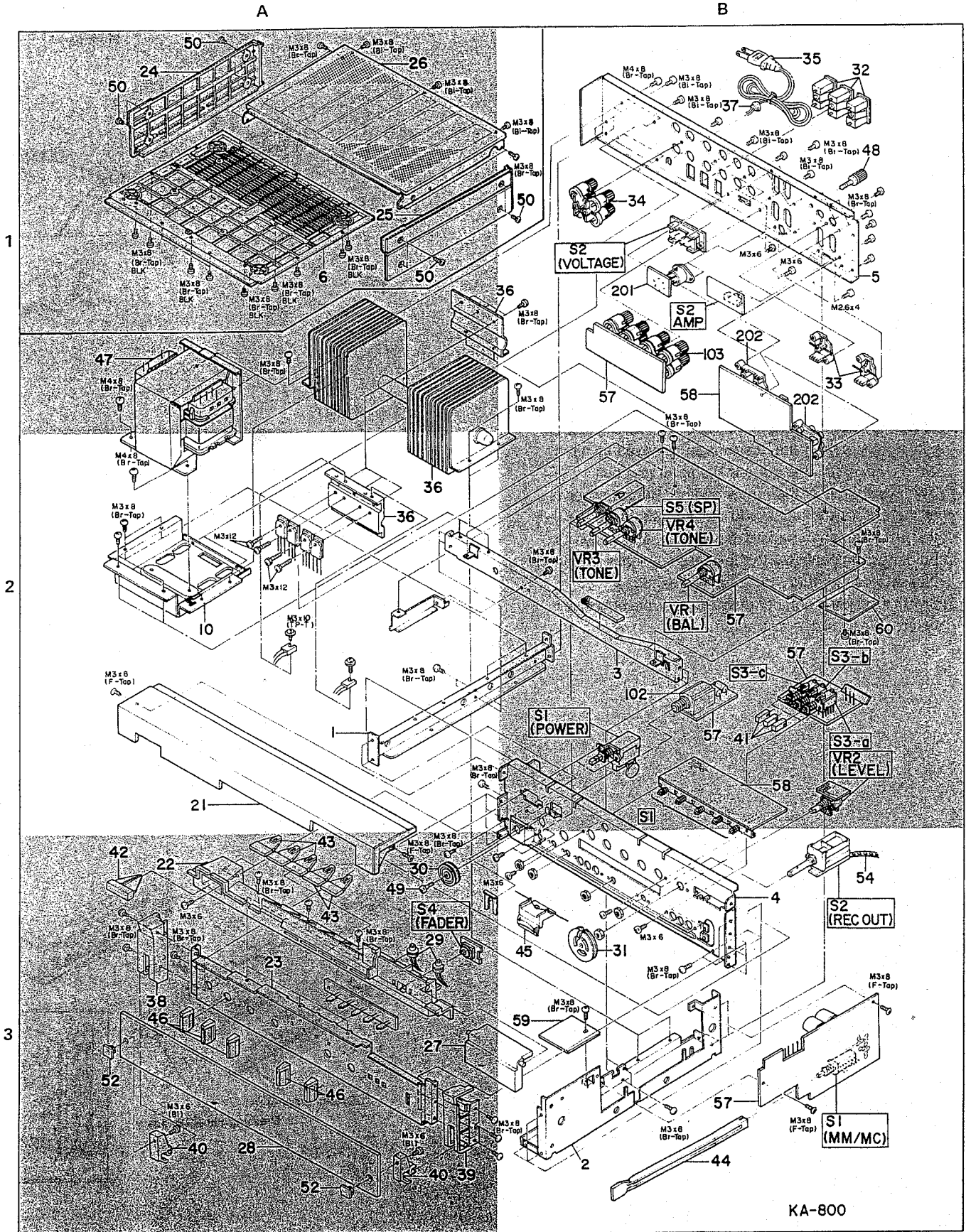
- ③ Remove the power switch button and knobs for BASS, TREBLE, BALANCE etc. by pulling them toward yourself. If they cannot be removed by hand, wind a covered wire around the shaft and pull.
- ④ Remove screws of the power switch. Remove screws at the side of the hinge and pull it to the direction of the arrow as shown. This hinge serves as a rivet to hold dressing panel (A) to the chassis. For this reason, please proceed after you remove this hinge.
- ⑤ Preset level knob can be removed after the adhesive is taken off and slid to the left.



- ⑥ Remove dressing panel (A) by pinching the claws inward and pushing it toward the front. Now, INPUT selector button can be removed.
- ⑦ Remove 5 screws at the front side of the bottom plate, also 2 screws at sides of dress panel ass'y and pull forward. Now LED pc board for INPUT selector can be removed.



EXPLODED VIEW



4	M2.6x4:	N30-2604-46	M3x8 (F-Tap):	N88-3008-46	M3x12:	N30-3012-46
	M3x6:	N30-3006-46	M3x8 (Br-Tap):	N87-3008-46	M4x8 (Br-Tap):	N87-4008-46
	M3x6 (Bi):	N35-3006-41	M3x8 (Bi-Tap):	N89-3008-46		
	M3x8 (TP-T):	N91-3008-46	M3x8 (Br-Tap) BLK:	N87-3008-45		

NOTE: Refer to Parts List on page 12.

CIRCUIT DESCRIPTION

What is Fader?!

When the power switch is turned ON, the INPUT LED lights (if none of the selector knob is pushed in, all SELECTOR LEDs will light); then, after a few seconds, the speaker protection relay is turned ON. When this occurs, sound volume gradually increases and the blue lamps built into the fader control knob increase in their brightness.

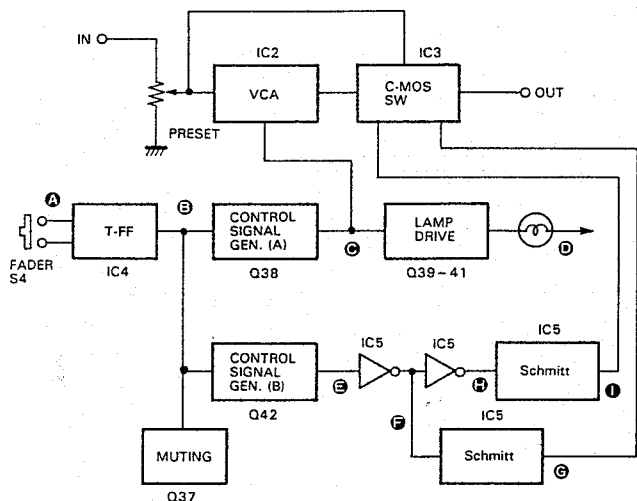
To decrease the volume to zero, lightly press the fader knob; volume will be decreased and the lamp will become dimmer. When the volume is zero, the lamp will be OFF.

When the fader control knob is pressed again, the volume gradually increases to the preset level along with the increase of brightness of the lamps.

To vary the volume, adjust the preset level knob.

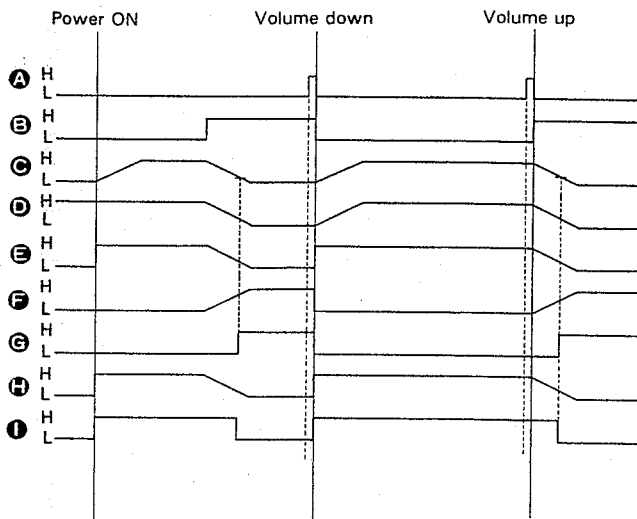
Fader circuit

A block diagram for the fader circuit is shown below.



< Block diagram of FADER >

The fader circuit is located between the volume control circuit and the power amplifier. The audio signal of the selected input (the volume level of which is preset by the preset level knob) is applied to the C-MOS switch IC directly, and is also applied to the C-MOS IC through VCA (Voltage Controlled Amplifier). The C-MOS switch IC selects one of these two signals according to the control signal.



< Timing Diagram >

Fader lamp operation

Immediately after power has been turned ON, the level at the output terminal 2 of the flip-flop IC (T-FF), IC4, is "H". However, the base level of Q38 is "L" until the protection relay is turned ON; this is because Q37 is OFF (see "Operation of Q37").

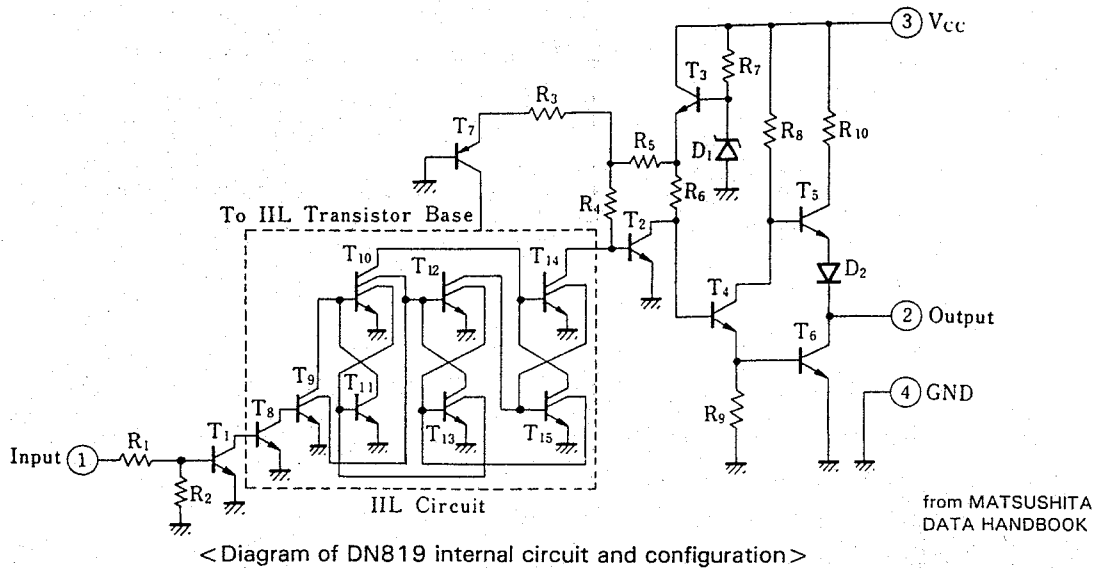
When the base level of Q38 is "L", Q38 is ON, Q39 is OFF and Q40 and Q41 are OFF. Therefore, the fader lamps are OFF. After a while, the protection relay and Q37 are turned ON. D22 is then reverse biased and the base level of Q38 becomes "H" because the output level of IC4 is "H". Q38 is therefore turned OFF.

Then, capacitor C87 connected to the collector of Q38 starts discharging, so that Q39~Q41 operate to gradually make the fader lamps brighter. The lamp current peaks when C87 is completely discharged and the fader control knob lights blue.

When fader switch S4 is pressed, the state of IC4 is inverted. All the states mentioned above are then inverted and the fader control knob becomes white.

The fader switch inverts the state of IC4 every time it is pressed.

CIRCUIT DESCRIPTION



C-MOS analog switch IC

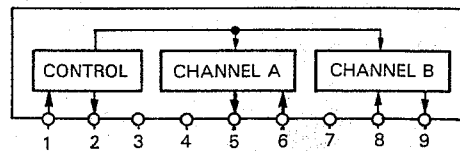
This IC includes four analog switches; each switch is turned ON when the corresponding control terminal is supplied with a positive voltage, and turned OFF when it is supplied with a negative voltage.

As described previously, the base level of Q42 is "L" when the power switch is turned ON and the relay doesn't work. Therefore, Q42 is ON and its collector level is "H". This "H" level is applied to pin 13 of IC5 (inverter) and "L" level is output from pin 12. This "L" level signal is applied to a Schmitt circuit consisting of two inverters where waveform shaping is performed. The signal is then applied to pins 12 and 13 of IC3 (analog switch IC) to turn the corresponding switches OFF. On the other hand, the "L" level signal at pin 12 of IC5 is inverted by the inverter, then applied to another Schmitt circuit. Its output is applied to pins 5 and 6 of IC3 to turn the remaining analog switches ON.

Thus, the fader circuit operates under this condition. Next, when both the power switch and the relay are turned ON, the output level at pin 2 of IC4 becomes "H". Therefore, Q42 is turned OFF and its collector level becomes "L". However, because C88 discharges gradually, the analog switches are not switched immediately after Q42 is turned OFF; it takes about 1 second to be switched. Thus, a direct signal from the volume control circuit is applied to the power amplifier.

Voltage controlled amplifier IC (AN5733)

The control voltage applied to pin 1 is amplified by the inverting amplifiers (Q16, 23 ~ 25) to drive Q33 and Q34, and is also amplified by the non-inverting amplifiers (Q15, 20 ~ 22) to drive Q32 and Q35. When the control voltage increases, the internal resistance of Q33 and Q34 increases so that the signal from Q28 is attenuated and then output to Q36 through Q40. At the same time, the internal resistance of Q32 and Q35 decreases so that the operating points of Q28, Q36 ~ Q40 are kept constant. When the control voltage decreases, the internal resistance of Q33 and Q34



< Block diagram of AN5733 >

decreases. Therefore, the audio signal is not attenuated, but is output as is. The internal resistance of Q32 and Q35 increases so that operation of Q28, Q36 ~ Q40 is stabilized.

Thus, Q32 through Q35 operate as variable resistors. When the control voltage is 4.1 V, attenuation is about 75 dB.

Voltage regulator using FET

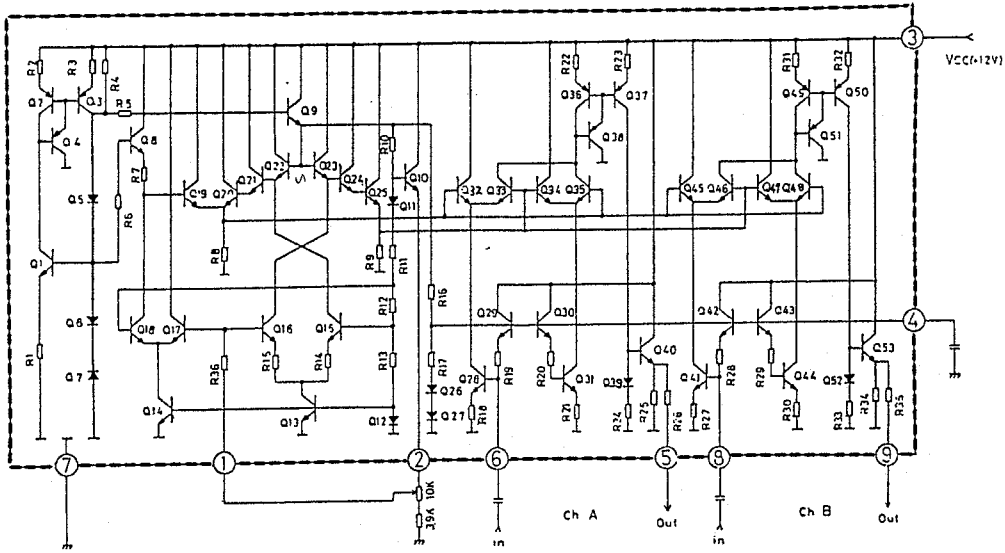
The figure below shows a junction type FET. When the gate is biased as shown above, the potential of the N layer is higher than that of the P layer and of a layer with high resistance called the depletion layer.

As bias voltage V_{GS} is increased, the thickness of the depletion layer is increased, causing the current from the source to the drain to be reduced.

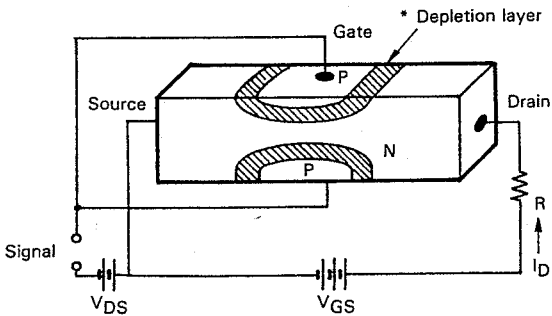
At a certain level, the depletion layer completely blocks the current flowing between the source and the drain; this is called the pinch-off state.

The following diagram shows the output characteristic of a circuit in which the gates are connected to the source.

CIRCUIT DESCRIPTION



< Diagram of AN5733 internal circuit >

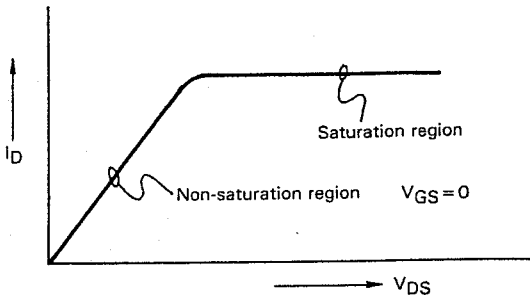


< Construction of FET >

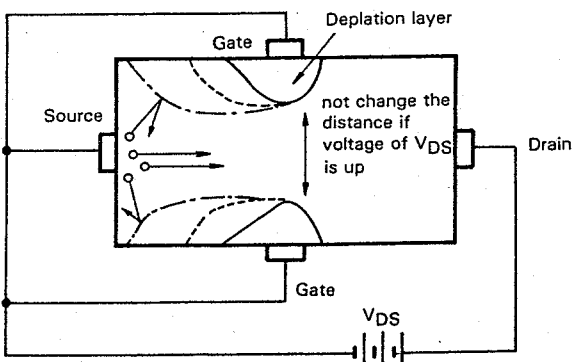
Within the non-saturated region, drain current increases in proportion to the drain-source voltage V_{DS} . It saturates, however, when V_{DS} exceeds a certain level. The circuit, therefore, shows a constant current characteristic, because the thickness of the depletion layer does not vary. Even if V_{DS} is further increased, the current is limited to a certain level by the depletion layer.

In the model KA-800, V_{DS} is set to about 19 V to operate the FET as a constant current source.

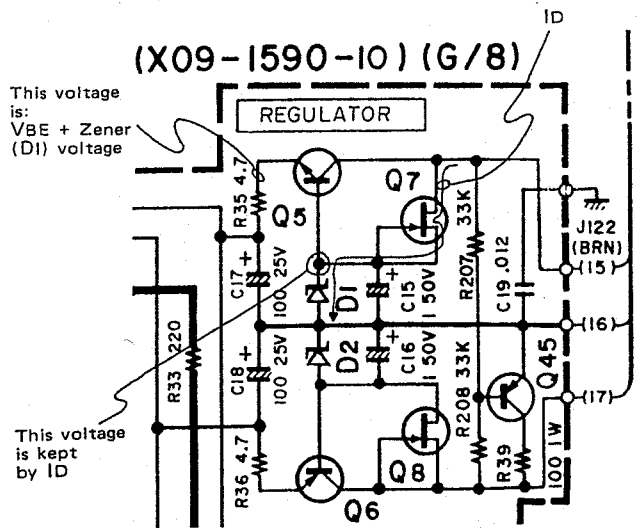
This constant current circuit is used in the preamplifier voltage regulators so that regulator output is kept constant even if the $B+$ varies.



< Drain characteristics for $V_{GS} = 0$ >



< Variation of the depletion layer >



This voltage is: $V_{BE} + Zener$ (D1) voltage

This voltage is kept by I_D

ADJUSTMENT / REGLAGES / ABGLEICH

PC BOARD

POWER AMP OFFSET VOLTAGE ADJUSTMENT

1. Set the PRESET LEVEL to "0" and the SPEAKERS switch to "B".
2. Connect the DC voltmeter between the positive and negative speaker terminals.
3. Adjust the trimming pot VR5 (VR6) for a 0V reading of the DC voltmeter.

REGLAGE DE LA TENSION DE DECALAGE (OFFSET)

1. Régler PRESET LEVEL sur "0" et l'interrupteur SPEAKERS "B".
2. Brancher le voltmètre à CC aux bornes de sortie + et -.
3. Régler le potentiomètre ajustable VR5 (VR6) pour que la tension de sortie soit nulle.

OFFSET-SPANNUNG DER ENDVERSTÄRKER

1. Den PRESET LEVEL auf "0" einstellen und den schalter SPEAKERS auf B.
2. Den Gleichspannungsmesser zwischen den Lautsprecherklemmen + und - der endverstärker anschließen.
3. Die Regelstange durch das Unterplattenloch einführen und den halbeingebetteten Widerstand VR5 (VR6) so regulieren, daß die Gleichspannungsmesser-Ablesung 0V ist.

BIAS CURRENT ADJUSTMENT

1. Set the PRESET LEVEL to "0" and the SPEAKERS switch to "B".
2. Connect the DC voltmeter between the adjusting points 18 and 20 (21 and 23) of power amp pc board ass'y (X09- 1590- 10).
3. Adjust the BIAS CURRENT trimming pot VR7 (VR8), for a 51 mV reading of the voltmeter.

REGLAGE DU COURANT DE POLARISATION

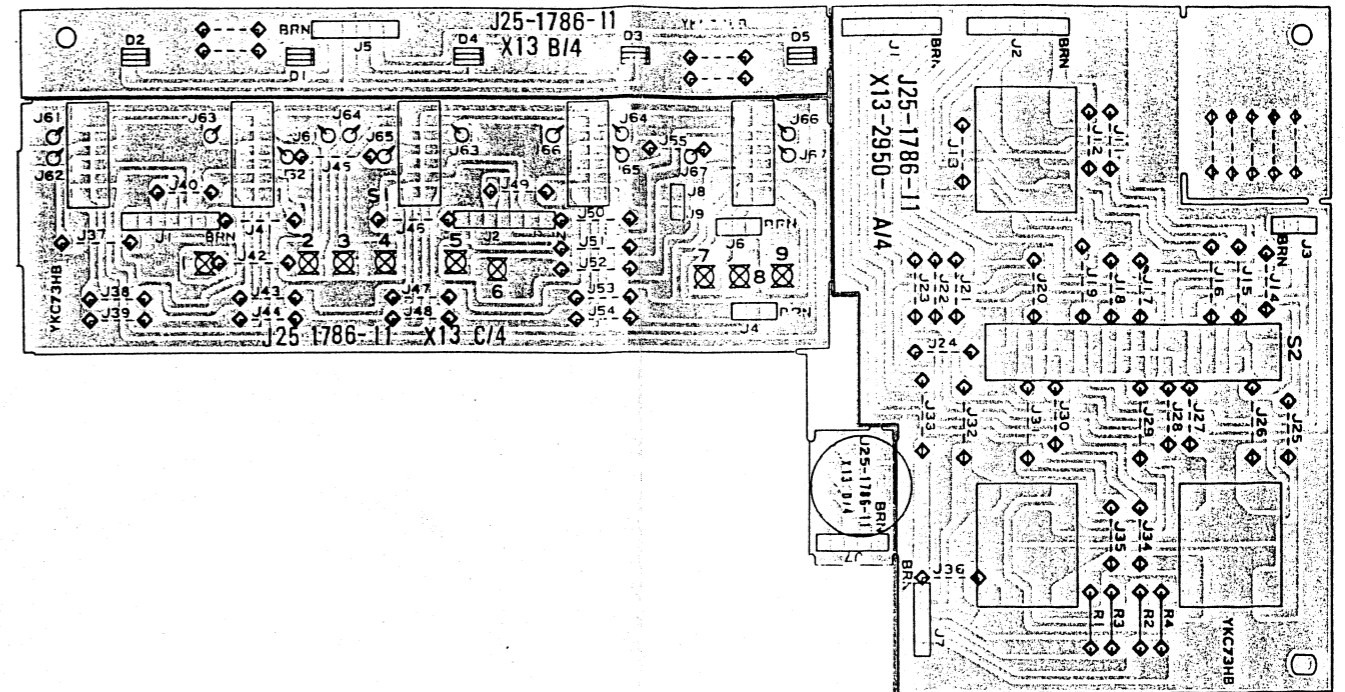
1. Régler PRESET LEVEL sur "0" et l'interrupteur SPEAKERS "B".
2. Brancher le voltmètre à CC aux points d'alignement. 18 et 20 (21 et 23), sur la plaque du circuit imprimé de l'ampli de puissance (X09- 1590- 10).
3. Régler le potentiomètre ajustable VR7 (VR8) de façon à ce que le voltmètre à CC indique 51 mV.

LEERLAUFS

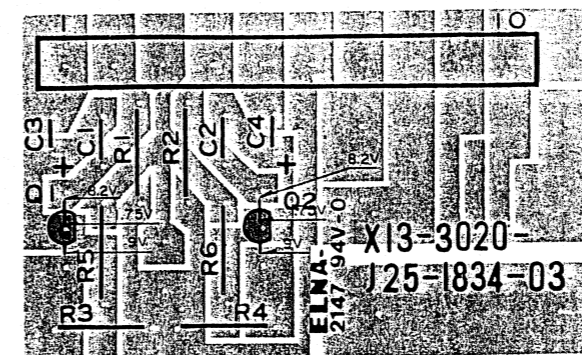
1. Den PRESET LEVEL auf "0" einstellen und den schalter SPEAKERS auf B.
2. Den Gleichspannungsmesser zwischen der Regulierungspunkte 18 und 20 (21 und 23) der endverstärker anschließen.
3. Den halbeingebetteten Widerstand VR7 (VR8) der Leistungsverstärker so regulieren, daß die Gleichspannungsmesser Ablesung 51 mV ist.

▼ SUB (X13-2950-10)

Refer to the schematic diagram for the value of resistors and capacitors.

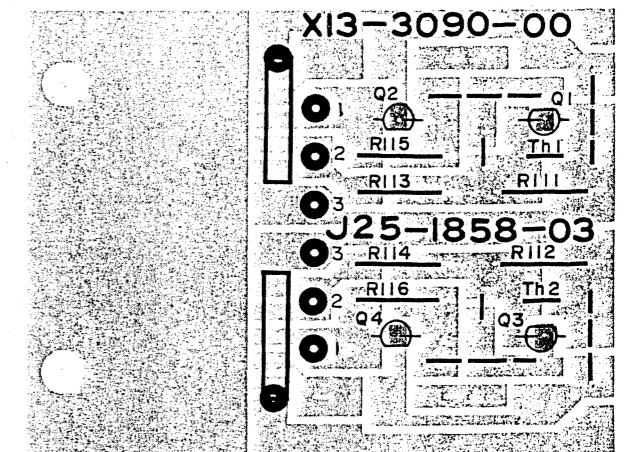


▼ SUB (X13-3020-11)

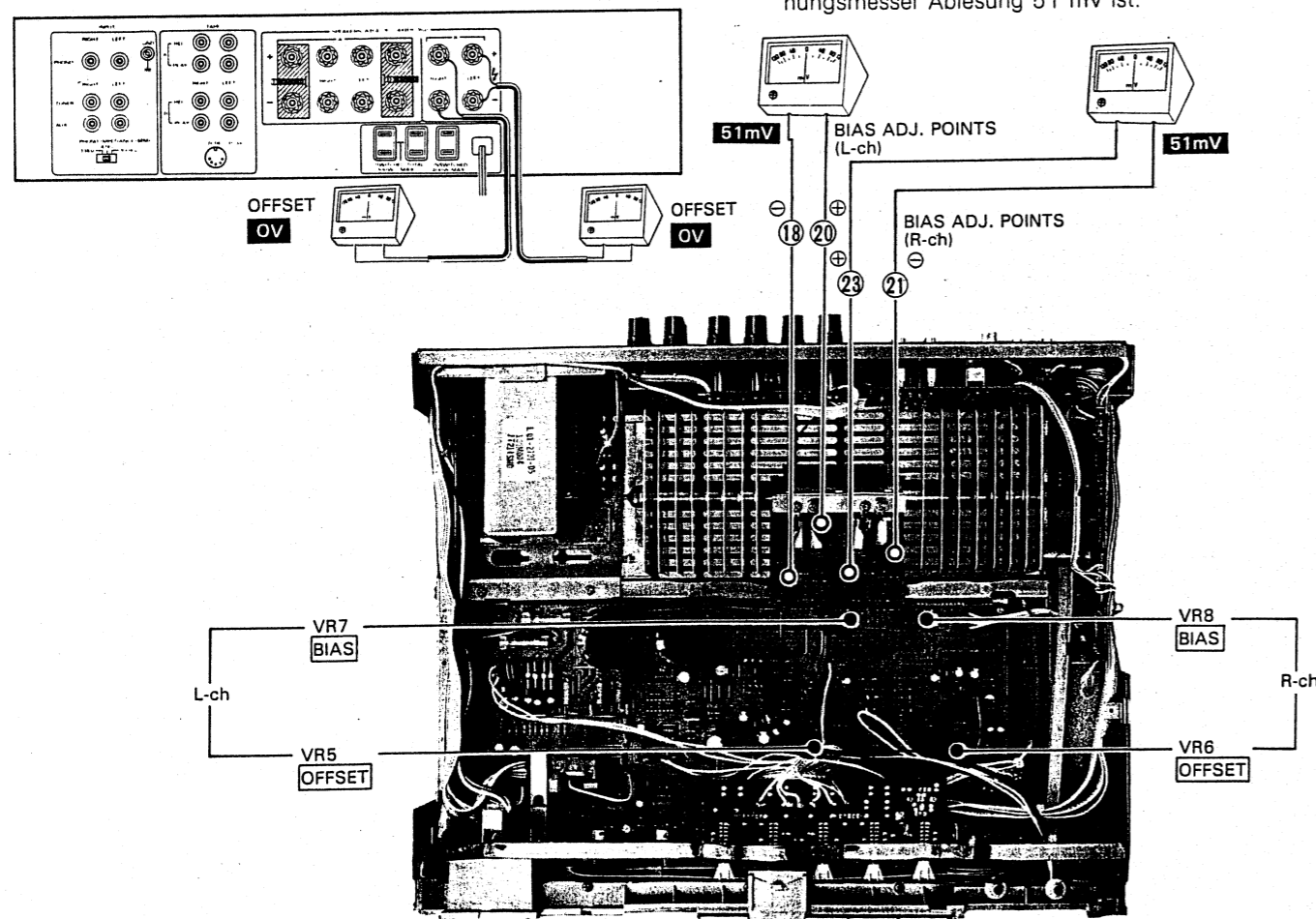


Q1,2:2SA992

▼ SUB (X13-3090-00)



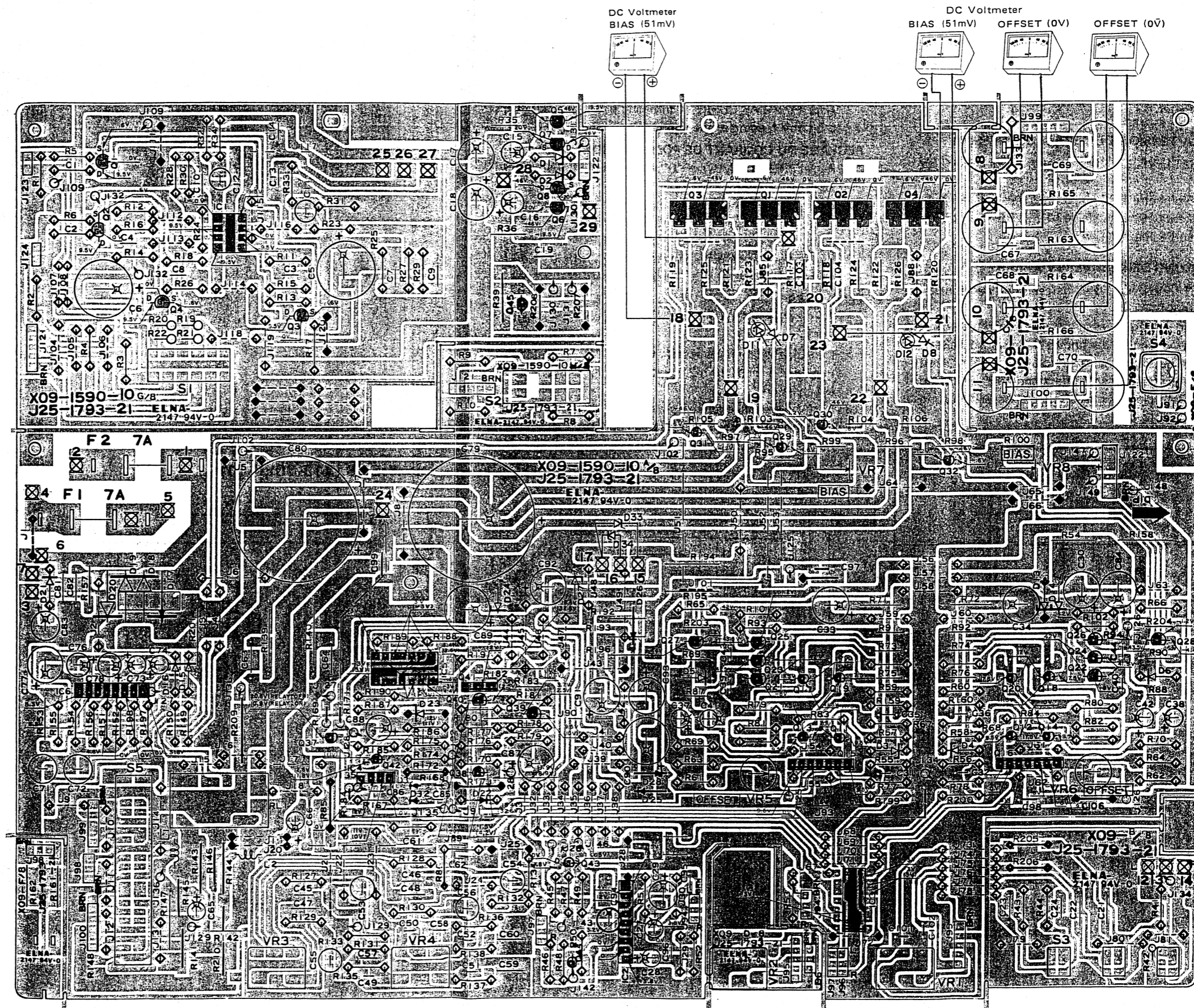
Q1,3:2SA733A
Q2,4:2SC945A



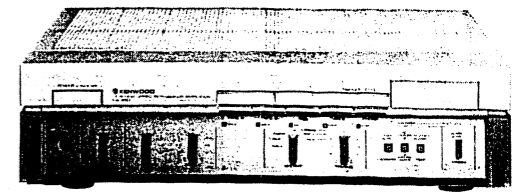
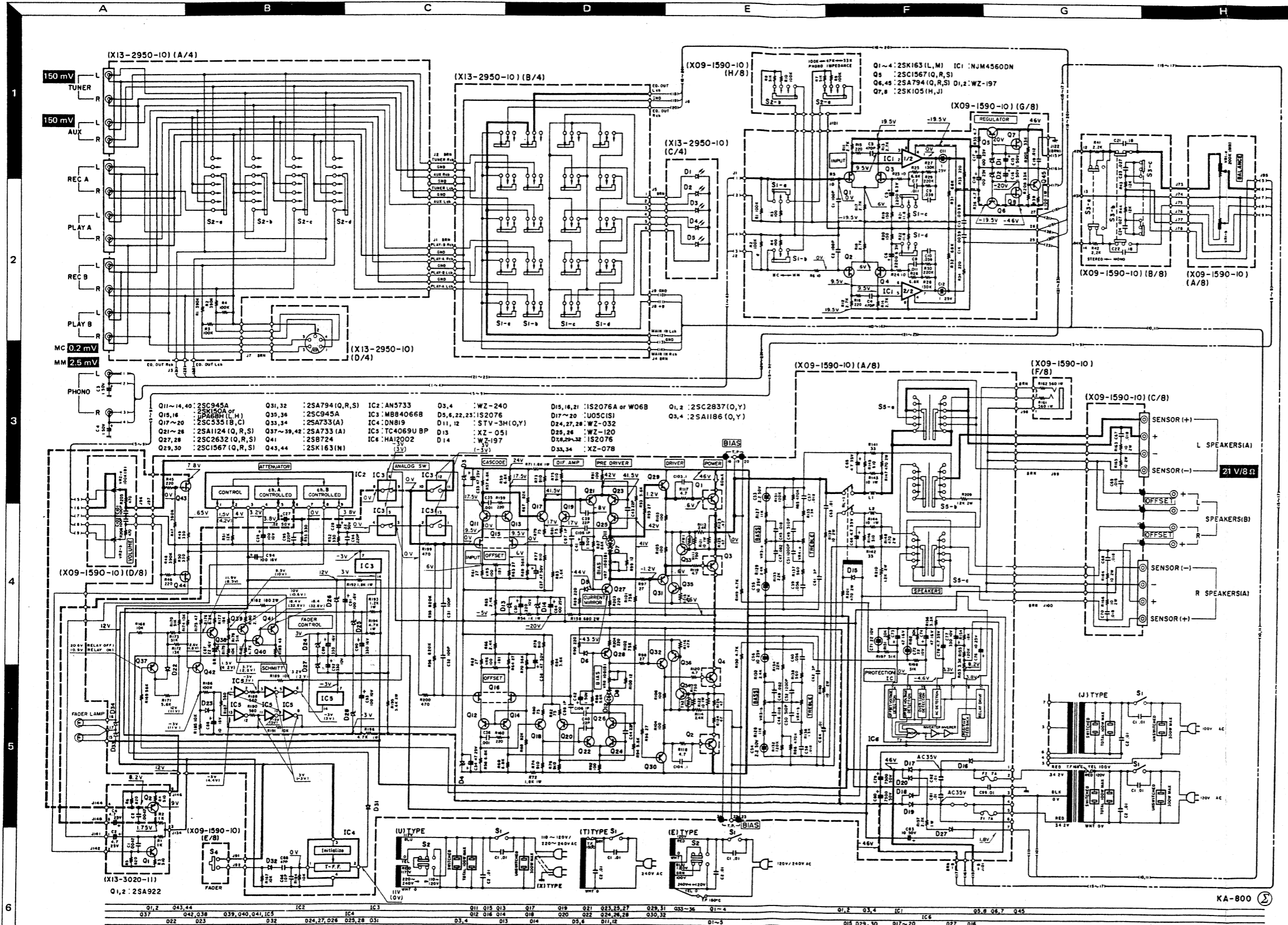
PC BOARD

Refer to the schematic diagram for the value of resistors and capacitors.

▼ AUDIO (X09-1590-10)



*Q33~36, Th1,2 and R111~116 drawn in X09-1590-10 are mounted on X13-3090-00 PC board.



SPECIFICATIONS

POWER AMPLIFIER SECTION
 Power output
50 watts* per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.009% total harmonic distortion.

Both Channels Driven
 into 8 ohms at 1,000 Hz 55 W + 55 W
 Total Harmonic Distortion (20 Hz to 20 kHz)
 AUX input to SPEAKER output 0.009% at rated power into 8 ohms
 0.007% at 1/2 rated power into 8 ohms
 Intermodulation Distortion 0.009% at rated power into 8 ohms
 (60 Hz : 7 kHz + 4 : 1)
 Damping Factor 100, at 100 Hz
 Transient Response
 Rise Time 1.0 μs
 Slew Rate ± 100 V/μs

Frequency Response
 (DC COUPLED at ON) DC to 350 kHz, +0 dB, -3 dB
 (DC COUPLED at OFF) 18 Hz to 350 kHz, +0 dB, -3 dB
 Speaker Impedance Accept 4 ohms to 16 ohms
 Input Sensitivity/Impedance
 PHONO (MM) 2.5 mV/33 k ohms, 47 k ohms and 100 k ohms
 PHONO (MC) 0.2 mV/100 ohms
 TUNER, AUX, TAPE A, B 150 mV/47 k ohms
 Signal to Noise Ratio (IHF, A)
 PHONO (MM) 84 dB for 2.5 mV input
 90 dB for 5.0 mV input
 96 dB for 10 mV input
 PHONO (MC) 64 dB for 0.2 mV input
 70 dB for 0.4 mV input
 TUNER, AUX, TAPE A, B 105 dB for 150 mV input
 Maximum Input Level Phono (MM) 200 mV (RMS), T.H.D. 0.005% at 1,000 Hz
 (MC) 10 mV (RMS), T.H.D. 0.005% at 1,000 Hz

Output Level/Impedance
 TAPE REC (Pin) 150 mV/220 ohms
 (DIN) 30 mV/80 k ohms
 Frequency Response for Phono RIAA standard curve ± 0.3 dB
 (30 Hz to 20,000 Hz)
 Tone Control
 Bass ± 10 dB at 100 Hz
 Treble ± 10 dB at 10 kHz
 Loudness Control (at -30 dB
 VOLUME Level) + 10 dB at 100 Hz
 Subsonic Filter 18 Hz, 6 dB/oct

GENERAL
 Power Requirements 60 Hz 120 V (U.S.A. and Canada Model) or 50/60 Hz 110-120 V/220-240 V
 Power Consumption 3 A (UL /CSA) 450 W (IEC)
 AC Outlets Switched 2, Unswitched 1
 Dimensions W 440 mm (17-5/16")
 H 123 mm (4-7/32")
 D 375 mm (14-3/4")
 Weight (Net) 8.5 kg (18.7 lb)

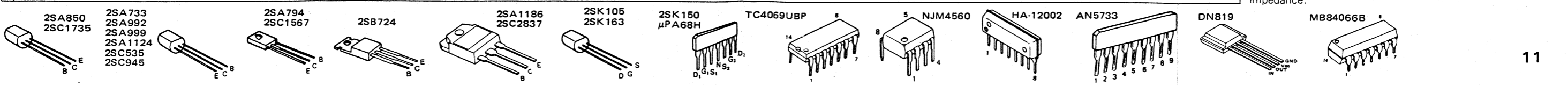
* Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

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

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

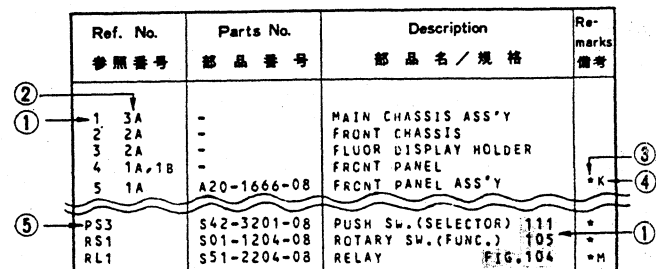
Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

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



PARTS LIST

INSTRUCTION FOR PARTS LIST



- ① Exploded view drawing No.
- ② Position in exploded view.
- ③ Symbol of new parts
- ④ Area to which parts are shipped. Example: A20-1666-08 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.

* CODE's in X09-1590-10
 K.P: X09-1590-10
 U.M.X.H. UE: X09-1590-81
 T.E: X09-1592-71

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名/規格	Re- marks 備考
KA-800			
1	2A	METALLIC FRAME(L)	
2	3B	METALLIC FRAME(R)	
3	2B	METALLIC FRAME(C)	
4	3B	SUB PANEL	
5	1B	REAR PANEL	
8	2A	MOUNTING HARDWARE	
-	041-0401-15	SPEAKER CORD (240M)	*
2021	2A	A20-1719-02 FRONT PANEL	*K
2021	2A	A20-1719-02 FRONT PANEL	PU
2021	2A	A20-1719-02 FRONT PANEL	MH
2021	2A	A20-1719-02 FRONT PANEL	UE
2021	2A	A20-1719-02 FRONT PANEL	XE
2021	2A	A20-1720-02 FRONT PANEL	T
2122	3A	A21-0329-12 DRESSING PANEL A	*
2223	3A	A21-0330-12 DRESSING PANEL B ASSY	*
2325	1A	A40-0240-02 BOTTOM PLATE	*
24	1A	A50-0084-12 SIDE PLATE (L)	*
25	1A	A50-0085-12 SIDE PLATE (R)	*
26	1A	A52-0038-02 TOP PLATE	*
-	B46-0055-30	WARRANTY CARD	P
-	B46-0060-00	WARRANTY CARD	T
-	B46-0061-30	WARRANTY CARD	K
-	B46-0062-30	WARRANTY CARD	UH
-	B46-0062-30	WARRANTY CARD	UE
-	B46-0063-13	WARRANTY CARD	X
-	B46-0063-13	WARRANTY CARD	UH
-	B46-0063-13	WARRANTY CARD	UE
-	B46-0064-20	WARRANTY CARD	X
-	B50-3251-00	INSTRUCTION MANUAL	*K
-	B50-3252-00	INSTRUCTION MANUAL	PM
-	B50-3252-00	INSTRUCTION MANUAL	X
-	B50-3253-00	INSTRUCTION MANUAL	PU
-	B50-3253-00	INSTRUCTION MANUAL	MH
-	B50-3253-00	INSTRUCTION MANUAL	UE
-	B50-3253-00	INSTRUCTION MANUAL	X
-	B50-3254-00	INSTRUCTION MANUAL	M
-	B50-3255-00	INSTRUCTION MANUAL	E
-	B50-3264-00	INSTRUCTION MANUAL	T
-	B59-0018-00	INSTRUCTION PRINT	UH
-	B59-0018-00	INSTRUCTION PRINT	UE
27	3A	B08-6013-14 INDICATOR	*
28	3A	B10-0285-04 FRONT GLASS	*
29	3A	B30-0269-05 LAMP (8V, 0.075A)	*
C1	.2	C91-0023-05 CERAMIC 0.01UF AC250V	UM
C1	.2	C91-0023-05 CERAMIC 0.01UF AC250V	HX
C1	.2	C91-0023-05 CERAMIC 0.01UF AC250V	UE
C1	.2	C91-0023-05 CERAMIC 0.01UF AC250V	TE
C1	.2	C91-0079-05 CERAMIC 0.01UF AC125V	KP
C3	.4	C24-1710-59 ELECTRO 1UF 50WV	
30	3A	D15-0073-14 PULLEY	*
31	3B	D15-0179-03 PULLEY	*
32	1B	E03-0018-05 AC OUTLET	KP
32	1B	E03-0018-05 AC OUTLET	UM
32	1B	E03-0018-05 AC OUTLET	HX
32	1B	E03-0018-05 AC OUTLET	UE
33	1B	E13-0116-05 PHONO JACK	
34	1B	E20-0815-05 TERMINAL BOARD	*
35	1B	E30-0181-05 POWER CORD	KP

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名/規格	Re- marks 備考
35	1B	E30-0459-05 POWER CORD	E
35	1B	E30-0515-05 POWER CORD	UM
35	1B	E30-0515-05 POWER CORD	H
35	1B	E30-0515-05 POWER CORD	UE
35	1B	E30-0515-05 POWER CORD	T
35	1B	E30-0587-05 POWER CORD	
35	1B	E30-0649-05 POWER CORD	X
36	2A	F01-0356-15 HEAT SINK	*
-	H01-3231-04	CARTON BOX	*U
-	H01-3231-04	CARTON BOX	MH
-	H01-3231-04	CARTON BOX	UE
-	H01-3231-04	CARTON BOX	X
-	H01-3232-04	CARTON BOX	P
-	H01-3233-04	CARTON BOX	E
-	H01-3234-04	CARTON BOX	T
-	H01-3256-04	CARTON BOX	K
-	H10-1563-02	POLYSTYRENE FIXTURE	
-	H20-0453-04	COVER	
-	H25-0078-04	BAG	UH
-	H25-0078-04	BAG	UE
37	1B	J42-0083-05 BUSHING	KP
37	1B	J42-0083-05 BUSHING	UM
37	1B	J42-0083-05 BUSHING	HT
37	1B	J42-0083-05 BUSHING	UE
37	1B	J42-0083-05 BUSHING	E
37	1B	J42-0085-05 BUSHING	X
38	3A	J50-0098-03 HINGE(L)	*
39	3A	J50-0099-03 HINGE(R)	*
40	3A	J50-0100-04 HINGE(A)	*
41	2B	K27-0187-14 KNOB (MODE, LOUD, DC)	*
42	3A	K27-0189-04 KNOB (POWER)	*
43	3A	K27-0190-14 KNOB (INPUT)	*
44	3B	K27-0191-03 KNOB (MM/MC)	*
45	3B	K29-0381-23 KNOB (LEVEL)	*
46	3A	K29-0382-14 KNOB (SP, TONE, BAL)	*
47	1A	L01-2191-05 POWER TRANSFORMER	*K
47	1A	L01-2191-05 POWER TRANSFORMER	P
47	1A	L01-2192-05 POWER TRANSFORMER	T
47	1A	L01-2195-05 POWER TRANSFORMER	UM
47	1A	L01-2195-05 POWER TRANSFORMER	HX
47	1A	L01-2195-05 POWER TRANSFORMER	UE
47	1A	L01-2196-05 POWER TRANSFORMER	E
48	1B	N08-0128-35 DRESSED SCREW	
49	1A	N09-0100-14 SCREW	
50	1A	N09-0363-05 SCREW	
52	3A	N14-0127-04 NUT	*
54	3B	S90-0043-05 REMOTE SWITCH SHAFT	*
S1	S40-1015-05	PUSH SWITCH	P
S1	S40-1022-05	PUSH SWITCH	UM
S1	S40-1022-05	PUSH SWITCH	HX
S1	S40-1022-05	PUSH SWITCH	UE
S1	S40-1024-05	PUSH SWITCH	K
S1	S40-1025-05	PUSH SWITCH	TE
S2	S31-2050-05	SLIDE SWITCH (VOLTAGE)	UM
S2	S31-2050-05	SLIDE SWITCH (VOLTAGE)	XH
S2	S31-2050-05	SLIDE SWITCH (VOLTAGE)	E
S2	S31-2050-05	SLIDE SWITCH (VOLTAGE)	UE
Q1	.2	V03-2837-10 2SC2837(O,Y)	*
Q3	.4	V01-1186-10 2SA1186(O,Y)	*

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名/規格	Re- marks 備考
57	2B	X09-1590-10 AUDIO AMP PCB ASSY	*K
57	2B	X09-1590-10 AUDIO AMP PCB ASSY	P
57	2B	X09-1590-81 AUDIO AMP PCB ASSY	UM
57	2B	X09-1590-81 AUDIO AMP PCB ASSY	HX
57	2B	X09-1590-81 AUDIO AMP PCB ASSY	UE
57	2B	X09-1592-71 AUDIO AMP PCB ASSY	TE
58	1B	X13-2950-10 SUB PCB ASSY	*
59	2B	X13-3020-11 SUB PCB ASSY	*
60	2B	X13-3090-00 SUB PCB ASSY	UM
60	2B	X13-3090-00 SUB PCB ASSY	HE
AUDIO (X09-1590-10)			
C1	.2	C71-1710-15 CERAMIC 100PF J	
C3	.4	C52-1747-16 CERAMIC 470PF K	
C5	.6	C24-0822-87 ELECTRO 2200UF 6.3WV	
C7	.8	C45-1711-35 POLYSTY 0.011UF J	
C9	.10	C46-1739-35 MYLAR 0.039UF J	
C11	.12	C26-1410-57 NP-ELEC 1UF 25WV	
C13	.14	C46-1739-25 MYLAR 0.0039UF K	
C15	.16	C24-1710-59 ELECTRO 1UF 50WV	
C17	.18	C24-1410-71 ELECTRO 100UF 25WV	
C19		C46-1712-35 MYLAR 0.012UF K	
C21	.22	C46-1718-46 MYLAR 0.18UF K	
C23	.24	C46-1727-36 MYLAR 0.027UF K	
C27	.28	C25-1722-47 ELECTRO 0.22UF 50WV	
C29		C24-1010-79 ELECTRO 100UF 10WV	
C30		C24-1022-71 ELECTRO 220UF 10WV	
C31	.32	C71-1710-15 CERAMIC 100PF J	
C33	.34	C25-1447-67 ELECTRO 47UF 25WV	
C35	.36	C46-1710-26 MYLAR 0.001UF K	
C37	.38	C25-1747-47 ELECTRO 0.47UF 50WV	
C39	.40	C71-1722-06 CERAMIC 22PF J	
C41	.42	C24-1710-59 ELECTRO 1UF 50WV	
C43	.44	C71-1722-06 CERAMIC 22PF J	
C45	.46	C46-1718-35 MYLAR 0.018UF K	
C47	.48	C46-1782-35 MYLAR 0.082UF K	
C49	.50	C48-1751-15 POLYSTY 510PF J	
C51	.52	C46-1727-25 MYLAR 0.0027UF K	
C53	.54	C26-1722-57 NP-ELEC 2.2UF 50WV	
C55	.56	C26-1410-67 NP-ELEC 10UF 25WV	
C57	.58	C46-1712-35 MYLAR 0.012UF K	
C59	.60	C46-1756-35 MYLAR 0.056UF K	
C61	.62	C71-1708-02 CERAMIC 8PF D	
C63	.64	C46-1710-35 MYLAR 0.01UF K	
C65	.66	C24-6547-57 ELECTRO 4.7UF 35WV	
C67	.70	C46-1218-35 MYLAR 0.018UF K	
C71	.72	C26-1022-67 NP-ELEC 22UF 10WV	
C73	.74	C25-1247-67 ELECTRO 47UF 16WV	
C76		C25-1410-67 ELECTRO 10UF 25WV	
C77		C24-1033-71 ELECTRO 330UF 10WV	
C78		C24-6547-57 ELECTRO 4.7UF 35WV	
C79	.80	C90-0550-05 ELECTRO 7500UF 50WV	
C81	.82	C54-2710-39 CERAMIC 0.01UF P	
C83		C24-1710-69 ELECTRO 10UF 50WV	
C84		C24-1410-71 ELECTRO 100UF 25WV	
C85		C71-1747-05 CERAMIC 47PF J	
C86		C71-1710-02 CERAMIC 10PF D	
C87		C25-1222-67 LL-ELEC 22UF 16WV	
C88		C25-1210-67 LL-ELEC 10UF 16WV	
C89	.90	C25-1233-77 ELECTRO 330UF 16WV	
C91		C25-1210-77 ELECTRO 100UF 16WV	
C92		C24-1033-71 ELECTRO 330UF 10WV	
C93		C24-1010-79 ELECTRO 100UF 10WV	

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
C94	C25-1210-77	ELECTRO 100UF 16WV	
C95 ,96	C71-1722-15	CERAMIC 220PF J	
C97 ,98	C71-1701-02	CERAMIC 1PF C	
C99	C55-1710-38	CERAMIC 0.01UF Z	
C101,102	C71-1710-15	CERAMIC 100PF J	
C103,104	C46-1710-45	MYLAR 0.1UF K	
C105,106	C71-1701-02	CERAMIC 1PF C	
102 2B	E11-0081-05	PHONE JACK	*
103 1B	E20-0814-05	TERMINAL BOARD	*
F1 ,2	F05-6322-05	FUSE (6.3A)	TE
F1 ,2	F05-7025-05	FUSE (7A)	UM
F1 ,2	F05-7025-05	FUSE (7A)	HX
F1 ,2	F05-7025-05	FUSE (7A)	UE
F1 ,2	F05-7026-05	FUSE (7A)	KP
-	J13-0055-05	FUSE HOLDER	
L1 ,2	L39-0085-05	COIL	
R19 ,20	R48-2215-15	METAL 150 J 2E	
R21 ,22	R48-2118-83	METAL 11.8 J 2E	
R35 ,36	R43-1247-95	FL-PROOF RD4.7 J 2E	
R39	R47-5410-15	FL-PROOF RS100 J 3A	
R54	R47-5410-25	FL-PROOF RS1K J 3A	
R71 ,72	R47-5418-25	FL-PROOF RS1.8K J 3A	
R73 -76	R43-1291-15	FL-PROOF RD910 J 2E	
R87 ,88	R43-1256-25	FL-PROOF RD5.6K J 2E	
R89 ,90	R43-1222-15	FL-PROOF RD220 J 2E	
R91 ,92	R43-1210-15	FL-PROOF RD100 J 2E	
R95 -98	R43-1227-05	FL-PROOF RD27 J 2E	
R99 ,100	R43-1212-05	FL-PROOF RD12 J 2E	
R103-106	R43-1210-15	FL-PROOF RD100 J 2E	
R117-120	R43-1247-95	FL-PROOF RD4.7 J 2E	
R121,122	R47-5410-05	FL-PROOF RS10 J 3A	
R123-126	R92-0203-05	CEMENT 0.47 K 3H	
R139,140	R47-5510-05	FL-PROOF RS10 J 3D	
R141,142	R43-1233-05	FL-PROOF RD33 J 2E	
R143,144	R47-5410-05	FL-PROOF RS10 J 3A	
R145,146	R43-1251-15	FL-PROOF RD510 J 2E	
R147,148	R47-5547-15	FL-PROOF RS470 J 3D	
R153	R47-5433-25	FL-PROOF RS3.3K J 3A	
R157	R47-5422-25	FL-PROOF RS2.2K J 3A	
R158	R47-5568-15	FL-PROOF RS680 J 3D	
R161,162	R47-5456-15	FL-PROOF RS560 J 3A	
R163-166	R47-5510-05	FL-PROOF RS10 J 3D	
R182	R47-5518-15	FL-PROOF RS180 J 3D	
R183	R43-1243-05	FL-PROOF RD43 J 2E	
R192	R47-5418-25	FL-PROOF RS1.8K J 3A	
R193	R47-5412-25	FL-PROOF RS1.2K J 3A	
R194	R47-5447-25	FL-PROOF RS4.7K J 3A	
R195	R47-5556-25	FL-PROOF RS5.6K J 3D	
R196	R47-5447-25	FL-PROOF RS4.7K J 3A	
R201	R47-5547-15	FL-PROOF RS470 J 3D	
R203,204	R43-1222-15	FL-PROOF RD220 J 2E	
R209,210	R47-5512-25	FL-PROOF RS1.2K J 3D	
VR1	R06-5062-05	POTENTIOMETER BAL	*
VR2	R06-5063-05	POTENTIOMETER LEVEL	*
VR3 ,4	R06-4051-05	POTENTIOMETER TONE	*
VR5 ,6	R12-0502-05	TRIMMING POT OFFSET	
VR7 ,8	R12-0077-05	TRIMMING POT BAIS	
RL1	S51-2045-05	RELAY	*
S1	S40-4033-05	PUSH SWITCH MM/MC	*

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
S2	S31-2059-05	SLIDE SWITCH IMPEDANCE	
S3	S42-3046-05	PUSH SWITCH	*
S4	S40-1012-05	PUSH SWITCH FADER	
S5	S29-1129-05	ROTARY WAFER SW SP	*
D1 ,2	V11-4100-30	WZ-197	
D3 ,4	V11-0287-05	WZ-240	
D5 ,6	V11-0271-05	1S2076	
D7 ,8	V11-0271-05	1S2076	
D11 ,12	V21-0015-05	STV-3H(O,Y)	
D13	V11-4103-60	XZ-051	
D14	V11-4100-30	WZ-197	
D15 ,16	V11-0273-05	1S2076A,W06B	
D17 -20	V11-2100-10	U05C(S)	
D21	V11-0273-05	1S2076A,W06B	
D22 ,23	V11-0271-05	1S2076	
D24	V11-4172-26	WZ-032	
D25 ,26	V11-4100-40	WZ-120	
D27 ,28	V11-4172-26	WZ-032	
D31 ,32	V11-0271-05	1S2076	
D33 ,34	V11-4110-70	XZ-078	
IC1	V30-0344-40	NJM4560D-N	*
IC2	V30-0514-10	AN5733	
IC3	V30-0516-10	MB84066B	
IC4	V30-0515-10	DN819	
IC5	V30-0297-20	TC4069UBP	
IC6	V30-0291-10	HA12002	
Q1 -4	V09-0144-60	2SK163(L,M)	
Q5	V03-0507-05	2SC1567(Q,R,S)	
Q6	V01-0221-05	2SA794(Q,R,S)	
Q7 ,8	V09-0127-40	2SK105(H,J)	
Q11 -14	V03-0405-05	2SC945(A)	
Q15 ,16	V09-0145-30	UPA68H(L,M),2SK105A(GR,BL)	
Q17 -20	V03-0402-05	2SC535(B,C),2SC785(R,O)	
Q21 -26	V01-1124-10	2SA1124(Q,R,S)	
Q27 ,28	V03-2632-10	2SC2632(Q,R,S)	
Q29 ,30	V03-0507-05	2SC1567(Q,R,S)	
Q31 ,32	V01-0221-05	2SA794(Q,R,S)	
Q33 ,34	V01-0733-90	2SA733(A)	
Q35 ,36	V03-0405-05	2SC945(A)	
Q37 -39	V01-0733-90	2SA733(A)	
Q40	V03-0405-05	2SC945(A)	
Q41	V02-0724-00	2SB724	
Q42	V01-0733-90	2SA733(A)	
Q43 ,44	V09-0144-40	2SK163(N)	
Q45	V01-0221-05	2SA794(Q,R,S)	
TH1 ,2	V22-0027-05	5TP-41L	
SUB (X13-2950-10)			
D1 -5	B30-0258-05	LED	*
201 1B	E06-0510-05	DIN CONNECTOR	
202 1B	E13-0429-05	PHONO JACK	*
S1	S42-5020-05	PUSH SWITCH	*
S2	S90-0038-05	SLIDE SWITCH (REC OUT)	*
SUB (X13-3020-11)			
C1 ,2	C52-1747-26	CERAMIC 0.0047UF K	
C3 ,4	C25-1447-57	ELECTRO 4.7UF 25WV	
Q1 ,2	V01-0992-00	2SA992	
SUB (X13-3090-00)			
Q1 ,2	V01-0733-90	2SA733	
Q3 ,4	V03-0405-05	2SC945	
TH1 ,2	V22-0027-05	5TP-41L	

SEMICONDUCTOR SUBSTITUTION

SEMICONDUCTOR SUBSTITUTION	
SEMICONDUCTOR	SUBSTITUTION
2SA733(A)	2SA999
2SA794(Q,R,S)	2SA850 *
2SC945	2SC2320
2SC1567(Q,R,S)	2SC1735 *
2SK150A(GR,BL)	μPA68H
WZ-032	XZ-033
WZ-120	XZ-122
WZ-197	XZ-200
WZ-140	YZ-140
WZ-240	XZ-245
1S2076	1S1555

* Caution: when using the substitution, make sure the transistor leads are inserted in the correct position.

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 (Far East)	U
PX (Europe)	<u>UE</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.

A product of
TRIO-KENWOOD CORPORATION
 6-17, 3-chome Aobadai, Meguro-ku, Tokyo 153, Japan

KENWOOD ELECTRONICS, INC.
 1315 E. Watsoncenter Rd, Carson, California 90745, U.S.A.
 75 Seaview Drive, Secaucus, New Jersey 07094, U.S.A.
 1098 North Tower Lane, Bensenville, Illinois 60106, U.S.A.
TRIO-KENWOOD ELECTRONICS, N.V.
 Leuvensesteenweg 504 B-1930 Zaventem, Belgium
TRIO-KENWOOD ELECTRONICS GmbH
 Rodolf-Braas-Str. 20, 6056 Heusenstamm, West Germany
TRIO-KENWOOD FRANCE S.A.
 5, Boulevard Ney, 75018 Paris, France
TRIO-KENWOOD SVENSKA AB
 Kemistvagen 10A, S-183 21 Taby, Sweden
TRIO-KENWOOD (AUSTRALIA) PTY. LTD.
 30 Whiting St., Artarmon, N.S.W. 2064, Australia
KENWOOD & LEE ELECTRONICS, LTD.
 Room 501, Wang Kee Building, 5th Floor, 34-37, Connaught Road, Central, Hong Kong